

Harm Reduction Campaign Project Report

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Introduction

In recent years, North America has seen a significant increase in the incidence of Infective Endocarditis (IE) in people who inject drugs (PWID) (Slipczuk et al., 2013). This trend is consistent with data from the Middlesex-London Health Unit catchment area. From April 1, 2007, to March 30, 2017, PWID (\geq aged 18 years) made up 54.6% of first-episode IE cases admitted to hospitals in London, Ontario, Canada (Rodger et al., 2018). This study also indicated that PWID are at an increased risk for reinfection (Rodger et al., 2018). There are multiple factors thought to impact the rate of IE in PWID including, specific drugs being more likely to breed the bacteria like *Staphylococcus aureus* (*S. aureus*) that commonly cause IE; the reuse of injection drug preparation equipment (IDPE); and the preparation methods.

The hypothesis that particular drugs may increase the risk of IE in PWID is further supported by Weir and colleagues, who demonstrate the correlation between an increase in hydromorphone¹ (hydros) prescriptions and admissions of PWID for IE in Ontario, Canada (Weir et al., 2019). Local research was conducted with PWID by Mitra and et al. (2017) on the acceptability of a supervised injection site to support the increased use of Hydromorphone Controlled Release (HCR) capsules. Researchers hypothesize that the binding agents in HCR act as a nutrient source for bacteria (*S. aureus*) and viruses (Human Immunodeficiency (HIV) and Hepatitis C (HCV)) (Lake & Kennedy, 2016; Shah et al., 1996).

The preparation methods of HCR for injection may also amplify the risk of infection. As a result of the low solubility HCR², the opioid must be crushed and dissolved before injection. It is common when using hydros that some of the leftover opiates are retained in the filter and cooker after the initial use. The remaining opioid in the used injection drug preparation equipment (IDPE) can be reused by solubilizing the residual drug with water (Kasper et al., 2018). This residual is referred to as a “wash” that can be stored, reused, or resold (Roy, Arruda, & Bourgois, 2011)³. Retaining the wash, and any other IDPE for the subsequent injection can increase the risk for blood-borne infections (Weir et al., 2019).

Laboratory studies demonstrate heating (or “cooking”) the hydros (wash) to a boil before injection can significantly reduce the presence of HIV (Ball et al., 2018) and methicillin-resistant and methicillin-susceptible *S. aureus*⁴ (Kasper et al., 2018). In June 2017, local researchers informed program staff and partners at Regional HIV/AIDS Connection (RHAC), London Intercommunity Health Center (LIHC), and the Middlesex-London Health Unit (MLHU) about the benefits of heating hydromorphone before injection. Since then, these agencies have been communicating this information to their clients who inject hydros. Also, these findings were shared more widely in the *London Free Press* (Richmond, 2017a, 2017b; Sher, 2018).

¹ In this case, Hydromorphone refers to dihydromorphinone and Hydromorphone Controlled Release (HCR). Dihydromorphinone and Hydromorphone Controlled Release sold under the brand names Dilaudid and Hydromorph Contin (HMC) respectively. PWID refer to Dilaudid and HMC as “Dee’s” and hydros respectively. For the purposes of this report both HMC and Dilaudid will be referred to as “hydros”.

² HCR capsule contains small beads that must be crushed prior to injection.

³ HMC is more likely to produce a wash or multiple washes; however, Dilaudid can also produce a wash.

⁴ Which can cause IE.

As a result of these studies, it was recommended by researchers that PWID should “cook your wash.” This message was actively communicated to some portions of the population who inject hydros; however, there may be communication deficits and other unknown barriers to adopting the practice of “cooking”, that are unmet by the communication to date. The purpose of this project was to identify barriers and the most effective dissemination methods to increase the uptake of this harm reduction practice.

Methods

Population

Focus group participants were required to meet the following inclusion criteria:

- Have injected hydros in the past six months,
- aged 18 years or older,
- speak and have a good command of the English Language, and
- have the capacity to provide consent.

Focus group participants were excluded under the following conditions:

- Do not inject hydros or
- are unable to give consent.

Front-line staff (FLS) at both RHAC and LIHC identified participants at each site who met the criteria.

FLS participants for key informant interviews were required to meet the following inclusion criteria:

- Have permission from their CEO/ED to participate,
- aged 18 years or older,
- speak and have a good command of the English Language, and
- work closely with PWID.

FLS were excluded under the following conditions:

- Do not provide services to PWID.

Design and Data Collection Tools

Between November 29, 2018, and January 30, 2019, 12 structured interviews were conducted with FLS from 11 agencies who support clients who inject hydros. Approval from each agency’s Executive Director was sought before recruiting any FLS to participate. Each interview had between one and four FLS present, an interviewer, and a recorder who was taking notes. The notes were read back to interviewees for approval. Each interview was approximately one hour in length.

On December 12th and 13th, 2019, two focus groups with people who inject hydros were conducted at RHAC and LIHC. There was a total of 16 participants across both focus groups. Each focus group had one

outreach expert, one moderator, and two recorders to take notes. FLS from various agencies who work with PWID recruited clients for the focus groups. Before attending the focus groups, all participants were screened and consented to participate. Each participant received a meal plus a \$40.00 cash incentive. During the focus group, the benefits associated with cooking a hydros wash were presented to participants by the outreach expert. While this is not typically part of a focus group methodology, the presentation was essential to ensure the harm reduction message was accurately conveyed to the group.

Qualitative Analysis

This project intended to determine the most effective ways to disseminate the “cook your wash” message across the PWID community. A summative inductive content analysis (Hsieh & Shannon, 2005) was conducted where a coding framework was established based on the focus group and interview guide; however, during the analysis process additional themes were added to the framework. This form of content analysis involved quantifying and comparing codes. The analysis was conducted using NVivo 10 for Windows with two independent analysts. One analyst attended all focus groups and interviews, and the other analyst was not involved in the project before the data analysis phase. The detailed coding reports were populated in NVivo 10 for Windows and further analyzed in Microsoft® Excel.

Approval

The Middlesex-London Health Unit’s internal Research Advisory Consultation Lead approved the methodology and risk of the project in November 2018.

Results

The two independent analysts had a moderate-strong agreement for the majority of FLS Interviews and Focus Groups, with an average Kappa of 0.79. After coding the results independently, analysts reviewed any discrepancies in coding until full agreement was reached across all sources.

Understanding Hydros Preparation

The focus group participants described how to prepare hydros in the following three steps;

- crushing,
- dissolving in water (or other solution), and
- cooking or heating.

The order and the details of each step varied across focus group participants. The use of a pill crusher was only mentioned once by focus group participants. The majority of participants described repurposing other items such as a BIC® lighter, metal marker, ink pen with a metal tip, the top of nail polish or mascara, etc. to crush hydros. Focus group participants also described using injection drug preparation equipment

Source	Interrater reliability (Cohen’s Kappa coefficient)	Level of agreement
Interview 1	0.58	Weak
Interview 2	0.78	Moderate
Interview 3	0.72	Moderate
Interview 4	0.81	Strong
Interview 5	0.77	Moderate
Interview 6	0.90	Strong
Interview 7	0.80	Strong
Interview 8	0.85	Strong
Interview 9	0.94	Almost perfect
Interview 10	0.73	Moderate
Interview 11	0.68	Moderate
Interview 12	0.83	Strong
Focus Group 1	0.79	Moderate
Focus Group 2	0.87	Strong

Figure 1. Initial interrater reliability by source with the level of agreement. Level of agreement based on research by McHugh (2012).

(IDPE) in innovative ways to crush hydros. For example, some clients will place the green cooker handle, included in the safe injection kits, on the plunger end of a 1cc syringe or the needle side of a 3cc syringe and use this to crush their hydros inside the cooker.

The perspectives of the focus group participants were mixed regarding whether to dissolve the hydro beads before crushing or to crush then dissolve. Some participants indicated that allowing the ‘hydros beads’ to sit in water made the crushing process easier. Regardless of the order, crushing and dissolving hydros in a solution were identified as necessary steps by all participants.

Many of the focus group participants included heating or cooking as part of their drug preparation. A few clients indicated heating hydros for at least 10 seconds or until the mixture bubbles.⁵ FLS also indicated clients typically use lighters to heat hydros,

“...most of them are smokers, so they will have a lighter on them.”

Some participants specifically mentioned the use of a lighter for cooking, but highlighted that a spark from a lighter and an alcohol swab could also be used to cook,

“Even if you have a lighter that doesn’t work, all you need is an alcohol swab to spark it.”

There were participants in the focus group who indicated they did not cook or did not include cooking when describing their drug preparation methods. For others, cooking occurs at certain times, but not others,

“I heat the first hit, and then I don’t cook the wash.”

“I’ll heat for my last hit.”

Focus group participants who did not cook their hydros often reported using the “Shake and Bake” method. When using this method, participants will crush the drug, remove the plunger and place the crushed drug in the syringe with some water, the mixture is shaken and then injected. Typically, the drug is not filtered or heated before injection when using this process. Participants described using this method with “Dees” or Dilaudid,

“I’ve been doing a ‘cold shake’ with Dilaudids, with no filter, the ‘shake and bake’.”

Sharing and Reusing Injection Drug Preparation Equipment

Injection Drug Preparation Equipment

Majority of focus group participants indicated they have shared IDPE with someone or would reuse their equipment. In particular, the group discussed sharing or reuse of needles and syringes with the highest frequency; however, participants were aware of the harms associated with sharing and reusing IDPE. Participants discussed that sharing or reusing equipment is likely occurring in specific circumstances,

⁵ Heating the drug for 10 seconds or until it comes to a rolling boil is considered best practice.

“I usually don’t reuse, but sometimes [I will reuse] the 3 [cc] barrel, or if it’s my last one. I try not to reuse any of my gear though...”

“If it’s my last rig [needle and syringe] and it’s barbed, I’ll sharpen it...”

Whenever possible, focus group participants described how they reduce harm when sharing or reusing IDPE,

“The 3s [3cc syringe] you can change the tip, I’ll draw it up, and then I’ll switch the tip.”

However, some participants had experienced illness as a result of sharing or reusing IDPE and were strongly against this practice,

“There isn’t a reason to reuse gear, London cares will come out to wherever you are [...] As much as you’re sick, there is no point in grabbing a dirty rig...”

“I don’t share gear, only clean stuff.”

Sharing or Reusing Hydro Washes

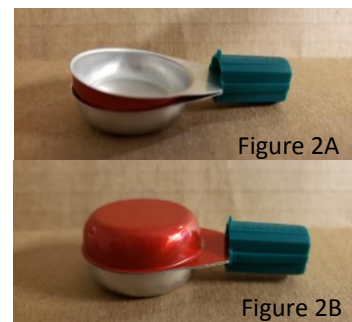
With regards to sharing hydro washes, focus group participants spoke about how to store hydro washes with the greatest frequency. Preferences for how to store a wash for later use varied widely across focus group participants. Many participants indicated they would fold the cooker in half and then place it in a garment of clothing (e.g. pants, bra, underwear etc.) to preserve a wash.

“Fold the cooker in half, wrap it up in tissue paper put [it] in a pocket.”

Other participants reported storing washes in a small bag without folding the cooker.

“I don’t fold it [the cooker] I just put it in the bag.”

FLS from organizations whose primary role is healthcare and outreach have also observed clients using these storage methods. Members of the focus group described using an additional cooker and green cooker handle to hold both cookers together. In some cases, focus group participants described holding two cookers together, one inside the other (Figure 2A) or the inside of both cookers facing each other (Figure 2B). In both, the two cookers are held together with the green cooker handle.



“I use two cookers, cup them, on inside the other and then put the green holder on.”

Figure 2. References to sharing or reusing washes across all participant groups by percent.

When describing their storage methods, some focus group members indicated they would try to remove any remaining drug out of the cotton filter by squeezing it out and then throw the filter away. The primary reason given for removing the cotton filter from the wash during storage was to avoid cotton fever.

While the method for storing hydro washes varied across participants, the perspective that a wash has value was consistent across participants. Sharing a wash because of its value was the second most

frequently referenced topic among focus group participants and the most referenced topic with FLS when discussing the sharing or reuse of washes. A FLS reflects on the sharing or reuse of washes,

“They share their washes; they will give someone one [wash] for a place to stay for the night.”

“The cookers are quite flimsy, especially if they have already been folded, unfolded and reheated again. Clients have concerns about losing their wash...”

“People exchange washes for anything, [...] people are trying to get as much of the drugs.”

Members of the focus groups discussed the value of washes, but their comments also reflected instances in which they would be unwilling to give a wash to someone else or use a wash themselves.

“I won’t give someone dirty gear, but I will give them my wash. I won’t give it to someone if I double dip [put my needle into the cooker more than once].”

“I’ll take you down the street to get you drugs; I’ll tell them I haven’t been feeling well for the past three days, and you shouldn’t use my wash.”

“People think it’s because you’re greedy, but you just don’t want to put them at risk.”

These comments indicate those focus group participants have an awareness of the harms associated with taking a wash from someone else and giving a wash to someone else. While participants discussed cooking as part of their preparation method, there were only two instances where they specifically mentioned cooking their hydros wash (as opposed to their initial hydros preparation or hit). Conversely, others indicated they cook the initial hydros preparation, but not the wash. Regardless of when participants said they would cook, it is an inconsistent practice,

“I don’t cook the first pull, but I’ll cook the wash. I don’t sometimes because I don’t have a lighter, or I don’t have time.”

Throughout the discussion, focus group participants seemed to delineate between the sharing of IDPE and the sharing of a wash (in a cooker). While it was clear that some participants were aware of the harms associated with sharing or reusing a wash, focus groups members referenced the harms associated with sharing other IDPE twice as many times as the harms associated with sharing a cooker with a hydros wash. It was unclear if all participants perceived sharing a hydros wash as being equivalent to sharing other IDPE; however, in at least one case, sharing a wash was referred to as IDPE (or “gear”).

“I don’t feel good about giving my used gear [used cooker]. I don’t feel comfortable giving to someone knowing there is a risk there.”

“I cook my wash and the second pull; I know there are a lot of people who will say they will cook your wash, but they don’t.”

Barriers to Cooking Hydros

FLS and focus group participants identified fourteen barriers to cooking hydros. There were four leading barriers to cooking hydros that were consistent across PWID and the three groups of FLS agencies (in

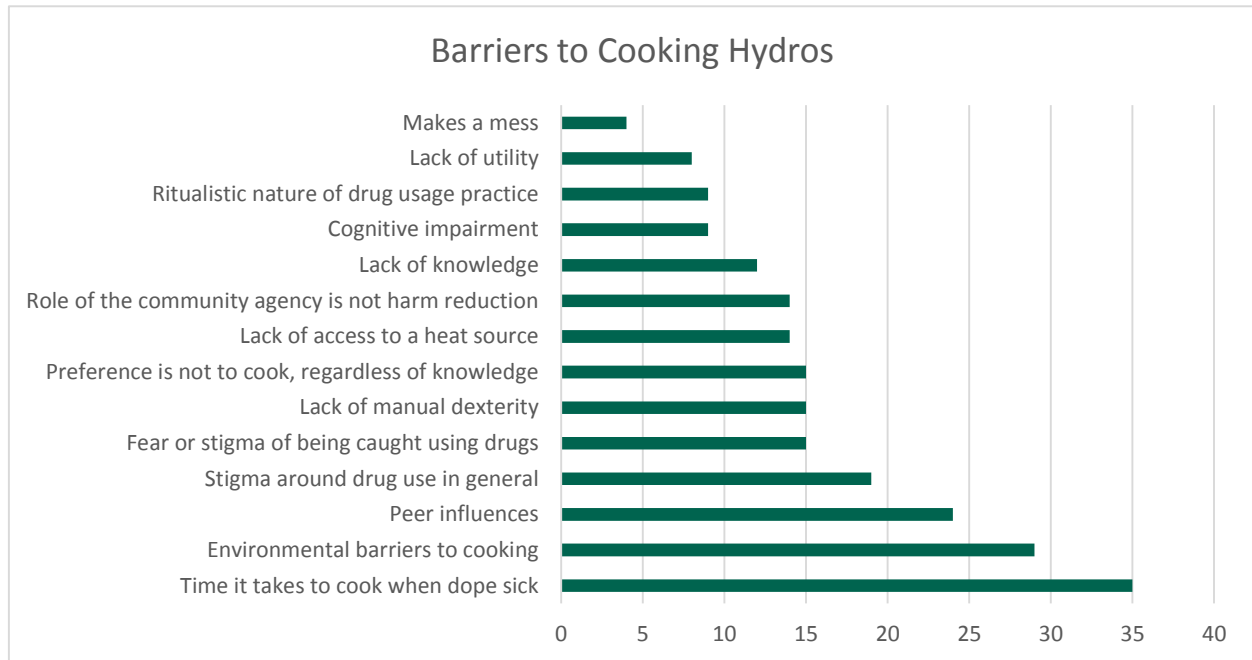


Figure 3. Number of references to the barriers to cooking hydros across all participant groups.

order of frequency); the time required to cook hydros when feeling dope sick, environmental barriers to cooking, peer influences, and the stigma around drug use in general. The fifth most commonly identified barriers to cooking were, the preference not to cook regardless of knowledge, a lack of manual dexterity, and the lack of a heat source.

From the perspective of PWID, the time it takes to cook when dope sick was the principal barrier to cooking. Many focus group participants indicated that ten additional seconds needed to cook when preparing a hit is a significant obstacle,

“If you are sick, you’re gonna hit that shit. I’m not going to bother cooking it.”

In many cases, PWID described the moments feeling dope sick before a hit as a time to weigh various factors. Cooking is not the only step skipped in the hydros preparation process when time is a concern; focus group participants referred to the “shake and bake” method (described above).

“I cook it more for the quality of the hit. If it were the other way around [the hit was better without cooking], I probably wouldn’t cook.”

The second most identified barrier to cooking hydros by PWID was peer influences. Specifically, focus group participants indicated they listen to their peers, and this is particularly true for people who are new to injecting hydros,

“New users will do what they see others doing.”

Participants indicated the only time they would be less inclined to trust other PWID is if the person appears to be sick or is constantly unwell. The third most common hindrance to cooking by PWID was the preference not to cook, even when there is an awareness of the harms of not cooking hydros. In a few instances, during the focus groups, participants specifically mentioned knowing it was safer to cook hydros, but they enjoy not cooking. One participant indicated they were willing to risk infection to maintain this preference,

“I just enjoy it [not cooking] psychologically, I’m willing to take the risk.”

FLS from all agency types identified environmental barriers to cooking with the highest frequency, followed by the time it takes to cook when dope sick and the stigma associated with drug use. In some instances, environmental barriers were specific to having to prepare hydros outside or in a public place. FLS indicated that concealing drug use is a serious concern if a PWID needs to inject in a public place. Cooking can make drug practice more difficult to conceal due to the black residue left on the bottom of the cooker after cooking with a lighter. During the focus groups, some participants noted the black residue could be avoided by ensuring the lighter and cooker to do not make contact; however, this process requires a longer cooking time.

Also, if a client is using outdoors, it may be difficult for a low-quality lighter to hold a flame long enough to cook. Unstable housing is another environmental factor that can make it difficult to cook regularly. While not coded as a separate theme, FLS referenced safety concerns in 17% of environmental concern references. Safety concerns were not associated with any other barrier. The FLS also identified the time it takes to cook when feeling dope sick as a significant barrier to cooking hydros. One FLS compared the seconds taken to cook hydros before a hit as “a lifetime”.

“Those 6-8 seconds is a lifetime, especially when you are dope sick.”

Mental health agencies highlighted cognitive impairment as the third most referenced barrier to cooking.

Beliefs about Cooking Hydros

The main belief about cooking hydros identified by FLS and PWID was the concern that cooking would weaken the impact of the drug. This belief appeared to have an impact on cooking behaviours and could be considered a barrier to cooking hydros.

“There is a perception that cooking hydros will wreck the drug here in London, ... You don’t hear it as much today, but back in 2017.”

Some focus group participants believed cooking increases the viscosity of the drug making it more difficult to draw up into the syringe; however, this belief did not appear to discourage cooking behaviours. In the focus groups, a few participants held an alternative view about cooking. Some indicated they believe cooking hydros improved the quality of the high.

While not specifically related to cooking, individuals in the focus groups indicated adding Vitamin C to the hydro mixture increases the quality of the high of the first hit or the hit of subsequent washes.

Facilitators to Cooking Hydros

Overall, the greatest facilitator to cooking hydros was the trust clients have in staff at community agencies (31%), followed by the need for additional injection drug preparation equipment (IDPE) (25%), and using the Temporary Overdose Prevention Site (TOPS) (20%). ([Please see the Appendix for an additional description of these references.](#))

While PWID indicated that additional IDPE and being at TOPS assist them in cooking their hydros, the risk for infection or reinfection was the primary facilitator for cooking. Many focus group participants indicated they were ill or knew someone who was ill as a direct result of not cooking hydros.

“I do it [cook] out of experience, I’ve been in the hospital four times with blood infections.”

“It wasn’t until I got a blood infection and [started going to] TOPS, that I started cooking.”

A number of the focus group participants affirmed that when community agencies and other peers began talking about cooking hydros more frequently, which has made it easier to remember to cook.

FLS also commonly reported that additional IDPE and being at TOPS as facilitators; however, the trust between staff and client was seen as the leading facilitator to cooking by FLS. Even though trust in staff at community agencies was not a leading facilitator to cooking by focus group participants, it does ring true for some,

“... [It’s fine] when you hear it from another [PWID], but it’s more believable if you hear it from a nurse or outreach worker.”

Only FLS at mental health agencies placed the need for additional injection drug equipment over the trust in staff. Both mental health and agencies that work with street-involved people believe incorporating research evidence into the message would facilitate cooking; whereas, the included agencies that provide healthcare or outreach services perceived using at TOPS as being the greatest facilitator to cooking.

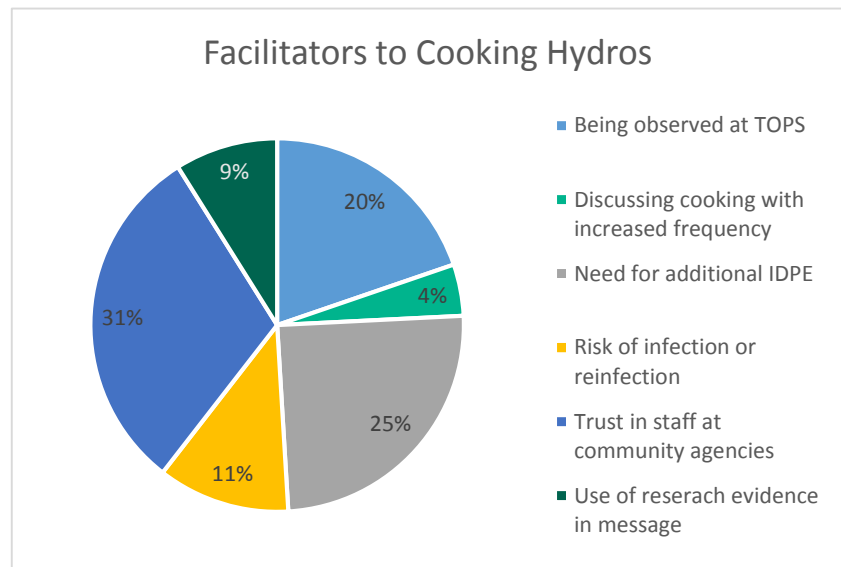


Figure 4. References to facilitators to cooking hydros across all participant groups by percent.

FLS indicated if PWID have an unstable housing situation, but can make it to TOPS, this can significantly mitigate many environmental barriers.

Adjusting Hydros Preparation Methods

FLS from all organization types indicated they would provide suggestions of how to reduce harm with their clients that use hydros; however, organizations that provide healthcare and outreach services referred to guiding their clients with the highest frequency. The majority of these references described opportunities to support clients with their hydros preparation method at the Temporary Overdose Prevention Site (TOPS). When it comes to cooking, these organizations consistently provide this as a suggestion to their clients. Staff indicated clients are receptive to the suggestion of cooking their hydros in most cases; however, this is dependant on the specific client and how they are feeling,

“It depends on the person, the day and what’s going on for them, how responsive they’ll be [to the suggestion of cooking]. [...] When you do have the conversation, it’s a learning opportunity. It might not be right before the hit, but it might be a conversation that we have after the hit.”

Only FLS from a couple of organizations referred to guiding their clients about cooking their hydros a few times.

Effective Methods for Knowledge Translation

Who Should Give and Receive the Message?

When asked who should provide the message to “cook your wash” to PWID, participants referenced one-to-one with an Outreach Worker, with the highest frequency. While organizations that provide healthcare and outreach services supported this message, this was also reinforced by the other organization types and most importantly focus group participants,

“There is a bunch of front-line staff, as long as you guys know, that’s your best bet. They come in contact with people who use every day.”

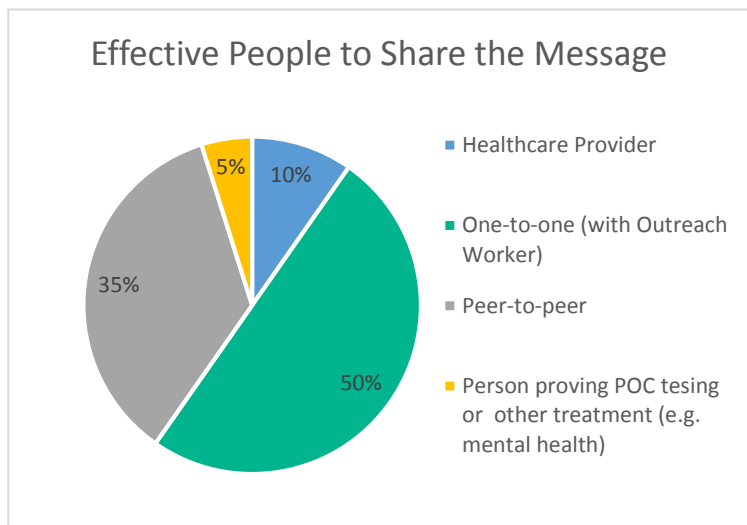


Figure 5. References to effective people to share the message to across all participant groups by percent.

In this case, the participant is referring to FLS who have one-to-one interactions with PWID. Additionally, a couple of members of the focus group indicated the staff at London Cares who operate the Homeless Response Services Mobile Unit would be a good source to provide the message.

Providing the message through peers was the second most referenced group who were believed to be effective in providing this message. When referenced, peers simply denoted other PWID. From the perspective of FLS, word of mouth among PWID is one of the fastest ways to share a message.

“... in the injection community information moves so fast.”

Focus group participants indicated that peers share messages by word of mouth, but also by performing this harm reduction behaviour in front of other people who inject hydros,

“[We,] the people who care enough to come to the focus group need to tell five people, and then they will tell their friends.”

“If someone is surrounded by people who cook their dope, then they will start [cooking].”

There were a couple of comments from FLS that discuss sharing the message with clients through a more formal peer support program. A formal peer program would include specific peers who would provide the message to other members in their peer group.

“They are going to listen to someone who's been there, rather than someone who has an ‘education’”

“Peer support programs are amazing, and we should have more for sure. There is a guy at [...] who is a user, and he is an advocate for harm reduction.”

However, other FLS were more cautious with regards to peer-to-peer knowledge, indicating it is important to select the most appropriate peer for the position. It is important the peer is trusted among their peers but is also skilled at delivering the message. Participants also indicated healthcare providers and the individuals who provide Point of Care (POC) testing and other services such as mental health or wound care treatment might also be useful in disseminating this message.

In addition to peers and outreach workers, all participant groups recommended that all staff at community agencies who work with PWID should be made aware of the importance of cooking hydros, to ensure the message is consistent within and between agencies.

What Words Should the Message Include?

In terms of specific words to include in the message, PWID used the word “cook” twice as often as “heat” when describing cooking a hydros wash. The focus group participants almost exclusively used the word “cook” when discussing this practice. The word “boil” was only used a few times across all the FLS interviews. The word “gear” was the most common word to describe IDPE in general; however, focus group participants often used the word “rig” when discussing preparing a needle and syringe for injection. FLS staff highlighted the importance of collaborating with PWID to ensure the most appropriate language is used to deliver the message.

Where to Share the Message?

The Temporary Overdose Prevention Site (TOPS), other community agencies and a place where a group of PWID could meet were identified as the most effective places to disseminate the message. FLS and participants indicated TOPS as being the best place to receive the message. From the perspective of the focus group participants, TOPS is a good place to provide the message because PWID are already receiving the message there, and it is a place where they go for additional support. TOPS is also a useful place to relay this message because it eliminates many of the identified barriers to cooking such as the fear of being caught doing drugs.

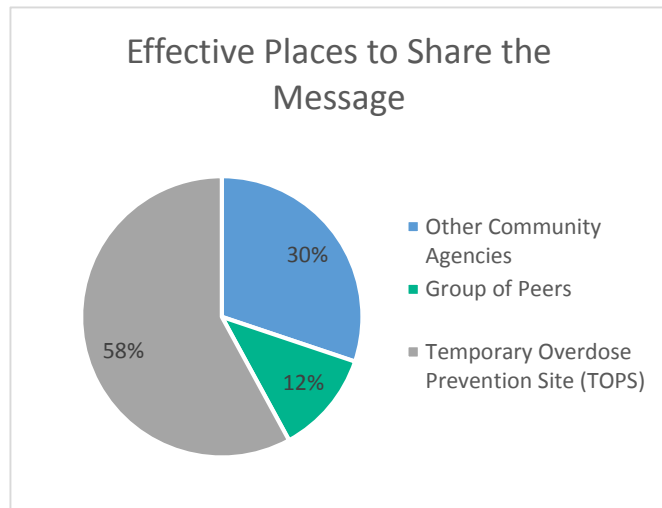


Figure 6. References to effective places to share the message across all participant group by percent.

“TOPS will help people cook because you don’t have to worry about getting caught [using] in a washroom.”

It may also minimize the environmental barriers that make it difficult to cook,

“You do feel safer [when using the site].”

the need for a heat source,

“They provide the lighters at TOPS when you ask for one.”

and may even allow PWID to overcome preferences and re-evaluate if cooking is worth the time during dope sickness.

“TOPS helps me cook it every time. It makes me feel worthy of injecting safely. I have more self-esteem because the people there give a shit about me.”

“People need to feel better about themselves; we need a reason to be safe. TOPS makes us feel safe.”

All focus groups members recommended any community agency that supports PWID is a good place to share this message. Participants suggested bathrooms within each agency as a good place to provide the message. Additionally, pharmacies and clinics that provide treatment for PWID (e.g. methadone clinics) may also be useful locations.

How to Share this Message?

Both FLS and focus group participants provided a variety of recommendations about how best to share the message with PWID. Almost half (47%) of the recommended items were a type of heat source, with a lighter as the most popular choice. Further, a lighter was the only heat source specifically mentioned by focus group participants when describing their preparation methods. FLS also indicated that many of their clients already have lighters.

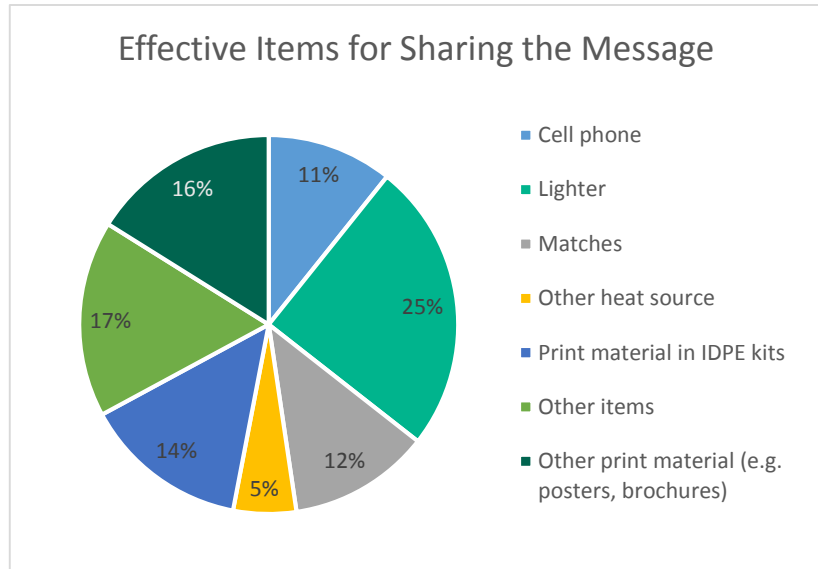


Figure 7. References for effective items for sharing the message across all participant groups by percent.

“Clients typically use lighters to cook, most of them are smokers, so they will have a lighter on them.”

While most focus group participants typically have lighters, they are easily lost or stolen. Also, this did not convince some participants that a lighter was enough to get people to cook.

“Lighters are probably not going to help people cook.”

“Adding a heat source, but not necessarily [a lighter] because a lot of people have lighters.”

A focus group participant highlighted that providing lighters as IDPE may become cost prohibitive,

“Funding-wise, people will steal. It [providing lighters] could get very expensive.”

The cost associated with providing lighters was further supported by FLS who emphasized the importance of being able to offer any item needed for injection drug preparation continually. Providing IDPE and then discontinuing an item without a suitable replacement will make it difficult for clients to adopt an adjustment like cooking into their injection drug preparation practices.

“Whatever it is, it has to be continuous. We are not going to set-up a client on a new way of doing things and then say we don’t have it anymore.”

Alternatively, matches were also suggested as an option for a heat source. FLS indicated matches as more sustainable financially and would be less likely to be traded or stolen. FLS also provided examples of matches being offered previously within the Middlesex-London community and in other jurisdictions. However, it was highlighted by focus group participants that matches would be less convenient than a lighter for cooking.

FLS and focus group participants both emphasized the importance of accompanying the message with a visual or image. All participant groups also echoed the need for the message to be predominately visual. Whether or not the image should be on a poster or some other print material was mixed. Some respondents indicated it might be difficult for a poster with this message to stand out if it is surrounded by a host of other messages. Ensuring the message stands out could be particularly problematic at TOPS given the amount of signage on site.

What May Not Work

FLS did not indicate any specific words that would be problematic to include in the message,

“In terms of language, nothing is really taboo.”

But they emphasized the need for the message to be short, in plain language and to avoid using any superfluous words. Additionally, FLS highlighted that the wording of the message should be suggestive rather than directive and not include words like “don’t” or “must.” Further, FLS indicated the message should not be judgemental in any way, indicating the individual was doing something wrong by not cooking their hydros.

“The message needs to be ... something that doesn’t mean that you [the client] messed-up in some way. A message that is non-judgemental truly.”

Discussion

There are three key steps to preparing hydros that appear to be consistent among users; crushing, dissolving in water (or another solution), and cooking. Other items such as a lighter are often repurposed as a crusher; however, many PWID are using new IDPE in innovative ways to crush their hydros. The order of the first two steps is often interchangeable. When dissolved, PWID will typically use a lighter to cook. Many PWID report cooking but do so inconsistently outside of TOPS where there are additional barriers to cooking. Lastly, if the ‘shake and bake’ method is used to prepare hydros, the preparation is not usually cooked.

PWID identified the time it takes to cook when dope sick and peer influences as the most substantial barriers to cooking. Unlike other barriers, merely providing a heat source or the risk of infection is less likely to diminish these hindrances to cooking. Similarly, if peers tell PWID that cooking will negatively impact the high, facilitators like research evidence describing the benefits of cooking may have little impact. However, the ability to use at TOPS along with the environment at TOPS may be enough to reduce these barriers. Additionally, being at TOPS can also eliminate environmental barriers and the risk of being caught using drugs in a public place. While ensuring clients can use TOPS appears to be an effective way for PWID to cook consistently, it is only useful for those who can get to TOPS during its hours of operation. Also, some PWID are not comfortable using TOPS and based on the findings of this study, this is more problematic for women than for men.

The findings of this report support that PWID are aware of the harms associated with sharing or reusing IDPE and will try to minimize harm when doing so. Despite knowledge of these harms, some PWID do share or reuse IDPE; however, for some, the risk of becoming ill is greater. Sharing or reusing hydro

washes were discussed with much higher frequency than sharing or reusing IDPE. PWID spoke at length about how they store hydro washes; this is likely because of the value of the wash. It appears that PWID do not perceive sharing or reusing a cooker with a wash to be as harmful as sharing other IDPE; as long as new equipment is used for the initial preparation. This belief could be reinforcing the lack of perceived utility to cooking.

Aside from the perceived lack of utility to cooking, the only belief identified that could inhibit cooking was based on the fact that some PWID believe that cooking hydros may ruin the quality of the high. Since peers communicate this belief, the influence that peers who have negative beliefs about cooking is a barrier to cooking. This belief did not appear to be consistently believed by many participants, but could be problematic if heard by newer, more impressionable users.

PWID identified the risk of infection or reinfection as the greatest facilitator to cooking. While the use of research evidence in the message was only mentioned a few times by PWID, it may be beneficial if a message about the risk of becoming ill was well supported by research evidence. The message should be accompanied by an impactful visual or image to improve the uptake of the message. In addition to keeping the message as short as possible, certain words were identified to increase the acceptability of the message further. PWID may need to be further consulted regarding the specific terms to include in the message. Ideally, outreach workers and other front-line staff should provide this message consistently. It may be valuable to have peers support the delivery of this message, but more information and processes may be needed to ensure the successful dissemination of this message. Regardless of whether peers will play a formal role in delivering this message, it is important that people who inject hydros are further consulted on the final message.

All participant groups identified the need for additional IDPE, specifically a heat source and a sterile crusher. PWID have been addressing the need for a sterile crusher by using existing IDPE in innovative ways. The repurposing of existing IDPE increases the likelihood that these items will be consistently used. Other items (not included in the IDPE) that are used as crushers, can potentially transfer bacteria into the hydro solution. From the perspective of PWID, a lighter was the most frequently identified heat source; however, both participant groups indicated the presence of lighters as relatively common in the injection drug community. Due to the presence of other barriers, some people who inject hydros were not convinced that providing their peers with a lighter would lead to more cooking. Lastly, FLS staff stressed the importance of the continued and consistent supply of any offered heat source.

Limitations

The decision not to audio-record the FLS interviews and focus groups with PWID limited the use of the direct quotations. Key stakeholders informed this decision during the development of the study. They indicated that PWID would not feel comfortable with this practice. To address this issue, interview and focus group notes were taken on a laptop and read back to participants for validation.

Many of the PWID in the focus groups were selected by FLS at the organizations hosting the focus group. It is possible the views of these participants reflect the opinions of a subset of the PWID community that

use these services. The views of PWID who do not use these community services may be underrepresented in this analysis.

Summative inductive content analysis was the most appropriate methodology for this project because it enables the counting and comparison of coded material to identify the most effective way to communicate with PWID; however, this method has the potential to miss under-referenced themes within the focus group or interview. This limitation is particularly problematic when topics discussed are of sensitive nature. However, since FLS were discussing their day to day work and PWID were referencing a frequent practice (injection drug use), this is not likely a limitation in this case.

Appendix

Project Team

Name	Team Role	Position	Organization
Marilyn Atkin	Data collection support	Program Lead, Community Outreach and Harm Reduction	Middlesex-London Health Unit (MLHU)
Christine Brignall	Data collection support, Evaluation consultation, Analyst, Report author	Program Evaluator	
Sheila Densham	Project lead	Health Promoter	
Shaya Dhinsa	Project sponsor	Manager, Sexual Health	
Elyse Labute	Analyst, Report editor	Program Evaluator	
Meera Shah	Data collection support	Research Assistant	
Dr. Michael Silverman	Subject matter expert	Infectious Diseases Clinic Physician	St. Joseph's Health Care London
Ryan Wong	Data collection support	Research Assistant	
Sameena Vadivelu	Data collection support, Evaluation consultation	Program Evaluator	MLHU

Code Descriptions

This section includes a brief description of the codes used to analyze the data.

Code	Description
Need for additional IDPE	The need for additional equipment to safely inject that is not currently included in the safe injection kits, the needle exchange program or any other organization that provide free IDPE.
Being at TOPS	Includes items that describe the comfort and safety clients feel when injecting at TOPS; positive changes in cooking beliefs or behaviours as a result of being at TOPS.
Using research evidence in the message	Includes items that describe the positive changes in cooking beliefs or behaviours when the benefits of cooking are supported by research evidence. This also includes the presentation of figures or images depicting the results of a research study.
The risk of infection or reinfection	Includes items that describe the positive changes in cooking beliefs or behaviours due to the increased risk of contracting an infection or becoming ill as a result of not cooking.
Discussing cooking with increased frequency	Includes items that describe a positive change in cooking beliefs or behaviours as a result of the topic of cooking being discussed more often (typically by FLS). Also, the importance PWID place on messages that are heard with increased frequency.

References

- Ball, L., Venner, C., Tirona, R., Arts, E., Gupta, K., Wiener, J., . . . Silverman, M. (2018). *Heating Injection Drug Preparation Equipment Used for Opioid Injection May Reduce HIV Transmission Associated with Sharing Equipment*. Manuscript. St. Joseph's Health Care London.
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qual Health Res*, *15*(9), 1277-1288. doi:10.1177/1049732305276687
- Kasper, K., Hallam, B., Coleman, C. E., Manoharan, I., Stranges, S., McCormick, J. K., & Silverman, M. S. (2018, June 19th, 2018). *Staphylococcus aureus poses a significant health concern for IV drug user populations due to the increased bacterial survival in controlled-release opioid Hydromorphcontin*. Paper presented at the Canadian Society of Microbiologists, Winnipeg, Manitoba.
- Lake, S., & Kennedy, M. C. (2016). Health outcomes associated with illicit prescription opioid injection: A systematic review. *J Addict Dis*, *35*(2), 73-91. doi:10.1080/10550887.2015.1127712
- McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia medica*, *22*(3), 276-282. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/23092060>
- Mitra, S., Rachlis, B., Scheim, A., Bardwell, G., Rourke, S. B., & Kerr, T. (2017). Acceptability and design preferences of supervised injection services among people who inject drugs in a mid-sized Canadian City. *Harm Reduction Journal*, *14* (1) (no pagination)(46). doi:<http://dx.doi.org/10.1186/s12954-017-0174-x>
- Richmond, R. (2017a, October 27th, 2017). London doctors? simple strategy may stem a deadly toll. *The London Free Press*. Retrieved from <https://lfpres.com/2017/10/27/london-doctors-simple-strategy-may-stem-a-deadly-toll/wcm/3782effd-fda6-7c58-afab-be14bb9833ce>
- Richmond, R. (2017b, October 27th, 2018). London researchers may have pinpointed why rates of HIV, other diseases rising among drug users. *The London Free Press*.
- Rodger, L., Glockler-Lauf, S. D., Shojaei, E., Sherazi, A., Hallam, B., Koivu, S., . . . Silverman, M. (2018). Clinical Characteristics and Factors Associated With Mortality in First-Episode Infective Endocarditis Among Persons Who Inject Drugs. *JAMA Network Open*, *1*(7), e185220-e185220. doi:10.1001/jamanetworkopen.2018.5220
- Roy, E., Arruda, N., & Bourgois, P. (2011). The growing popularity of prescription opioid injection in downtown Montreal: new challenges for harm reduction. *Subst Use Misuse*, *46*(9), 1142-1150. doi:10.3109/10826084.2011.552932
- Shah, S. M., Shapshak, P., Rivers, J. E., Stewart, R. V., Weatherby, N. L., Xin, K. Q., . . . McCoy, C. B. (1996). Detection of HIV-1 DNA in needle/syringes, paraphernalia, and washes from shooting galleries in Miami: a preliminary laboratory report. *J Acquir Immune Defic Syndr Hum Retrovirol*, *11*(3), 301-306.
- Sher, J. (2018, May 3rd, 2018). It's infections, not ODs, that most threaten London opioid users. *The London Free Press*. Retrieved from <https://lfpres.com/news/local-news/deadly-infections-growing-threat-to-london-opioid-users>
- Slipczuk, L., Codolosa, J. N., Davila, C. D., Romero-Corral, A., Yun, J., Pressman, G. S., & Figueredo, V. M. (2013). Infective Endocarditis Epidemiology Over Five Decades: A Systematic Review. *PLoS ONE [Electronic Resource]*, *8*(12), e82665. doi:10.1371/journal.pone.0082665
- Weir, M. A., Slater, J., Jandoc, R., Koivu, S., Garg, A. X., & Silverman, M. (2019). The risk of infective endocarditis among people who inject drugs: a retrospective, population-based time series analysis. *CMAJ Canadian Medical Association Journal*, *191*(4), E93-E99. doi:10.1503/cmaj.180694