Harm Reduction Sisters:

Evaluating Smoking Supplies Among Syringe Service Program Participants in Northern Minnesota

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Executive Summary

With funding from the National Association of County and City Health Officials (NACCHO), through a grant from the Centers for Disease Control and Prevention (CDC, #5 NU38OT000306-03-00), we used a community driven research approach to evaluate the provision of safe smoking supplies at Harm Reduction Sisters, a syringe service program that serves Northern Minnesota.

As part of this evaluation, we examined administrative records on the distribution of supplies recorded in NEO 360, conducted a cross-sectional survey with active participants, and designed an online form to solicit ongoing feedback from the community.

Harm Reduction Sisters first ordered glassware for smoking drugs in April 2020 and since then have continued to provide this tool to participants whenever they are able obtain these materials which includes stem, bubble, and hammer pipes.

In 2023 Harm Reduction Sisters transitioned to NEO 360 to collect records on distribution of supplies. Analysis of those records shows that following Minnesota's decriminalization of drug paraphernalia in August 2023, distribution of smoking supplies has continually outpaced syringes. Prior to this, syringes had always outpaced distribution of syringes. Between February 1, 2023, and May 31, 2024, there were more than 3,000 participant encounters for distribution of smoking supplies.

Our survey was administered throughout April 2024 and was completed with 114 participants who had received services from Harm Reduction Sisters in the past 30 days.

- 40% of participants started coming to Harm Reduction Sisters for smoking supplies.
- Harm Reduction Sisters participants smoke methamphetamine and fentanyl/heroin more than inject.
- Overall participants found smoking more convenient and suggested that availability of supplies facilitated this behaviour.
- There is preference for bubble pipes, but they often break, and that people are mostly coming back to get pipes a second time because they broke or because they want to provide one for another person.
- Nearly 40% of Harm Reduction Sisters participants are American Indian and this population is more likely inject fentanyl/heroin.
- 60% of participants were aware of the drug paraphernalia decriminalization law and 94% had not had drugs or paraphernalia been taken by police in past three months.

While our evaluation was not designed to assess causality, it seems that smoking patterns are driven in part by the availability of supplies. Moving forward Harm Reduction Sisters will continue to seek funding to provide smoking and other harm reduction supplies, look for new sources of these materials to assure quality, and improve our administrative data collection process.

Introduction

Syringe service programs play a critical role in reducing blood-borne infection transmission by distributing sterile syringes and promoting safer injection practices among persons who use drugs.[1] Despite ongoing policy conflicts resulting from the ongoing criminalization of illicit drug use, these programs have operated in the United States (US) for more than 30 years and there is a considerable body of research demonstrating effectiveness in reducing disease transmission with corresponding cost-savings.[2,3]

Importantly, syringe service programs developed out of a harm reduction philosophy that focuses on meeting people where they are, even when they are not interested, ready, or able to stop a particular behaviour, such as illicit drug use, and provide them with concepts, strategies, and tools that can reduce adverse health consequences.[4] Within policies that criminalize drug use some harm reduction strategies, like syringe distribution, can sometimes originate from illegal activities intended to protect communities then, once the value of these activities is recognized, they become supported by public health institutions. For example, syringe service programs championed the public distribution of naloxone, the opioid overdose antidote, long before prescribers provided standing orders for states to allow distribution.[5,6]

When harm reduction principles are actualized it can result in trust and rapport with deeply marginalized populations that can be leveraged to provide additional services.[7–9] For example, during the COVID-19 pandemic many syringe service programs pivoted to provide personal protective equipment and vaccinations to persons who use drugs.[10] Moreover, given the ongoing overdose crisis in North America that is driven by illicitly manufactured fentanyl, a synthetic opioid, programs have implemented drug checking services and low-barrier referrals to evidence-based medications for opioid use disorder.[11,12] Given health complications from injection drug use, and preliminary evidence that smoking drugs could provide health benefits over injection, some countries have encouraged people to switch from injection to other modes of administration[13,14] and given their positionality with persons who use drugs, the distribution of sterile smoking supplies is a recent harm reduction strategy being pursued by many syringe service programs.

Research into the distribution of smoking supplies to persons who use drugs has primarily been conducted in Canada and suggests increased use of smoking over injecting when supplies are provided.[15–17] Having access to sterile smoking supplies has also been associated with reductions in sharing equipment with others and reductions in smoking related health issues (cuts, burns, sores).[18] As fentanyl proliferated in the US some harm reduction programs began providing sterile smoking supplies, including multiple types of glass pipes and aluminium foil[19–21]. One recent study from San Francisco found that people who only smoked fentanyl had lower risk of overdose and skin infections than people who injected fentanyl.[22]

Research into the provision of smoking supplies remains limited in the US as this practice was met with opposing legislation from Congress that banned use of federal money for these supplies. However, in 2023 Minnesota became the first state to legalize the possession and distribution of all paraphernalia, as well as the possession of residual amounts of drugs in that paraphernalia, paving the way for syringe service programs to provide this equipment.[23,24] In this report we detail outcomes from a mixed methods

evaluation on the distribution and utilization of smoking supplies from Harm Reduction Sisters, a syringe service program with a rural delivery area that includes multiple tribal reservations. The evaluation was funded by National Association of County and City Health Officials (NACCHO) through a grant from the Centers for Disease Control and Prevention (CDC, #5 NU38OT000306-03-00) and used a community driven research approach, emphasizing a full collaborative relationship between researchers, people with lived/living experience, and grassroots organizations as active members of the evaluation team.[25] Staff and volunteers with Harm Reduction Sisters worked with external evaluation partners to design a brief quality improvement survey for participants that focused on the use of smoking supplies. This survey was administered by program staff and along with administrative data collected by the program we sought to answer three questions:

1. Does the provision of smoking supplies expand the reach of the syringe service program to new participants?
2. Is the provision of smoking supplies associated with participant drug use behaviors?
3. How can the provision of smoking supplies be optimized for rural and tribal settings?

Evaluation Setting

Harm Reduction Sisters is a community based non-profit syringe service and naloxone distribution program based out of St. Louis County, Minnesota that began providing mobile, peer-distribution, and mail-delivery harm reduction services in May 2019 throughout northern Minnesota including the Iron Range and along the North Shore to the border of Canada (see Figure x for service delivery area). St. Louis County has a population of approximately 200,000 though a significant portion is characterized by unincorporated rural areas with lower population density. Duluth is the largest city in the county and is a port town on the shore of Lake Superior, bordering Wisconsin, making it a transportation hub for shipping that extends through Canada and out to the Atlantic Ocean. The National Drug Intelligence Center has profiled Duluth as a hub for drug activity given its geographic location to the Interstate 35 (running to Laredo, Texas, on the U.S.-Mexico border), bordering Canada to north, and as the nation's largest inland harbor which handles a high volume of foreign shipping passing through the port.[26,27]

Sue Purchase is the founder and Executive Director of Harm Reduction Sisters and has been conducting syringe service programming for more than 30 years, helping to define what harm reduction practices look like globally.[1,28,29] The mission of Harm Reduction Sisters is to provide a feminist response, utilizing innovative harm reduction principles and practices to address the gaps that exist for people who use drugs and experience trauma. It is an actively inclusive organization, engaging peer outreach and peer distributors to reach new participants, also known as secondary exchange, which is necessary for the social and geographic landscape of St. Louis County and surrounding areas. Peer distribution has been a particularly effective model for reaching Indigenous Nations and rural communities with culturally competent community services. The peer distribution model also helps our organization build rapport with participants and create a network of care in the community.

Harm Reduction Sisters provides multiple supplies including sterile drug use equipment, naloxone, and other materials that address drug-related harms. The organization also provides numerous services including HIV, Syphilis, and Hepatitis testing,

along with non-medical HIV case management, and linkages to treatment and medications for substance use disorders. Harm reduction services are provided to 12 counties, all classified as rural, including Pine, St. Louis, Lake, Carlton, Pennington, Itasca, Koochiching, Beltrami, Mille Lacs, Crow Wing, Cook, and Cass. We provide services to many participants in the Duluth-area, Cloquet, Virginia, Thief River Falls, Bemidji, Ely, and across the border in Superior, Wisconsin. Harm Reduction Sisters moved into an office in the Damiano Center (located in Duluth) on July 1, 2022, which provides space for storage, collaboration, and a drop in site for testing and supplies for community members five days per week. In January 2023, Harm Reduction Sisters expanded into the Lake Superior Community Health Center which provided a spoke site for 2 hours each Friday.

Harm Reduction Sisters ordered and distributed glassware for the first time in April 2020. The initial funding for these supplies came from Comer and NEO Philanthropy to purchase glass tubes through the NASEN Buyers Club. This was during the initial COVID-19 pandemic lockdown period and Harm Reduction Sisters was able to offer this glassware along with other supplies and the initial demand for smoking supplies began. These supplies were included as a tool for engagement and had to be rationed as the organization immediately struggled to maintain demand. Hammer pipes arrived on the scene in 2023 and Harm Reduction Sisters purchased these as well to assess interest among participants. Due to lack of funding, Harm Reduction Sisters was not able to continue providing these supplies consistently and partnered with local glass blowers to meet demand on some occasions. Harm Reduction Sisters currently provides stem, hammer, and bubble glassware, along with foil, and these are not generally packaged with other materials but instead provided individually wrapped in foam.

Data Sources and Methods

We use two sources of data for the evaluation: (1) administrative data and (2) survey data (N=114). Administrative data come from NEO 360, a secure web-based application, developed in the UK, and used by harm reduction health service providers across the globe for service management and reporting. Harm Reduction Sisters licenses and pays for NEO 360 on an annual basis to record information about the people who access, participate in, and/or are reached through the harm reduction programming to help monitor and analyze trends, as well as provide a tool for efficient and standardized data collection. Harm Reduction Sisters can log into an online portal to see reports generated using their own data which we use in the evaluation to look at the provision of smoking supplies. However, this data system only came online in early 2023.

Survey data come from a cross-sectional instrument administered to Harm Reduction Sisters participants. The paper-based survey took less than 15 minutes to complete and was administered by staff and volunteers on Mondays and Wednesdays in April 2024, between 11am and 1pm, to the first 25 participants who came on-site to obtain harm reduction resources. Eligibility was limited to participants who had a unique code in the NEO 360 system and had received Harm Reduction Sisters services in the past 30 days. Staff confirmed prior program engagement and provided a $20 grocery gift card.

Results

We first provide descriptive statistics on each of the two data sources—administrative data from NEO 360 and cross-section survey data—and then proceed to use these data sources to address each of the three evaluation questions.

Participant characteristics

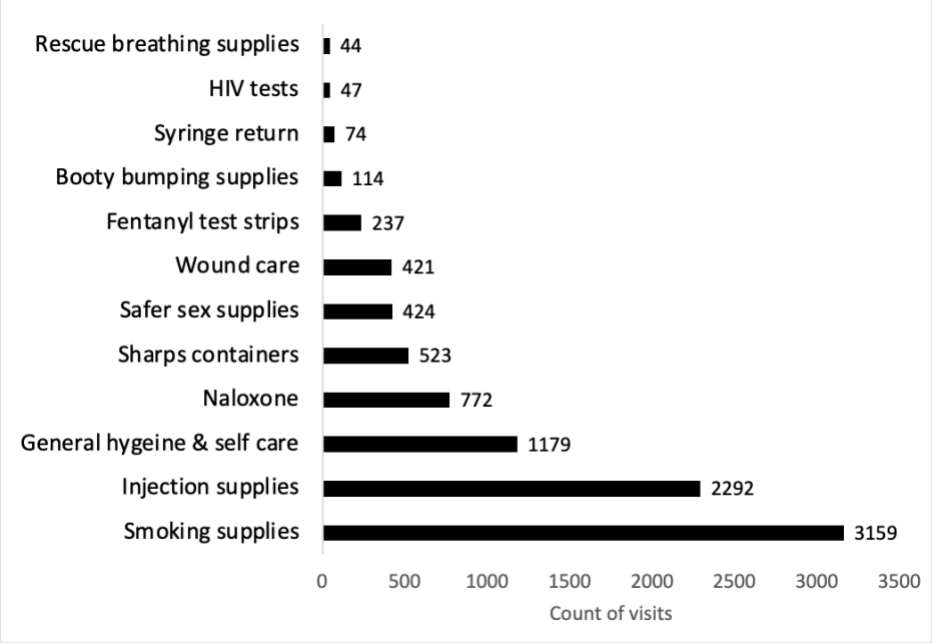
***Administrative data*.** Stigma against persons who use drugs means that part of harm reduction is not creating administrative barriers to services, which includes cumbersome or unnecessary data collection. Thus, administrative data on participants is sometimes missing information on social demographics, which is reflected in our analysis of the NEO 360 data. The average age among all Harm Reduction Sisters participants was 40.2 years (Standard Deviation [SD] = 11.4) (Table 1). About half (52.2%, n=509) indicated "Male" gender, 45.8% "Female," and 1.9% another gender. Many participants preferred not to disclose their race/ethnicity (43.2%). However, among those who did (56.8%, n=554), about half (49.6%) described their race/ethnicity as White, followed by 33.2% who identified as American Indian or Alaska Native (AIAN). Among participants for whom housing status data were available (39.2%, n=382) most were unhoused (57.6%) at the time of their last visit to Harm Reduction Sisters.

Table 1. Administrative data participant characteristics (N=975), February 1, 2023 – May 31, 2024

Demographics	**Count (Percent of total) Or Mean (Standard Deviation)**
Age	40.2 (11.4)
Gender	
Female	447 (45.8)
Male	509 (52.2)
Other	19 (1.9)
Race/ethnicity*	
Prefer not to disclose or N/A	421 (43.2)
Among those who disclosed (n=554)	
White	274 (49.6)
American Indian or Alaska Native (AIAN)	184 (33.2)
Multiple races	55 (9.9)
Black or African American	36 (6.3)
Hispanic or Latino ethnicity	5 (1.0)
Housing status at last visit	
Prefer not to disclose or N/A	593 (60.8)
Among those who disclosed (n=382)	
Unhoused	220 (57.6)
Housed	162 (42.4)
Notes: *Race/ethnicity categories are not mutually exclusive.	

To provide information about the types of harm reduction supplies participants sought, Figure 1 displays the count of unique participant encounters during which supplies were provided in each harm reduction supply category (i.e. smoking supplies, injection supplies, wound care, etc.) between February 1, 2023 – May 31, 2024. Of note, this *does not* reflect the number of items distributed, which is much higher. As an example, if a participant visited Harm Reduction Sisters and received five pipes, this is counted as a single encounter for smoking supplies; if the same person also received four syringes on the same date, this is also counted as a single encounter for injection supplies. The greatest number of participant encounters was for smoking supplies, including different types of pipes or filters (n=3,159 or 34.0% of all unique visits). The next category for which participants made the greatest number of visits to Harm Reduction Sisters was injection supplies, including syringes, tourniquets, cottons or cookers (24.7%, n=2,292), followed by general hygiene and self-care supplies, such as hand warmers or hand sanitizer (12.7%, n=1,183).

Figure 1. Count of unique participant encounters for each harm reduction supply category, (N=9,186 unique visits among N=975 participants)

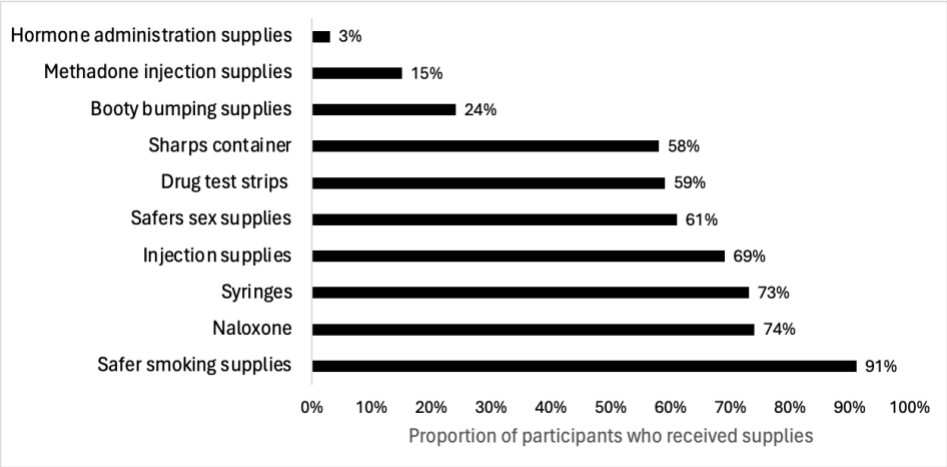


***Survey data*.** Where demographic data were missing from the administrate source, the cross-sectional survey can illuminate this background among Harm Reduction Sisters participant population. The average age was 42.4 years (SD = 11.1) with 45.6% indicating "Female" gender, 52.6% "Male," and 1.8% another gender (Table 2). More than half (60.5%) described their race/ethnicity as White, followed by AIAN (47.4%). Among AIAN, 77.7% reported belonging to a tribal community.

Table 2. Survey participant characteristics (N=114)

Demographics	Count (Percent of total) Or Mean (Standard Deviation)
Age	42.4 (11.1)
Gender	
Female	52 (45.6)
Male	60 (52.6)
Other	2 (1.8)
Race*	
American Indian or Alaska Native (AIAN)	54 (47.4)
Tribal affiliation (among AIAN only, n=54)	42 (78)
Asian or Asian American	3 (2.6)
Black or African American	17 (14.9)
Native Hawaiian or Pacific Islander	6 (5.3)
White	69 (60.5)
Hispanic or Latino	4 (3.5)
Unmet needs past 3 months	
Housing	67 (58.8)
Food	54 (47.4)
Transportation	54 (47.4)
Utilities	47 (41.2)
Bathrooms/Showers	42 (36.8)
Clothing	42 (36.8)
Health	35 (30.7)
Childcare	10 (8.8)
Housing past 3 months	
Someone else's house/apartment	47 (41.2)
Tenting, abandoned buildings, car, or on the streets	39 (34.2)
My own house/apartment by myself	37 (32.5)
Shelter	36 (31.6)
Trap house	15 (13.2)
Other	1 (0.9)
Harm Reduction Sisters engagement	
Months as HRS participant	17.1 (15.3)
Secondary distribution	79 (69.3)
Notes: *Race/ethnicity categories are not mutually exclusive.	

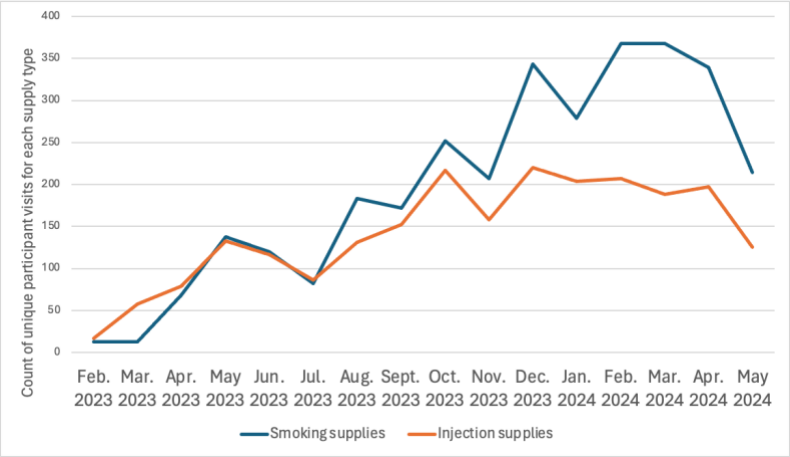
Figure 2. Supplies received from Harm Reduction Sisters in past three months among surveyed participants (N=114), April 2024



Evaluation question #1: *Does the provision of smoking supplies expand the reach of the syringe service program to new participants?*

Using survey data (N=114), we found that 91.2% (n=104) of participants had received smoking supplies in the past 3 months, with 5.2% reporting they knew these materials were available and did not want them, and 3.5% reported that they were not aware these supplies were available (Table 3). *Among those who had received smoking supplies (n=104), 40.4% reported that they had started coming to Harm Reduction Sisters because of these materials*. In examining administrative data, there were substantial increases in the provision of both syringes and smoking supplies to participants over the 16-month evaluation period (February 1, 2023, and May 31, 2024; May numbers might not be fully complete at time of submission) (Figure 3). However, the number of monthly participant visits for smoking supplies consistently surpassed those for injection supplies beginning in August 2023, when drug paraphernalia was decriminalized in Minnesota.

Figure 3. Monthly count of unique participant visits for smoking and injection supplies (N=975 participants), February 2023 – May 2024



Participants were asked about smoking supply preferences and quality; 79.8% preferred bubble pipes, 27.9% hammer pipes, 17.3% foils, and 15.4% straight stem pipes (responses were not mutually exclusive). The quality of smoking supplies was ranked from 1 (very bad) to 5 (very good) and the average quality rating was 3.7 (SD=1.4). Participants were also asked to indicate reasons for which they had returned to Harm Reduction Sisters for additional smoking supplies. Broken pipes the top response (90.4%), followed by getting supplies for others (76.9%), and lost (64.4%) or taken pipes (60.6%). The least common response was that their previous pipe was too dirty (26.0%).

Our evaluation did not capture knowledge or attitudes prior to Minnesota's 2023 decriminalization of paraphernalia; however, we examined survey results pertinent to this issue, which were collected nine months after the policy change, and found that 59.6% of participants were aware of the drug paraphernalia decriminalization law and 93.9% had not had drugs or paraphernalia been taken by police in the last three months.

Table 3. Survey participant responses to Safe Smoking Supplies (SSS) questions (N=114)

	Count (Percent of total)
Among all survey participants (n=114)	
Received SSS[a] (n (%))	104 (91.2)
Did not receive SSS (n(%))	10 (8.8)
Knew they were available, but did not want them	6 (5.2)
Did not know they were available	4 (3.5)
Among those who received SSS (n=104)	
Began coming to HRS[b] because of SSS (n(%))	42 (40.4)
SSS preferences (n(%))	
Bubble pipe	83 (79.8)
Hammer pipe	29 (27.9)
Foils	18 (17.3)
Straight stem pipe	16 (15.4)
SSS quality rating (1 = very bad – 5 = very good) (mean (SD))	3.7 (1.4)
Reasons for returning for more SSS[c] (n(%))	
Pipe broke	94 (90.4)
For other people	80 (76.9)
Pipe was lost	67 (64.4)
Pipe was taken	63 (60.6)
Didn't want to share pipe	53 (51.0)
Tossed/worried someone would find it	33 (31.7)
Pipe was too dirty	27 (26.0)
Never came back for more SSS	2 (1.9)
Notes: [a]SSS = Safer smoking supplies [b]HRS = Harm Reduction Sisters [c]Indicated variables are not mutually exclusive.	

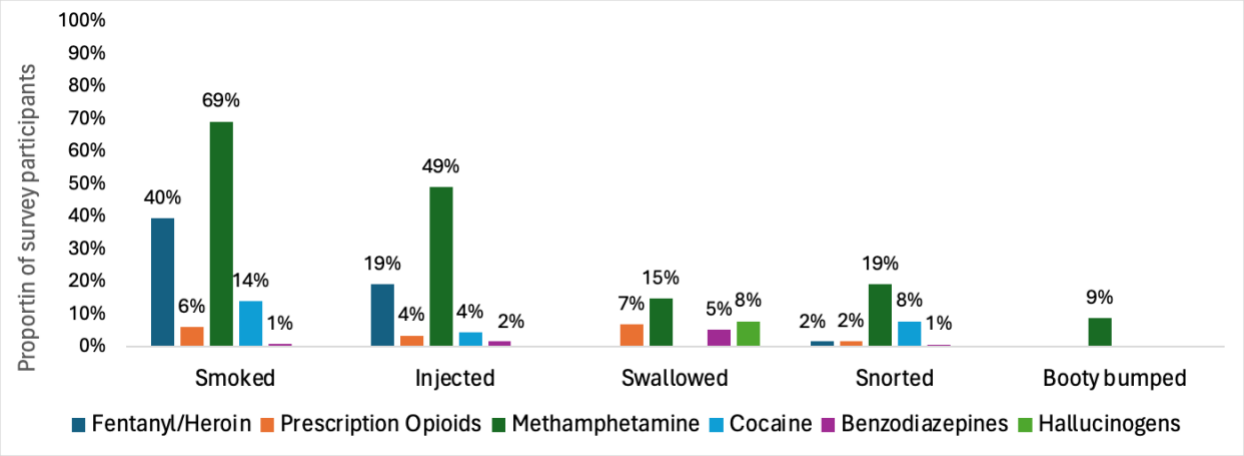
Evaluation question #2: *Is the provision of smoking supplies associated with participant drug use behaviors?*

Among all participants who completed the survey, the drug most used was methamphetamine (83.3%), followed by fentanyl/heroin (46.5%), and cocaine (20.2%); 41.0% reported use of both illicit opioids (fentanyl/heroin) and illicit stimulants (methamphetamine/cocaine) (Table 4). We found that 39.5% reported smoking fentanyl/heroin and 19.3% injecting it, while 69.3% reported smoking methamphetamine and 49.1% injecting (Figure 4). Overall, 81.6% of participants reported smoking any drug, 50.9% injecting any drug, and 43.9% reported both.

Table 4. Drugs used by any method among survey participants (N=114)

Drug type	Count (Percent of total)
Methamphetamine	95 (83.3)
Fentanyl/Heroin	53 (46.5)
Cocaine	23 (20.2)
Prescription Opioids	18 (15.8)
Benzodiazepines	9 (7.9)
Hallucinogens	9 (7.9)
Opioids + Stimulants	48 (41.0)

Figure 4. Drugs used and method of ingestion among survey participants (N=114)



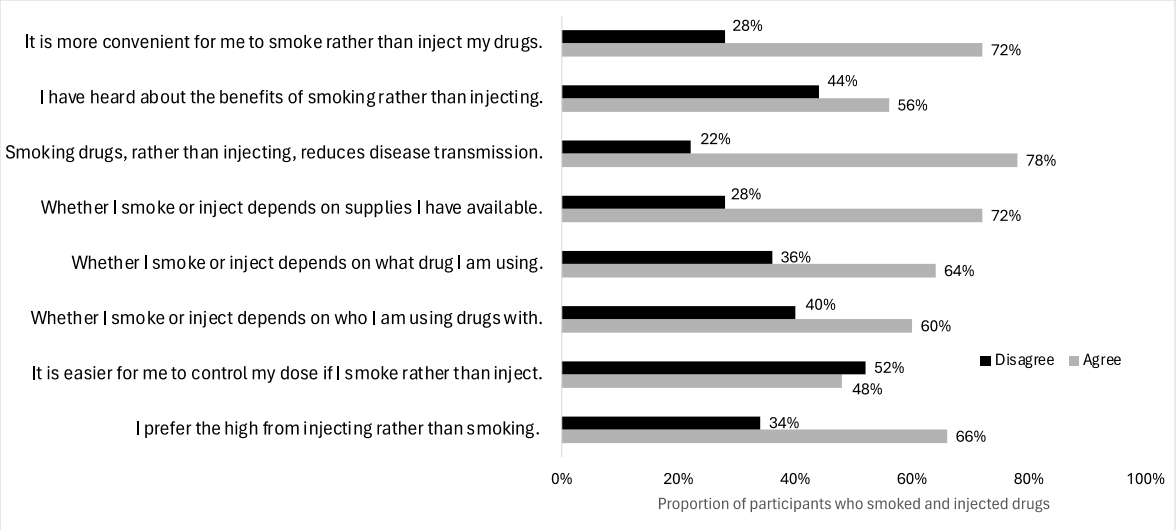
It was beyond the scope of this evaluation to collect data from the same participant over multiple time points and assess behavioral changes resulting from smoking supplies. However, we examined differences in drug use behaviors and attitudes between those who became Harm Reduction Sisters participants because of safe smoking supplies ("SSS" participants, 36.8%) versus those who became participants for other reasons ("other" participants, 63.2%) (Table 5). While there were no differences in types of drugs used between SSS participants and other participants, we did find that SSS participants were significantly more likely *to smoke but not inject* drugs (57.1% vs. 26.4%, p=0.002) and less likely to inject any drug (35.7 vs. 59.7, p=0.023).

Table 5. Client drug use differences between those who first became Harm Reduction Sisters participants due to Safe Smoking Supplies (SSS) versus other reasons (N=114)

	SSS clients (n=42)	Other clients (n=72)	p-value	Total (N=114)
Fentanyl/Heroin (n(%))	18 (42.9)	35 (48.6)	0.690	53 (46.5)
Prescription Opioids (n(%))	5 (11.9)	13 (18.1)	0.547	18 (15.8)
Methamphetamine (n(%))	35 (83.3)	60 (83.3)	1.000	95 (83.3)
Cocaine (n(%))	8 (19.0)	15 (20.8)	1.000	23 (20.2)
Benzodiazepines (n(%))	1 (2.4)	8 (11.1)	0.191	9 (7.9)
Hallucinogens (n(%))	3 (7.1)	6 (8.30)	1.000	9 (7.9)
Smokes any drug (n(%))	38 (90.5)	55 (76.4)	0.105	93 (81.6)
Smokes but does not inject (n(%))	24 (57.1)	19 (26.4)	**0.002**	43 (37.7)
Injects any drug (n(%))	15 (35.7)	43 (59.7)	**0.023**	58 (50.9)
Smokes and injects (n(%))	14 (33.3)	36 (50.0)	0.125	50 (43.9)
Notes: [a]SSS = safe smoking supplies				

Among those who both smoked and injected drugs (n=50) we examined a series of Likert scale items on perceptions related to smoking versus injecting drugs. For ease of interpretation, we collapsed "strongly disagree" and "disagree" into a "disagree" category and "strongly agree" and "agree" into an "agree" category. As illustrated in Figure 5, 66% agreed they preferred the high from injecting rather than smoking, with 48% agreeing that it is easier to control the dose when smoking relative to injecting. Over half of participants agreed that smoking versus injecting drugs depends on who they are using drugs with (60%), what drug they are using (64%), and which supplies they have available (72%). A majority (78%) agreed that smoking relative to injecting reduces disease transmission and 56% had heard about benefits of smoking relative to injecting drugs. Most (72%) also agreed that smoking drugs was more convenient than injecting.

Figure 5. Perceptions of smoking versus injecting drugs among survey participants who smoked and injected drugs, (N=50)



Additionally, we created two mutually exclusive categories based on method of drug ingestion to assess differences in drug use between those who *inject only* or *inject and smoke* drugs (Injection participants) (43.9%) and those who *smoke but do not inject* drugs (Smoking participants) (37.7%). Of note, we excluded from this analysis 13 participants who did not smoke or inject drugs. Of 101 participants, there were 58 (57.4%) Injection participants and 43 (42.6%) Smoking participants (Table 6). Overall, Smoking participants reported lower rates of drug use. Relative to Injection participants, Smoking participants were significantly less likely to report methamphetamine use (86.0% versus 100%, p=0.012), although both groups had a relatively high prevalence of methamphetamine use. Smoking participants were also significantly less likely to report cocaine use (11.6% versus 31.0%, p=0.039), and both opioid and stimulant use (32.6% versus 58.6%, p=0.017).

Table 6. Drug use among survey participants who inject drugs (Injection participants) versus those who smoke but do not inject drugs (Smoking participants) (N=101)

	Injection participants (n=58)	Smoking participants (n=43)	p-value	Overall (N=101)
Fentanyl/Heroin (n(%))	34 (58.6)	19 (44.2)	0.217	53 (52.5)
Methamphetamine (n(%))	58 (100.0)	37 (86.0)	**0.012**	95 (94.1)
Cocaine (n(%))	18 (31.0)	5 (11.6)	**0.039**	23 (22.8)
Benzodiazepines (n(%))	7 (12.1)	1 (2.3)	0.156	8 (7.9)
Hallucinogens (n(%))	4 (6.9)	5 (11.6)	0.637	9 (8.9)
Prescription Opioids (n(%))	12 (20.7)	5 (11.6)	0.350	17 (16.8)
Opioids + Stimulants (n(%))	34 (58.6)	14 (32.6)	**0.017**	48 (47.5)

Evaluation question #3: *How can the provision of smoking supplies be optimized for rural and tribal settings?*

We did not want to risk reidentification of any of the participants, so we did not include any measures of geographic location, including rurality. Therefore, to examine optimization for tribal settings we examined survey responses between those who identified as AIAN (47.4%, n=54) versus those who did not (n=60, 52.6) (Table 7). Relative to non-AIAN participants, AIAN participants were significantly more likely to be female (57.4% versus 35.0%, p=0.050), report an unmet need for food (61.1% versus 35.0%, p=0.009), and report staying in a tent, abandoned building, car park, or on the streets in the past three months (44.4% versus 25.0%, p=0.047).

There were no significant differences between AIAN and non-AIAN participants in Harm Reduction Sisters engagement measures, including reason for first becoming a participant, length of time as a participant, nor secondary distribution. However, in terms of supplies received, AIAN participants were significantly more likely to receive naloxone in the past three months (83.3% versus 65.0%, p=0.045). Table 8 compares drugs used and methods of ingestion between AIAN and non-AIAN participants and includes only the methods of ingestion indicated by at least one participant. Relative to non-AIAN

participants, AIAN participants were significantly more likely to use fentanyl/heroin (57.4% versus 36.7%, p=0.042), and specifically inject it (27.8% versus 11.7%, p=0.053). There were no differences in smoking supplies preferences between AIAN and non-AIAN participants who received SSS.

Table 7. Comparison of survey participant characteristics by American Indian Alaskan Native (AIAN) versus not AIAN (N=114)

	AIAN (n=54)	Not AIAN (n=60)	p-value	Overall (N=114)
Demographics				
Age	41.56 (11.13)	43.15 (11.11)	0.446	42.39 (11.10)
Gender (female)	31 (57.4)	21 (35.0)	**0.050**	52 (45.6)
Unmet needs past 3 months				
Housing	36 (66.7)	31 (51.7)	0.152	67 (58.8)
Food	33 (61.1)	21 (35.0)	**0.009**	54 (47.4)
Transport	29 (53.7)	25 (41.7)	0.272	54 (47.4)
Utilities	26 (48.1)	21 (35.0)	0.217	47 (41.2)
Bathrooms/Showers	22 (40.7)	20 (33.3)	0.532	42 (36.8)
Clothing	24 (44.4)	18 (30.0)	0.161	42 (36.8)
Health	18 (33.3)	17 (28.3)	0.708	35 (30.7)
Childcare	6 (11.1)	4 (6.7)	0.613	10 (8.8)
Housing past 3 months				
Someone else's house/apartment	27 (50.0)	20 (33.3)	0.106	47 (41.2)
Tenting, abandoned buildings, car park, or on the streets	24 (44.4)	15 (25.0)	**0.047**	39 (34.2)
My own house/apartment by myself	14 (25.9)	23 (38.3)	0.225	37 (32.5)
Shelter	18 (33.3)	18 (30.0)	0.857	36 (31.6)
Trap house	10 (18.5)	5 (8.3)	0.184	15 (13.2)
Other	1 (1.9)	0 (0.0)	0.958	1 (0.9)
Harm Reduction Sisters engagement				
Began coming to HRS because of SSS (n(%))	25 (41.7)	17 (31.5)	0.352	42 (36.8)
Months as HRS client (mean(SD))	18.33 (15.83)	15.93 (14.89)	0.406	17.07 (15.32)
Secondary distribution (n(%))	34 (63.0)	45 (75.0)	0.235	79 (69.3)
Supplies received				
Safer smoking supplies	51 (94.4)	53 (88.3)	0.412	104 (91.2)
Naloxone	45 (83.3)	39 (65.0)	**0.045**	84 (73.7)
Syringes	42 (77.8)	41 (68.3)	0.357	83 (72.8)
Injection supplies	40 (74.1)	39 (65.0)	0.398	79 (69.3)
Safer sex supplies	32 (59.3)	37 (61.7)	0.944	69 (60.5)
Drug test strips	32 (59.3)	35 (58.3)	1.000	67 (58.8)
Sharps container	32 (59.3)	34 (56.7)	0.928	66 (57.9)
Booty bumping supplies	16 (29.6)	11 (18.3)	0.232	27 (23.7)
Methadone injection supplies	12 (22.2)	5 (8.3)	0.069	17 (14.9)
Hormone administration supplies	1 (1.9)	2 (3.3)	1.000	3 (2.6)

Table 8. Comparison of drugs used and methods of ingestion by American Indian Alaskan Native (AIAN) versus not AIAN (N=114)

	AIAN (n=54)	Not AIAN (n=60)	p-value	Overall (N=114)
Fentanyl/Heroin (n(%))	31 (57.4)	22 (36.7)	**0.042**	53 (46.5)
Smoked (n(%))	25 (46.3)	20 (33.3)	0.222	45 (39.5)
Injected (n(%))	15 (27.8)	7 (11.7)	**0.053**	22 (19.3)
Snorted (n(%))	1 (1.9)	1 (1.7)	1.000	2 (1.8)
Prescription Opioids (n(%))	11 (20.4)	7 (11.7)	0.310	18 (15.8)
Smoked (n(%))	3 (5.6)	4 (6.7)	1.000	7 (6.1)
Injected (n(%))	1 (1.9)	3 (5.0)	0.687	4 (3.5)
Snorted (n(%))	2 (3.7)	0 (0.0)	0.430	2 (1.8)
Swallowed (n(%))	8 (14.8)	0 (0.0)	**0.006**	8 (7.0)
Methamphetamine (n(%))	46 (85.2)	49 (81.7)	0.801	95 (83.3)
Smoked (n(%))	37 (68.5)	42 (70.0)	1.000	79 (69.3)
Injected (n(%))	29 (53.7)	27 (45.0)	0.459	56 (49.1)
Snorted (n(%))	11 (20.4)	11 (18.3)	0.970	22 (19.3)
Swallowed (n(%))	10 (18.5)	7 (11.7)	0.446	17 (14.9)
Cocaine (n(%))	15 (27.8)	8 (13.3)	0.092	23 (20.2)
Smoked (n(%))	12 (22.2)	4 (6.7)	**0.034**	16 (14.0)
Injected (n(%))	1 (1.9)	4 (6.7)	0.426	5 (4.4)
Snorted (n(%))	6 (11.1)	3 (5.0)	0.390	9 (7.9)
Benzodiazepines (n(%))	5 (9.3)	4 (6.7)	0.869	9 (7.9)
Smoked (n(%))	1 (1.9)	0 (0.0)	0.958	1 (0.9)
Injected (n(%))	1 (1.9)	1 (1.7)	1.000	2 (1.8)
Snorted (n(%))	1 (1.9)	0 (0.0)	0.958	1 (0.9)
Swallowed (n(%))	3 (5.6)	3 (5.0)	1.000	6 (5.3)
Hallucinogens (n(%)) (swallowed only)	3 (5.6)	6 (10.0)	0.596	9 (7.9)

Continued Feedback

As part of evaluation efforts, we sought to develop a means for generating ongoing feedback from both current participants and the community at large, particularly from Indigenous persons, regarding Harm Reduction Sisters services. To accomplish this, we partnered with a local Indigenous artist to design imagery specific to Harm Reduction Sisters mission. Through conversations with staff and volunteers the artist (Wesley May) interpreted the harm reduction philosophy to "meet people where they are at" and in reflecting on Harm Reduction Sisters efforts to address the gaps in current health systems conceived of the organization as walking with participants on their path, no matter what that looks like. The artist painted a fragmented Medicine Wheel with interconnected shapes representing a continuous pattern of life and death (see Figure 6). This artwork was the designed into a sticker, with the words "Walking this Path Together" around the outside, and a QR Code that links to a survey (Figure 7).

Figure 6. Original art for community outreach

The online survey from this QR Code first asks respondents whether they are currently a participant at Harm Reduction Sisters. Those that are participants are provided with items that ask about how to improve services, particularly for those in rural and tribal settings, and for those who are not participants the online survey asks about their interest in learning more about Harm Reduction Sisters and harm reduction practices. This effort will extend beyond the current NACCHO evaluation and allow Harm Reduction Sisters to receive feedback from the community and provide a platform to announce new services.

Figure 7. Stickers to solicit community feedback

Discussion

These evaluation efforts provided Harm Reduction Sisters with an important opportunity to learn from their participants and, while limited in research design scope, it provided valuable insight about the use of smoking supplies. The survey was not designed for only those who obtained smoking supplies and recruitment materials were clear in stating that everyone who was an active participant knew they were eligible. Yet we still found that more than 90 percent of the participants who completed the survey had obtained smoking supplies from Harm Reduction Sisters in the past three months.

There is continued discussion in research literature about people transitioning from injection to smoking drugs, and while our study was not longitudinal, we had several notable findings that may speak to this. In administrative data, we found a significant increase in participant encounters for safe smoking supplies relative to injection supplies, which may be due to some participants switching from injecting to smoking. We also found that Harm Reduction Sisters participants were more likely to smoke exclusively than inject exclusively, and that nearly half did both. Among participants who both smoked and injected, a majority indicated that smoking is more convenient than injecting, even though over half preferred the high from injecting relative to smoking. Participants may switch to smoking as a matter of convenience; around half felt that it was easier to control their dose when smoking relative to injecting, indicating that, at least for some, a perception of dose control may also contribute to the decision to smoke rather than inject. Further, over half of participants who smoked and injected drugs agreed that whether they smoke or inject depends on the supplies they have available, indicating that the provision of smoking supplies increases the likelihood of smoking versus injecting. Finally, more than half of participants who both smoked and injected indicated that the method of ingestion depends on who they are using drugs with. This suggests that social factors may play a role in the decision to smoke rather than inject drugs.

In response to evaluation question #1 (*Does the provision of smoking supplies expand the reach of the syringe service program to new participants?)*, we found that 40.4% of participants who completed the survey started coming Harm Reduction Sisters because they provided safe smoking supplies. Safe smoking supplies brought new persons who use drugs to harm reduction services and likely contributed to trends we observed in the administrative data indicating more participant encounters for smoking supplies relative to injection supplies. Our analysis of these data also suggests that recent policy changes in Minnesota decriminalizing paraphernalia may have helped to facilitate this emerging harm reduction strategy. Indeed, there were significant increases in the provision of *both* syringes *and* smoking supplies obtained by participants over the 16-month evaluation period (February 1, 2023, and May 31, 2024). While our evaluation did not capture knowledge or attitudes prior to the policy change, survey results were collected 9-months after the policy change, and we found that 60% of participants were aware of Minnesota's 2023 drug paraphernalia decriminalization law and 94% had not had drugs or paraphernalia confiscated by police in the last three months. Without longitudinal data we cannot say for certain whether these experiences were the result of the policy achievements.

Our findings provided some insight in evaluation question #2 (Is the provision of smoking supplies associated with participant drug use behaviors?) We found that

participants who came to Harm Reduction Sisters because of safe smoking supplies were less likely to inject drugs relative to those who came for other services. This may indicate that those who smoke are less likely to also inject drugs, although a causal pathway is not clear. We also found that overall participants who *smoked but did not inject* reported a lower prevalence of drug use relative to those who *smoke and inject* or *inject only*. Those who smoked were significantly less likely to report methamphetamine use, cocaine use, and use of both opioids and stimulants.

For evaluation question #3 (*How can the provision of smoking supplies be optimized for rural and tribal settings?)*, we found *no* differences in other demographics, drug use behaviors, unmet needs, knowledge, or attitudes between those who had tribal affiliation versus those who did not (these results were not presented in this report). Because we found no differences, we opted to compare participants based on AIAN versus non-AIAN race, which yielded some key results. AIAN participants were significantly more likely to be female, indicate an unmet need for food, and report staying in a tent, abandoned building, car park, or on the street. This suggests that coupling harm reduction with services and supplies culturally tailored to AIAN women may be an important way to optimize services for this population. For example, the provision of snacks or more substantial food items preferred by AIAN participants may be important for optimally reaching this population. Additionally, it may be important to determine where unhoused AIAN participants tend to stay so that mobile services can be coordinated to ensure service provision. AIAN participants were also significantly more likely to use fentanyl/heroin, swallow prescription opioids, and smoke cocaine. Given their relatively higher likelihood of using opioids, it is important to note that AIAN participants were also significantly more likely to receive naloxone from Harm Reduction Sisters and it is essential to continue offering the overdose antidote to AIAN participants. It may also be important to determine pipe preferences among AIAN participants who smoke opioids and/or cocaine and understand their decisions regarding whether to smoke or inject drugs. Of note, the fact that we found no elevated needs or drug use behaviors based on tribal affiliation, but did find differences based on AIAN status, may indicate that tribal affiliation is a protective factor. In reflecting on these results and the characteristics of Harm Reduction Sisters participants it is important to note that a majority of staff in organization have tribal affiliation and regularly conduct active outreach to those communities.

Conclusion

Harm reduction services are often implemented in unsanctioned environments and by the time they are sanctioned, sufficient observational studies suggest effectiveness such that it is considered unethical to conduct randomized controlled trials that withhold life-saving interventions for people in the control groups. This, and the fact that many studies evaluating innovative harm reduction strategies come from countries outside of the United States, means that the evidence base is varied. This evaluation conducted on safe smoking supplies has provided one of the first steps towards establishing that evidence-base and Harm Reduction Sisters and their evaluation partners look forward to doing continued research on this and other strategies that reduce harms from drug use.

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