



Xylazine Response among Harm Reduction Organizations

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KEY POINTS

- Key informants from harm reduction organizations or similar programs across the United States noted an increase in xylazine prevalence in their communities, with xylazine ranging from a years-long problem to first being identified in early 2023.
- Many barriers to care exist, including lack of treatment information and best practices and stigma towards people who use drugs.
- Opportunities for additional community engagement raised by key informants include expanded access to comprehensive drug checking equipment to better monitor the changing drug supply, and timely communication and dissemination of xylazine information from trusted sources.

INTRODUCTION

Xylazine is a non-opioid sedative approved in use for animals, that has proliferated as an adulterant added to the illicit drug supply in the United States (U.S.). As a result, it has also been increasingly tied to drug overdose deaths. As the illicit drug landscape evolves, there is urgent interest among policymakers to understand how communities are responding to these changes and the potential action steps that may be considered to address xylazine use, as these lessons may be applied to xylazine and potentially other adulterants going forward.

Previous research suggests that xylazine existed in the illicit drug supply in Puerto Rico dating back to the early 2000s, and its presence was detected in the continental U.S. as far back as 2007.¹ In 2015, xylazine was detected in less than one percent of drug overdose deaths in 10 jurisdictions, and in less than three percent of overdose deaths in January 2019 among states reporting to the Centers for Disease Control and Prevention's (CDC's) State Unintentional Drug Overdose Reporting System (SUDORS).^{2,3} By 2022, xylazine was detected in 10.9 percent of fentanyl-involved overdose deaths among the 21 jurisdictions reporting to SUDORS.⁴

Recent years have seen a dramatic rise in xylazine detected in the illicit drug supply. The Drug Enforcement Administration (DEA) reports that between 2020 and 2021, laboratory identification of xylazine increased

¹ Torruella, Rafael A. "Xylazine (veterinary sedative) use in Puerto Rico." *Substance Abuse Treatment, Prevention, and Policy* 6 (2011): 1-4.

² Friedman, Joseph, et al. "Xylazine spreads across the US: a growing component of the increasingly synthetic and polysubstance overdose crisis." *Drug and alcohol dependence* 233 (2022): 109380.

³ Kariisa, Mbabazi, et al. "Notes from the field: xylazine detection and involvement in drug overdose deaths—United States, 2019." *Morbidity and Mortality Weekly Report* 70.37 (2021): 1300.

⁴ Kariisa, Mbabazi, et al. "Illicitly Manufactured Fentanyl-Involved Overdose Deaths with Detected Xylazine — United States, January 2019–June 2022." *Morbidity and Mortality Weekly Report* 72:721–727 (2023).

across all census regions, with the highest total in the Northeast (902 identifications) and marked increases in the South (193 percent) and the West (112 percent).⁵ Additionally, xylazine has now been seized in every U.S. state and the District of Columbia.⁶ Serious health concerns surround xylazine exposure, as the drug is thought to extend the sedative effects of heroin and fentanyl by suppressing the central nervous system.⁷ These effects include slowed breathing, reduced heart rate and blood pressure, while repeated exposure can lead to skin wounds, open sores, and abscesses.

In response to xylazine's growing role in overdose deaths, the Biden-Harris Administration designated fentanyl adulterated or associated with xylazine as an emerging threat to the United States in April 2023. In July 2023, the Office of National Drug Control Policy (ONDCP) released a report on Fentanyl Adulterated or Associated with Xylazine, in part detailing the federal government's efforts to address the drug overdose crisis.⁸ One such notable action includes the U.S. Department of Health and Human Services (HHS) permitting certain federal grant funds to be used to purchase xylazine test strips, in order for people that use drugs to avoid xylazine in their drug supply.⁹ States have also taken actions in direct response to concerns about xylazine. Efforts include legalizing xylazine test strips, as well as enacting either temporary or permanent legislation to classify xylazine as a scheduled drug.

Despite the growing body of evidence that xylazine use has increased, as well as research surrounding the health impacts of xylazine exposure, little is known about how communities are coping with the changing drug landscape, and what policy options may be useful in addressing xylazine use and potentially other emerging substances of concern in the illicit drug supply going forward. This study aimed to bridge this gap by hearing directly from individuals working on the front lines of the overdose crisis to better understand their experiences with xylazine and discuss potential policy solutions.

METHODS

ASPE contracted with NORC at the University of Chicago to conduct interviews with up to nine key informants from harm reduction programs, community organizations, state government agencies, or local health departments from across the U.S., to understand the changing xylazine landscape, its perceived impact on communities, and potential solutions. An initial list of 17 possible individuals were identified. We prioritized individuals from programs in regions with higher known xylazine prevalence, such as the Northeast, as well as individuals interacting with communities in both urban and rural areas. Within each organization, key informants with on-the-ground or lived experience were selected, where possible. From this list, nine individuals were identified to participate in the study, and each were offered a \$100 gift card as compensation.

While recruiting key informants, ASPE and NORC developed a set of interview questions to guide each discussion (see Appendix A). This interview guide consisted of the following three segments, with additional

⁵ U.S. Drug Enforcement Administration, "The Growing Threat of Xylazine and its Mixture with Illicit Drugs." DEA Joint Intelligence Report (2022).

⁶ U.S. Drug Enforcement Administration, "National Drug Threat Assessment 2024." (2024). Available at: <https://www.dea.gov/sites/default/files/2024-07/2024%20NDTA-updated%207.5.2024.pdf>

⁷ Alexander, R. S., Canver, B. R., Sue, K. L., & Morford, K. L. (2022). Xylazine and overdoses: trends, concerns, and recommendations. *American Journal of Public Health*, 112(8), 1212-1216.

⁸ U.S. Executive Office of the President, Office of National Drug Control Policy. "Fentanyl Adulterated or Associated with Xylazine Response Plan." (2023). Available at: <https://www.whitehouse.gov/wp-content/uploads/2023/07/FENTANYL-ADULTERATED-OR-ASSOCIATED-WITH-XYLAZINE-EMERGING-THREAT-RESPONSE-PLAN-Report-July-2023.pdf>

⁹ U.S. Department of Health and Human Services, "Biden-Harris Administration Marks Two Years of Advancements in HHS' Overdose Prevention Strategy with New Actions to Treat Addiction and Save Lives." (2024). Available at: <https://www.hhs.gov/about/news/2024/02/01/biden-harris-administration-marks-two-years-advancements-hhs-overdose-prevention-strategy-new-actions-treat-addiction-save-lives-press-release.html>

follow-up questions to elicit further detail, where necessary: (i) a background section to gather information about the key informant’s organization and the type of services they offer, (ii) existing xylazine prevalence and impact in their community, and (iii) responses and solutions to xylazine. The interview guide allowed for flexibility to adapt new questions based on participant answers. Each interview was held virtually, with two representatives from NORC leading the semi-structured interviews, and one ASPE project manager also present to ask additional questions. Each interview ranged from 45-60 minutes, and transcription services were provided through NORC.

Overview of Key Informants’ Organizations

The key informants we spoke with were either involved in on-the-ground treatment and outreach efforts for people in the community or were responsible for various program coordination activities within their organization. Table 1 displays several characteristics of the organizations included in this study. While most were from the Northeast, the epicenter of xylazine-involved overdoses in the U.S., one program was located in the West and one in the Midwest, and none from the South. In terms of the services they provided, nearly all of the represented organizations incorporated some type of xylazine education and wound care, while the majority also distributed xylazine test strips and xylazine wound care kits.

Table 1: Key Informant Organization Characteristics

Stakeholder Characteristics	Number of Stakeholders (%)
Region	
Midwest	1 (11%)
Northeast	7 (78%)
South	0 (0)
West	1 (11%)
Services Provided	
Xylazine Education	8 (89%)
Xylazine Test Strips	7 (78%)
Xylazine Wound Care Kits	5 (56%)
Wound Care Services	9 (100%)

RESULTS

Program Activities

Key informants noted that their organizations were engaged in a wide range of program activities. While some were more administrative in nature, such as funding harm reduction or community organizations across the state, others worked directly in the community with people who use drugs.

For organizations interacting directly with people in their community, services included distribution of supplies, including naloxone, wound care kits, living supplies (e.g., tents, batteries), syringe services, medication and transportation vouchers, as well as test strips for both fentanyl and xylazine. Test strips were distributed either in-person or anonymously through the mail. Additional work conducted by these organizations included health testing (e.g., HIV, Hepatitis C) and medical services (with a particular emphasis on wound care), as well as mental health services and referrals to opioid use disorder treatment providers.

Eight of the nine organizations we spoke with also provided education and training materials. These took on a variety of forms, including information dissemination through an online webpage, webinar trainings, distributing guidance documents for clinical staff, and information sheets to the public. Indeed, one key informant stated “we created a xylazine guidance document...we have a xylazine webpage...we also created a xylazine information sheet for people who use drugs. So, we’ve produced a lot, but it’s not enough.”

Seven key informants noted their organizations were also able to provide comprehensive drug checking services, either through a drug checking machine on-site, sending samples away to a lab for analysis, or by distributing fentanyl or xylazine test strips. However, state laws prevented other key informants from providing similar services. A key informant summarized their experience by stating, “I’ve been called by the state public health labs, by the state police, by anybody, to say ‘How much xylazine do we have?’ I love to tell them, ‘I have no idea, because you will not allow me to test it.’” However, even for organizations with access to Fourier-transform infrared (FTIR) spectroscopy machines, respondents noted that the product’s high cost and the technical expertise needed to interpret the results were prohibiting factors for wider adoption. For another key informant, concerns about unreliable test results caused them to discontinue using handheld mass spectrometer machines. However, at least one harm reduction organization was able to develop a statewide drug reporting alert system, whereby individuals could self-report finding xylazine in their drug supply, and an email or text alert would warn others who were registered for the system alerts of the danger.

Funding Sources

The organizations represented in participant interviews included harm reduction programs, community organizations, state government agencies, and local health departments, and were supported by a range of funding sources. For those working within government, funding was derived primarily from state and county tax dollars, with additional opioid settlement funds being used to purchase specific supplies such as naloxone. For other groups, funding was derived from a combination of federal, state, or local grants, and donations from individual donors. In total, three organizations were funded at least partially by opioid settlement funds, two received federal grants, and five received state funding.

Donated supplies such as fentanyl test strips were also noted to help reduce administrative burden and increase timely services to community members. For example, one harm reduction organization found it difficult to pay for fentanyl test strips due to the product being illegal within the state. However, once the state’s law changed to decriminalize fentanyl test strips, a local hospital system donated a large supply to the organization, and the state health department was able to supply them for free. This freed up funds for the organization to purchase additional items such as xylazine test strips. While many key informants spoke about working with limited funds and not knowing whether they would be able to retain administrative and on-the-ground personnel, others, particularly in large urban areas or those funded through tax dollars, operated with less uncertainty year to year.

Clients and Type of Drug Use

We also sought to understand the characteristics of individuals that typically seek services from each key informant’s organization. While some participants stated that there is no typical client, or that they interact with people from a variety of backgrounds and across the entire state, others primarily helped individuals located in their communities. This included either urban or rural clients (and occasionally both), as well as people of all ages and ethnicities. One key informant in the Northeast noted that around 30 percent of clients identified as a person of color and roughly the same percentage were women. Another key informant noted that while most clients of harm reduction organizations in their state were men, they knew of one program that attracted roughly 80 percent women. Additionally, many reported working with people who were unhoused. Key informants who were aware of the specific drugs their clients typically consumed noted that polysubstance use was prevalent, and primarily noted opioid use.

Impact of Xylazine Use

All key informants noted the adverse impacts of xylazine on their communities. Every respondent stated that there was an increased prevalence of wounds, as well as a noticeable increase in heavy and prolonged sedation. With xylazine rendering people unconscious for hours in some cases, people who use drugs were reported to be at greater risk of assault, victims of theft, and prone to environmental injury. In the latter case,

this could occur as soft tissue or nerve damage from remaining in one position for prolonged periods of time, as well as adverse health effects from exposure to extreme heat or cold in an outdoor setting. Key informants also noted a number of issues surrounding naloxone, including the lack of understanding among community members on whether and how much naloxone to use when responding to a xylazine-involved overdose. Despite these challenges, respondents continued to advise their community members of the importance of administering naloxone in cases of suspected drug overdoses involving xylazine.

Interviewees often stated that they believed xylazine had a greater perceived risk of overdose and faster perceived time to overdose, given that xylazine is a sedative and muscle relaxant. Additionally, because xylazine is not an opioid, naloxone does not reverse the effects of xylazine. If people who use drugs are unknowingly consuming xylazine as an adulterant, they may be unaware of the signs and symptoms of a xylazine-involved overdose and the associated health risks. Relatedly, if bystanders or first responders are unaware of xylazine and how to treat a suspected xylazine-involved overdose, the person experiencing the overdose may be at greater risk of dying.

While in some cases, people who use drugs would seek harm reduction services for their substance use disorder in order to reduce their risk of exposure to current and future dangerous adulterants and their associated health risks, other key informants noted a different response. Because fentanyl use is associated with poorer sleep quality, two key informants noted that some clients reportedly now seek out xylazine in order to regulate their sleep.¹⁰ For these individuals, xylazine was not perceived as a risky drug to avoid, but was seen as a means of offsetting the negative effects of fentanyl. By using less frequently throughout the night, there was also the belief that the risk of overdose was diminished. Additionally, another key informant noted that intentional polysubstance use was driven by a desire to offset the sedative effects of xylazine, which could render someone unconscious on the street. Specifically, individuals would seek out methamphetamine to keep them awake, counteracting the likely presence of xylazine in the drug supply. Key informants also shared a range of views towards xylazine test strips. While those in areas with a large xylazine presence believed test strips did not provide any new information, others stated that they could not keep up with the high demand.

Barriers

Several common barriers to improving the range or quality of harm reduction services and receiving treatment were frequently mentioned throughout the interviews. These included stigma, lack of drug testing, lack of knowledge from first responders, and a desire for information on wound care and withdrawal treatment.

The barrier most frequently noted was the presence of stigma and misinformation. With some medical providers not understanding how or being willing to treat substance use disorders, xylazine wounds, or fentanyl in the drug supply, receiving high quality care is often difficult for people who use drugs. Indeed, seven participants stated that clients will refuse to seek medical treatment in hospitals due to previously receiving harsh treatment (e.g., having wounds debrided without receiving anesthetic, being discharged from the hospital without pain medication, or hearing that “you deserve it” from medical professionals). This often leads to worsening health effects such as larger xylazine wounds, and in some cases amputation of limbs caused by a delay in seeking treatment. Key informants also spoke of the challenges associated with misinformation and inflammatory language from law enforcement personnel and politicians. Rumors that an individual can die from touching fentanyl, and that

Key Informant

“They’ve had their wounds debrided without any kind of anesthetic and the doctor say[s] to them, ‘you deserve it because you did this to yourself.’”

¹⁰ National Institutes of Health, “NIH HEAL Initiative: Science taking on pain, opioid misuse—and poor sleep.” (2019). Available at: <https://www.nhlbi.nih.gov/news/2019/nih-heal-initiative-science-taking-pain-opioid-misuse-and-poor-sleep>

people who use xylazine resemble “zombies” were reportedly frequently disseminated in news stories, and key informants often found themselves taking valuable time to dispel misinformation rather than providing services.

Related to misinformation is the lack of knowledge surrounding xylazine and its health effects. For example, several key informants shared that it was unclear whether the risk of developing xylazine wounds varied by route of administration, what level of xylazine has a clinical impact, and how much is considered lethal. This uncertainty reduced their ability to provide accurate information to people who use drugs, instead relaying what is currently understood about the drug while also noting their uncertainty.

Participants also discussed the “invisible barriers” that drive stigma, such as additional DEA registration, and training and prescription requirements. These administrative hurdles were said to increase the difficulty and cost of providing treatment to individuals with opioid use disorder. Additionally, one key informant stated that not having opioid treatment programs integrated into the hospital system perpetuated the existing stigma within healthcare. In other cases, key informants noted that the legal landscape within their state did not allow for drug checking or test strip distribution. This prevented both statewide surveillance efforts to track xylazine, as well as an individual’s attempts to avoid xylazine consumption through drug checking. Where legally prohibited from testing the drug supply, key informants relied on neighboring states with existing surveillance systems in place to imperfectly gauge the changing drug landscape within their state.

Key informants also noted the perceived barriers posed by the nascent market for xylazine test strips. For example, a drug sample must be tested separately for xylazine and fentanyl (using a xylazine test strip and fentanyl test strip), which complicates the testing procedure and increases the time necessary to determine a drug’s contents. Participants also mentioned the desire for test strips with increased stability and a longer shelf life, which would allow organizations to better meet the needs of people in their community.

Key Informant

“I can’t wait for the newest test strips that are going to have fentanyl and xylazine on the same test... [Right now] it’s dangerous for our folks that are injecting...the fear of being seen, being caught.”

Finally, several key informants noted that funding and cost considerations were a challenge in providing services to their community members. For example, the supplies an organization is able to distribute might vary depending on the level or timing of funding they receive, as well as the cost of the items in a kit. Additionally, organizations serving statewide populations noted the struggle with the cost of providing supplies through the mail, while others expressed concern that the high cost of naloxone might limit the number of people able to reverse an overdose.

Policy Considerations

Key informants raised a number of policy considerations that would help their organizations better address xylazine use. First, eight of nine key informants recommended expanding drug checking efforts, either through the use of additional drug checking machines or expansion of drug checking programs. This would allow for a more accurate view of the changing drug supply, as well as allow for informed decision making for people who use drugs. To mitigate some of the barriers associated with expanded drug checking, including legal prohibitions and stigma from community partners, key informants recommended federal support for state laws that allow drug checking, implementing mail-order drug testing, as well as providing funding for drug checking machines. Additionally, eight key informants expressed opposition to policies which would restrict the supply of xylazine, raising concerns that prohibition would be costly and ineffective, and simply encourage substitution towards even more risky adulterants.

Other frequent suggestions, mentioned by one third of the participants, included the importance of access to medications for opioid use disorder (MOUD) as well as introducing “safe supply.” Specifically, the practice of safe supply involves distributing pharmaceutical-grade drugs for nonclinical use, with the goal of reducing exposure to toxic adulterants present in the illicit market. Further, informants stated that MOUDs reduce illicit drug use, while safe supply reduces exposure to dangerous adulterants. Each of these efforts were thought to result in less xylazine exposure. For example, one key informant noted, “I would like to see treatment as accessible as drugs...if they’re using less of this unsafe supply, of this unknown substance, then there’s less of a chance that they’ll have xylazine wounds.” To mitigate the barriers associated with MOUD, such as prescriber requirements, participants suggested reducing the legal requirements associated with MOUD delivery. While the barriers to implementing safe supply are likely much greater, key informants pointed to successful examples elsewhere such as Canada, where safe supply has been utilized in the province of British Columbia since 2021.¹¹

Key Informants

“Limiting [xylazine]...it’s not going to fix the problem...it’s going to delay research and it’s going to cause...the next adulterant to come out.”

“The people who are creating the unregulated drug supply are very clever chemists. The more we restrict something, the more they’ll figure out ways to manufacture it.”

Other suggestions mentioned less frequently included hygiene hubs (i.e., access to toilets, showers, and clean water) to provide basic services to people in rural settings, supervised consumption sites and drug decriminalization, expanded naloxone distribution, heroin-assisted treatment, and women-only drop-in centers. Key informants were also asked about opportunities to improve the monitoring and surveillance around the presence of xylazine. Suggestions ranged from broad changes, such as a centralized website for up-to-date information, as well as mail-order drug testing, and federal support for state laws that allow drug checking.

Discussion

Several themes and areas of concern were prevalent across the interviews with respect to addressing xylazine as an adulterant in illicit drug supplies. Stigma was the most frequently cited barrier to accessing treatment, causing delays in seeking treatment, and resulting in worse health outcomes for people who use drugs. Another prominent response among key informants was the need for up-to-date, reliable information – for both people who use drugs as well as healthcare professionals. This includes guidance on recognizing and treating xylazine wounds, which may vary with route of administration and not be limited to the injection site. Key informants also stated that information on preparing wound care kits and overdose treatment protocols are greatly needed as well. At the time of interviews, information on best practices was typically gained through personal connections and informal networks, spreading from emergency room physicians and volunteers in the field towards others further away. However, information on xylazine is now more broadly available from federal agencies, state and local health departments, and private organizations. For example, several state and local health departments disseminate information on xylazine best practices, while the

¹¹ Ministry of Mental Health and Addictions. (2021). Access to prescribed safer supply in British Columbia: Policy direction. Available at: https://www2.gov.bc.ca/assets/gov/overdose-awareness/prescribed_safer_supply_in_bc.pdf

National Institute on Drug Abuse and the CDC publish detailed guidance, a comprehensive wound care guide, and additional resources for the public.^{12,13,14}

Respondents noted the importance of comprehensive drug checking to monitor the changing drug supply. While legislative changes such as legalizing test strips have reduced some of the barriers to harm reduction efforts, key informants noted the difficulties arising from not knowing what new adulterants might be in the local drug supply. Key informants also had a mixed response towards xylazine test strips: while they may be less effective in areas with widespread xylazine prevalence, other organizations could not keep up with the high demand. There was nearly universal opposition to restricting xylazine supply, either through scheduling the substance or other means. Respondents noted that previous attempts to ban substances simply created stigma and incentivized the development of new, more dangerous adulterants to enter the market. While scheduling xylazine requires either Congressional action or procedural efforts by the DEA and the Food and Drug Administration, doing so would restrict access to the drug as well as impose penalties for any violations.¹⁵ Congress has proposed a number of bills that would criminalize the illicit use of xylazine by classifying it as a schedule III drug under the Controlled Substances Act.^{16,17}

Limitations

The study has several limitations. First, the key informants we interviewed represent a small sample of subject matter experts and individuals with on-the-ground experience in the harm reduction space. The respondents were largely located in the Northeast, with one located in the West and Midwest, and none from the South. Therefore, the themes drawn from and the policy considerations raised by the interviewed sample may not reflect the experiences and needs of other communities throughout the U.S. Second, participants were drawn solely from harm reduction or affiliated organizations, and may not represent the full spectrum of experiences in dealing with xylazine, nor the range of potential policy considerations. Finally, while many of the key informants had first-hand experience in working with people who use drugs and knew those struggling in their community, we did not speak directly with individuals who use drugs or their family members. This limits the range of feedback we received on xylazine's impact, as well as policy considerations going forward.

Conclusion

This study sought to better understand how harm reduction organizations are dealing with the presence of xylazine in their communities. To gain this insight, we spoke with nine key informants from harm reduction or similar organizations across the country. Respondents reported a range of health impacts observed in their communities, as well as barriers such as stigma and misinformation that perpetuated the drug overdose crisis. They also highlighted a desire for reliable, comprehensive information on best practices and treatment protocols, and improved dissemination of this information. To better respond to future adulterants and inform people who use drugs what is in their supply, respondents noted a number of action steps focused on harm reduction and improved drug surveillance.

¹² National Institute on Drug Abuse. (2024). Xylazine. Retrieved from: <https://nida.nih.gov/research-topics/xylazine>

¹³ Centers for Disease Control and Prevention. (2023). Wound Care & Medical Triage for People Who Use Drugs and the Programs That Serve Them. Retrieved from: <https://harmreductionhelp.cdc.gov/s/article/Wound-Care-Medical-Triage-for-People-Who-Use-Drugs-and-the-Programs-That-Serve-Them>

¹⁴ Centers for Disease Control and Prevention. (2024). What You Should Know About Xylazine. Retrieved from: <https://www.cdc.gov/overdose-prevention/about/what-you-should-know-about-xylazine.html#>

¹⁵ Congressional Research Service. (2023). Xylazine: Considerations for Federal Control. Retrieved from: <https://crsreports.congress.gov/product/pdf/IN/IN12086>

¹⁶ S.993 - 118th Congress (2023-2024): Combating Illicit Xylazine Act. (2023). Retrieved from: <https://www.congress.gov/bill/118th-congress/senate-bill/993/text>

¹⁷ H.R.1839 - 118th Congress (2023-2024): Combating Illicit Xylazine Act. (2023). Retrieved from: <https://www.congress.gov/bill/118th-congress/house-bill/1839/text>

This study also presents a unique opportunity for future research, both to explore the feasibility and generalizability of the policy suggestions outlined above, as well as to track the progress of existing efforts over time. Additionally, efforts to expand outreach and education will work to reduce stigma and the harms associated with xylazine exposure. While the varied and rapidly changing drug landscape throughout the U.S. poses a challenge, an improved understanding of the participant’s experiences can play a pivotal role in addressing xylazine use and use of other emerging substances going forward throughout the country.

Appendix A: Interview Guide

Part A: Background questions

1. Please tell me about your harm reduction organization.
 - a. What is the setting of your harm reduction organization? (prompt: rurality)
 - b. What services do you offer? (prompts: syringe exchange, naloxone distribution, drug safety testing, HIV/Hep C testing, safe consumption site, harm reduction education, paraphernalia/injection kits; basic necessities, for example, socks, condom distribution, housing services, employment services)
 - c. How would you describe the clientele of your harm reduction organization? (prompts: socioeconomic status, drug of choice)
 - d. How is your harm reduction organization funded?
2. Please describe your role at the harm reduction organization.

Part B: Xylazine prevalence/impact

3. How prevalent is xylazine in your community?
 - a. When did xylazine first appear in your community?
4. What impact has xylazine had on your community?
 - a. Have you noticed certain groups of people impacted more than others?
5. How is this impact different from that of other addictive drugs?
6. How has xylazine impacted your harm reduction program clients? (prompts: Do they seek out xylazine specifically [that is, is ingestion purposeful or is xylazine mixed with other substances and people who use drugs are unaware it is in their drug supply?])
7. How has xylazine changed the way people use drugs? (prompts: methods of use, drugs of choice, amount of naloxone carried)?
8. What adverse effects do your harm reduction program clients experience from using xylazine (that is, wounds, infections, more frequent overdose)?
9. How is your organization responding to wound care needs related to xylazine exposure? (prompts: whether you find that xylazine-related wounds differ from more general injection-related wounds; What challenges you face when trying to support community members with these wounds? What would help your organization better respond to wound care needs, for example, treatment guidance?)

Part C: Responses/solutions to xylazine

10. Is your harm reduction program doing anything new or different in response to the growing prevalence of xylazine? (prompt: Is that response different than for other drugs?)
11. Can you describe any new services or trainings your program is offering to address the xylazine problem? (for example, more wound care/maintenance, provision of more naloxone and/or other overdose prevention resources since standard doses of naloxone can be ineffective in reversing effects)
 - a. For each service or training: How effective has this service/training been in mitigating the xylazine problem and adverse side effects? What, if any challenges, has your program had with implementing this service/training?
 - b. Are there any additional services that you would like to see implemented in your organization to address the threat of xylazine?
12. What are other potential responses or solutions to the xylazine problem that you can think of? [for each solution mentioned, follow-up by asking sub-questions a-b] (prompts: xylazine test strips; education about xylazine risk and harm reduction measures; naloxone distribution; medications for opioid use disorders; xylazine in formal urine toxicology tests; use of drug checking systems).

- a. What are the potential benefits?
 - b. What are the drawbacks or challenges? How could these drawbacks/challenges be prevented or managed?
13. Do any responses/solutions come to mind at the federal or policy level? (prompts: policies designed to restrict the supply of xylazine, such as making xylazine a controlled substance or implementing stricter xylazine distribution and storage requirements for veterinarians)
14. In general, what are potential barriers to addressing the threat of xylazine? (prompts: stigma, funding, paraphernalia laws)
15. Aside from funding, is there additional support that your organization needs to respond to the xylazine threat?
16. Do you have other comments or recommendations for other harm reduction organizations or policymakers about xylazine?

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