# Access to Medications for Opioid Use Disorder and Harm Reduction Services Across Rural Pennsylvania

By: Kristina Brant, Ph.D., The Pennsylvania State University, and Aden McCracken, Stanford University.

**Abstract:** Over the 21st century, communities across Pennsylvania have suffered from a deadly overdose crisis largely attributed to opioids. Fortunately, overdose deaths have begun to decline. Substance use researchers and practitioners attribute this decline to the spread of evidence-based interventions like harm reduction services and medications for opioid use disorder (MOUDs). Nonetheless, there remain considerable barriers to accessing these tools in rural areas. Continuing to slow the overdose crisis requires identifying and overcoming these barriers. This study examines access to MOUD and harm reduction services in rural Pennsylvania by triangulating the perspectives of service providers and people with living experience. We first conducted a survey with the 33 Single County Authorities (SCAs) serving rural counties and then conducted in-depth interviews with 13 MOUD providers, nine harm reduction providers, 17 criminal legal professionals, and 20 residents with living experience. We also conducted observations at four rural sites providing MOUD and/or harm reduction services. This report outlines the major findings of this study. Both residents and service providers emphasized the importance of accessing MOUD and harm reduction services for reducing overdose harms and promoting recovery. Nonetheless, there remain considerable disparities in the availability and accessibility of these services across rural Pennsylvania. Most counties still have no methadone providers and few buprenorphine providers, and many counties limit availability of MOUDs in carceral settings. Some rural SCAs do not provide drug-testing strips or overdose prevention education, and very few counties have syringe service programs. Even when services are available, residents and providers still report limited accessibility of those services. Most notably, lack of transportation, stigma, funding and insurance issues, lack of knowledge, and limited local capacity reduce accessibility for rural residents. Drawing on these findings, we provide policy recommendations to address these challenges and continue reducing overdose harms.

**Keywords:** Opioid use disorder, medications for opioid use disorder, harm reduction, rural, barriers to care, criminal legal system

This project was sponsored by a grant from the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly. The Center for Rural Pennsylvania is a bipartisan, bicameral legislative agency that serves as a resource for rural policy within the Pennsylvania General Assembly. It was created in 1987 under Act 16, the Rural Revitalization Act, to promote and sustain the vitality of Pennsylvania's rural and small communities. Information contained in this report does not necessarily reflect the views of individual board members or the Center for Rural Pennsylvania. For more information, contact the Center for Rural Pennsylvania, 625 Forster St., Room 902, Harrisburg, PA 17120, (717) 787-9555, www.rural.pa.gov.

## Executive Summary

### Introduction

Over the 21st century, communities across Pennsylvania have suffered from a deadly overdose crisis. Unlike past drug crises, rural areas were not spared. Instead, rural counties in Pennsylvania have seen some of the highest overdose death rates in the state. Fortunately, overdose deaths have begun to decline, in part due to the spread of evidence-based interventions like medications for opioid use disorder (or MOUDs, e.g., buprenorphine and methadone) and harm reduction services (e.g., naloxone, drug-testing strips, and syringe service programs (SSPs)). Nonetheless, there remain considerable barriers to accessing these tools in rural areas, including lack of providers, stigma, lack of transportation, and high costs. These barriers are heightened for rural residents with other vulnerabilities, such as criminal legal involvement.

Nonetheless, gaps in the literature remain. Existing studies typically do not triangulate across viewpoints, do not focus on communities that are "rural" according to governmental definitions, and do not consider differences across rural places. There is also a dearth of research focused on the specific needs of rural Pennsylvania. To fill these gaps, this study aims to examine the current availability and accessibility of MOUD and harm reduction services across rural Pennsylvania.

### Methods

This study employs a multi-method research design. First, to map the availability of MOUD and harm reduction services, we conducted a survey with all Single County Authorities (SCAs) serving rural counties. Surveys were collected during summer and fall 2024, and we achieved a 100-percent response rate (33/33). This survey asked about SCAs' MOUD funding practices, local jail MOUD programs, and local treatment courts' MOUD practices. We did not collect information on harm reduction availability, as a similar survey was conducted by the Pennsylvania State Epidemiological Outcomes Workgroup (SEOW) in spring 2024; we instead include a summary of those results.

Second, to assess accessibility of MOUD and harm reduction services, we conducted in-depth interviews with four types of stakeholders in rural counties. Participants included MOUD providers (*n*=13), harm reduction providers (*n*=9), criminal legal professionals (*n*=17), and people with living experience using MOUDs and/or harm reduction services (*n*=20). Interviews focused on rural barriers to care lasted approximately one hour and took place over the phone or via Zoom from summer 2024 through spring 2025. We also visited four sites providing MOUD and/or harm reduction services to observe the barriers discussed in interviews. Following data collection, we conducted a thematic analysis to identify recurring themes.

### Results

Despite recent decreases in overdose deaths, participants stressed the need to further expand MOUD and harm reduction services. Our surveys, interviews, and

secondary data analysis point to disparities in availability of these services between urban and rural counties in Pennsylvania. Specifically, in rural counties, we find:

- *Disparate availability of methadone and buprenorphine.* Two-thirds of rural counties have no methadone providers, and buprenorphine providers remain limited, which are regarded as the two most effective medications used in MOUD treatment. Lack of rural providers is perpetuated by lack of community buy-in.
- *Disparate availability of MOUDs in criminal legal settings.* One-third of rural counties do not have treatment courts, and roughly one-half of rural treatment courts do not facilitate MOUD inductions. Roughly one-sixth of rural county jails do not offer buprenorphine to anyone, and two-thirds offer buprenorphine only to those entering jail already in MOUD treatment. Nearly one-half of rural county jails do not offer methadone.
- *Disparate availability of harm reduction tools and services.* While all rural SCAs provide naloxone, one-quarter do not provide testing strips and/or harm reduction education. Many rural SCAs are constrained by limited staff and funding capacity, as rural SCAs are less likely than urban SCAs to receive state and county funding for harm reduction. Only two rural counties have SSPs.

Even when MOUD treatment and harm reduction services are available, they may not necessarily be accessible. Interview participants identified common barriers to access across Pennsylvania's rural counties:

- *Lack of transportation.* Many rural residents in need of MOUD and harm reduction services do not have access to personal transportation. Medicaid van services are beneficial but not sufficient. Mobile treatment is desired but still rare in rural areas. Many rural MOUD providers are moving away from the use of telehealth.
- *High stigma.* Persistent stigma towards MOUD and harm reduction—especially among family members and law enforcement—limits rural residents' willingness and ability to approach needed services.
- *Funding and insurance issues.* SCA funding for MOUD treatment is a lifeline for the uninsured, but there is a lack of awareness of this funding and limitations on its uses.
- *Lack of knowledge and visibility.* There is a lack of knowledge about what MOUD and harm reduction services exist in rural communities and where to access them.
- *Limited local capacity.* In many rural counties, SCAs are the only entities doing harm reduction work, and small SCAs may not have the capacity to widely distribute harm reduction tools across businesses and community institutions.
- *Lack of access to supportive resources*. There is a lack of recovery housing (and affordable housing generally) in rural communities—a basic need that is important for sustained MOUD treatment engagement.

- *Inflexibility in MOUD treatment*. Rural methadone providers have been slow to adopt updated state and federal guidelines that allow for greater take-home methadone doses.
- *Child welfare involvement*. Fear of Children and Youth Services (CYS) involvement limits rural parents' willingness to seek MOUD and harm reduction services.
- *Criminal legal system involvement*. Many rural county jails impose strict rules about who may receive MOUD treatment, and some discharge people from MOUD treatment for behavioral transgressions.
- *Identification issues.* Some rural residents may lack necessary identification to begin MOUD treatment due to transiency or homelessness.

**Policy Considerations**

Drawing on our findings, we then outline policy recommendations at the state and local levels. To expand access to MOUD treatment in rural Pennsylvania, we suggest:

- *Expanding mobile services and integrated care models*. To increase the number of providers prescribing MOUDs in rural areas, the Department of Drug and Alcohol Programs (DDAP) could support the licensing of mobile van services, and the Department of Health (DOH) could support rural primary care providers in beginning to prescribe buprenorphine.
- *Increasing awareness of transportation programs, creating new transportation options, and providing telehealth training.* To lower transportation-related barriers, local governments could increase awareness of Medicaid van programs, DDAP could support rural MOUD providers in purchasing their own vans, and DDAP and DOH could provide education to expand telehealth use among rural providers.
- *Expanding SCA funding flexibility and preparing for changes to Medicaid.* To lower financial barriers, DDAP could assist SCAs in enhancing the flexibility of their treatment funding. The state could also consider how to ensure continuity of MOUD treatment for rural residents who may lose Medicaid coverage in coming years.
- *Expanding education on MOUDs*. To reduce high MOUD-related stigma in rural areas, DDAP, DOH, and the Department of Labor and Industry (L&I) could incorporate MOUD education in their stigma reduction trainings, and rural SCAs could help establish recovery support groups that are accepting of MOUDs.
- *Expanding recovery housing*. As stable housing is crucial for MOUD treatment engagement, local governments in rural counties could assess the need for recovery housing and assemble local agencies to establish programs.
- *Calling in Children and Youth Service (CYS)*. To improve support of MOUDs among CYS agencies, local rural governments could invite CYS into local overdose coalitions, and DDAP could develop CYS-specific education.

- *Supporting opioid treatment programs' (OTPs') uptake of new recommendations*. To encourage the uptake of new federal and state guidelines regarding take-home methadone doses, DDAP could provide technical assistance to rural OTPs.
- *Expanding MOUD access in county jails and treatment courts*. To ensure compliance with the American Disabilities Act (ADA), the state could work towards a legislative mandate of providing both buprenorphine and methadone in county jails. The state must also consider how to provide adequate funding and training to help rural jails implement MOUD programs. Treatment courts could include education about MOUD treatment in ongoing case management services.

To expand access to harm reduction services in rural Pennsylvania, we suggest:

- *Expanding the Good Samaritan Law*. To empower people to call law enforcement or emergency medical services amid an observed overdose, the Good Samaritan Law could be expanded to protect against arrest during these circumstances.
- *Legalizing Syringe Services Programs (SSPs)*. To enable communities to quell the spread of HCV (i.e., hepatitis C) and HIV, the legislature could amend the Controlled Substance, Drug, Device, and Cosmetic Act to legalize SSPs.
- *Expanding naloxone and testing strip distributions and increasing local capacity*. To increase availability of harm reduction tools, rural SCAs could collaborate with nontraditional settings like libraries and food pantries to host NaloxBoxes or vending machines holding both naloxone and testing strips. Smaller rural SCAs with limited capacity could create local harm reduction boards to empower community members to distribute naloxone and testing strips.
- *Providing harm reduction trainings*. To improve understanding of harm reduction practices, rural SCAs could host trainings on overdose prevention. DDAP could host virtual trainings in counties where SCAs have limited capacity.
- *Expanding education on harm reduction*. To reduce heightened rural stigma towards harm reduction, DDAP, DOH, and L&I could incorporate information on harm reduction tools outside of naloxone in their stigma reduction trainings.
- *Expanding transportation services for harm reduction.* To reduce high transportation barriers in rural counties, DHS and county transportation services could allow people with opioid-use disorder (OUD) to use Medicaid van services for harm reduction services and recovery support.

## Table of Contents

## Table of Figures

## Table of Tables

## Introduction

Across the United States, communities have suffered from a deadly overdose crisis that has escalated over the 21st century. From 1999 to 2023, overdose deaths nearly quintupled, jumping from 6.1 to 31.3 deaths per 100,000 (Hedegaard 2017; Garnett 2024). In 2023 alone, over 105,000 people died of an overdose (Garnett 2024). Pennsylvania has long had one of the higher overdose death rates across all states (Hedegaard 2017). In 1999, 990 Pennsylvanians died of an overdose; in 2023, 4,717 died (Commonwealth of Pennsylvania 2025). In a recent survey of 1,033 Pennsylvanians, 60 percent considered the overdose crisis a serious problem in their community (Kaynak et al. 2022).

The overdose crisis has not spared a single demographic, although some groups have borne the brunt of its impact. In Pennsylvania, in 2023, men died at a rate over twice that of women (52 deaths vs. 21 deaths per 100,000) (Pennsylvania Department of Health 2024). Black Pennsylvanians had the highest death rate, followed by Hispanic and white Pennsylvanians (76, 41, and 30 deaths per 100,000, respectively) (Pennsylvania Department of Health 2024). Finally, adults aged 35 to 44 had the highest death rate (74 deaths per 100,000), followed by those aged 45 to 54 (68), those aged 55 to 64 (57), and those aged 25 to 34 (54) (Pennsylvania Department of Health 2024). Furthermore, drug overdose continues to be the leading cause of death for people aged 18 to 44 (CDC 2025a).

Public health researchers describe the overdose crisis in four waves. The first wave was marked by the use of prescription opioids such as oxycodone, due to aggressive marketing by pharmaceutical companies and overprescription by health care providers (CDC 2011). By the early 2010s, providers reigned in prescriptions; however, prescription opioids were replaced by more accessible illicit alternatives like heroin, marking the second wave (CDC 2014, 2017). The mid-2010s ushered in the third wave with the proliferation of synthetic opioids like fentanyl and fentanyl analogs in the U.S. drug market (O'Donnell, Gladden, and Seth 2017). We are now in the fourth wave—where deaths caused by opioids also involve non-opioids, such as benzodiazepines, sedatives like xylazine, and stimulants like methamphetamine (Jenkins 2021). In Pennsylvania, 84 percent of overdose deaths in 2023 involved an opioid, typically fentanyl; over half of those deaths also involved a stimulant (Pennsylvania Department of Health 2024).

While past drug crises have largely spared rural America, this has not been the case during the present overdose crisis (Rigg, Monnat, and Chavez 2018). In 2023, 16 counties in Pennsylvania had overdose death rates higher than the state average; nine of these 16 counties are rural (Pennsylvania Department of Health 2024). Researchers suggest that rural communities were particularly vulnerable to the overprescription of opioids due to high rates of work-related injuries and chronic pain (Keyes et al. 2014; Monnat and Rigg 2018). Simultaneously, the Great Recession ushered in growing economic disadvantage for rural communities (Keyes et al. 2014; Monnat 2018). Just as prescription opioids were proliferating for physical health ailments, mental health

ailments increased rural residents' likelihood of self-medicating with opioids (Monnat and Rigg 2018). Even when prescription rates dropped, demand for opioids in rural areas remained high, creating new markets for illicit opioids. Researchers suggest that many rural communities are now in a cycle of trauma: community traumas like economic distress fueled a turn to opioid use, and the resulting overdose crisis has amplified those traumas (Schalkoff et al. 2021).

Fortunately, overdose death rates have started to decline. From December 2023 to December 2024—the most recent provisional national data—there were about 80,000 drug overdose deaths; during the 12-month period prior (December 2022 to December 2023), there were 110,000 (CDC 2025b). The decline in Pennsylvania started even before this national decline; deaths peaked at 5,356 in 2021 and have slowly declined since (Commonwealth of Pennsylvania 2025). From December 2022 to December 2023, there were 4,870 deaths in Pennsylvania; from December 2023 to December 2024, there were 3,358 (CDC 2025b). This amounts to a 27-percent decrease in deaths across the U.S. and a 31-percent decrease in the state. Public health researchers and practitioners attribute much of this decline to the spread of evidence-based, life-saving interventions—namely, harm reduction services and medications for opioid use disorder (MOUDs) (CDC 2025a).

Even when overdose does not lead to death, it can still perpetuate long-lasting health consequences, including organ damage, chronic health conditions, and other limiting disabilities (Winstanley et al. 2021). These deaths and health consequences do not only impact individuals' quality of life but also have reverberating impacts on the economic and social well-being of rural families and communities (Hazlett 2018; Monnat 2020). Thus, continuing to expand and ensure timely and widespread access to MOUD and harm reduction services remains a policy imperative. This report reviews the current availability and accessibility of MOUD and harm reduction services across counties in rural Pennsylvania.

**Medications for Opioid Use Disorder**

MOUDs have emerged as an important tool for helping individuals treat opioid use disorder (OUD) and sustain recovery.[1] MOUD use can increase treatment retention, decrease overdose risk, decrease risk of contracting HIV or hepatitis C (HCV), and improve patients' ability to maintain employment (Fullerton et al. 2014; Hoang and Sledge 2022; Reuter et al. 2022; SAMHSA 2024d; Sun et al. 2022). For pregnant women, MOUDs also improve health outcomes for both mothers and infants (Ganetsky,

[1] The term "medication-assisted treatment" (MAT) is often used to refer to treatment that involves the use of MOUDs. However, the National Institutes of Health holds that "MAT" is a stigmatizing term, as it implies that medications are supplemental and should not be used without counseling (NIDA 2021b). While most treatment programs do prescribe MOUDs in combination with counseling, scientific evidence suggests that MOUDs can be useful even without ancillary counseling. Thus, in this report, access to MOUDs refers to access to these medications in any form of treatment plan, whether that includes counseling or not.

Krawczyk, and Kennedy-Hendricks 2025; Krans et al. 2021; SAMHSA 2024d). And for incarcerated individuals, MOUDs can lower recidivism and improve chances of survival upon release, when overdose death risk is high (Evans, Wilson, and Friedmann 2022; Martin et al. 2023).

The U.S. Food and Drug Administration has approved three main medications for OUD treatment—methadone, buprenorphine, and naltrexone; research shows all three medications are safe for long-term use (SAMHSA 2024d). The uses of buprenorphine and methadone are known as opioid agonist therapy. Methadone is a full opioid agonist, meaning it binds to the same opioid receptors as heroin or fentanyl (NIDA 2025). Compared to these other opioids, however, methadone acts slower. Thus, while methadone can also produce feelings of pleasure or euphoria, these feelings are less intense. Buprenorphine is a partial agonist, meaning it also activates opioid receptors, but to a lesser degree (NIDA 2025). Both methadone and buprenorphine treat OUD by reducing cravings for other opioids and reducing withdrawal symptoms.

Methadone is taken in liquid form and is only prescribed and dispensed through specific clinics called opioid treatment programs (OTPs) (NIDA 2025). When people start methadone treatment, they must typically visit an OTP every day. However, as treatment progresses, patients may receive doses to take home. The Substance Abuse and Mental Health Services Administration (SAMHSA) has recently relaxed regulations, allowing methadone patients to receive greater numbers of take-home doses (SAMHSA 2024c). SAMHSA allows patients to receive up to seven days of take-home doses within the first two weeks of treatment, up to 14 doses after two weeks, and up to 28 doses after one month. Research shows that increased flexibility for take-homes has improved treatment retention and patient outcomes (Kawasaki et al. 2023; Levander et al. 2021). Nonetheless, OTPs set their own timelines for take-home dosing within SAMHSA's guidelines; thus, in practice, receiving take-homes may take much longer in certain OTPs.

Buprenorphine is more widely accessible than methadone. Buprenorphine is delivered as a daily sublingual tablet (brand name: Subutex) or as a monthly injectable (brand name: Sublocade) (Poliwoda et al. 2022). Another common formulation combines buprenorphine and naloxone into a daily sublingual film (brand name: Suboxone) (Poliwoda et al. 2022). Buprenorphine can be prescribed by doctors, nurse practitioners, and physician assistants and dispensed at pharmacies (NIDA 2025). However, not every health care practice offers buprenorphine; buprenorphine prescription still occurs mainly at substance-use treatment facilities, and prescriptions through primary care settings are rarer. Recently, SAMHSA expanded buprenorphine access by allowing providers to initiate buprenorphine treatment via telehealth (SAMHSA 2025). Research shows that telehealth initiation is associated with increased retention in treatment (Hammerslag et al. 2023; Nguyen et al. 2024). However again, individual facilities establish their own telehealth policies, and many may choose not to offer buprenorphine via telehealth.

Unlike methadone and buprenorphine, naltrexone is an opioid antagonist, meaning it blocks the activation of opioid receptors and prevents opioids from producing euphoric effects (NIDA 2025). Naltrexone is available via a monthly 30-day injectable (brand name: Vivitrol), and it can also be prescribed and provided by any health care provider. Compared to methadone and buprenorphine, there is less evidence regarding the efficacy of naltrexone (Connery 2015; Wakeman et al. 2020). Thus, ensuring people have access to all three medications, not just naltrexone, is essential.

Despite the proven effectiveness of MOUDs in improving outcomes for people with OUD, the uptake of MOUDs is quite low. In 2022, the most recent year for which these data exist, only 25 percent of adults who needed OUD treatment received MOUDs (Dowell et al. 2024). The underutilization of MOUDs in rural areas is particularly stark. Stopka et al. (2024) report that, in 2020, among the 2.8 million people requiring substance use disorder (SUD) treatment in the rural U.S., only a few thousand (0.2 percent) received MOUDs. These statistics underscore the need for further research on barriers to care in rural areas and the development of policy and program interventions to overcome them.

**Harm Reduction Services**

The overdose crisis has also shed light on the crucial role of harm reduction tools and services in reducing the incidence of harm among people who use drugs. Harm reduction strategies are distinct from treatment or recovery support, as their primary purpose is to reduce the health and safety issues associated with substance use (NIDA 2022a). While overdoses and overdose deaths are a top concern, these are not the only harms associated with opioid use today. Illicit opioid use can increase the risk of contracting HIV, HCV, and bacteria that cause heart infections, primarily due to contaminated injection drug equipment (CDC 2024). Another growing concern is severe wounds associated with xylazine, a non-opioid sedative increasingly detected in the illicit opioid supply (NIDA 2022c). These wounds can lead to severe pain, infection, and limb amputation.

A number of harm reduction tools and services can effectively reduce these harms. First is naloxone, a medication that can rapidly reverse an overdose to prevent death. Naloxone works as an opioid antagonist that attaches to opioid receptors to block other opioids (NIDA 2022b). Naloxone can be delivered via a nasal spray (brand name: Narcan) or injected into a muscle or vein.[2] Naloxone distribution is often paired with education to ensure that people can identify the signs of an overdose and correctly administer naloxone. Research shows that community naloxone distributions and education indeed reduce the incidence of overdose deaths (Fischer et al. 2025; Naumann et al. 2019).

[2] While injectable naloxone is less widely distributed than intranasal, evidence suggests it may be more effective, pointing to the need for increased access to this formulation specifically (Skulberg et al. 2022).

While naloxone reduces the chance that an overdose leads to death, other harm reduction tools can reduce the risk of overdose itself. Opioids containing fentanyl are responsible for a majority of overdose deaths due to their potency (Pennsylvania Department of Health 2024). When present in combination with fentanyl, xylazine can make overdose reversal especially challenging, as it is resistant to naloxone (NIDA 2022c). Fentanyl and xylazine test strips are small strips of paper that can detect fentanyl and xylazine in a sample of drugs (SAMHSA 2024a). Test strips offer people the opportunity to know what is in their supply and act accordingly to reduce their overdose risk. Research shows that people are not only quite willing to use test strips but are also highly likely to change their drug-use behavior after receiving a positive result—for example, by using less or administering a test shot (Krieger et al. 2018; Peiper et al. 2019).[3]

A third key harm reduction service is syringe service programs (SSPs), which provide sterile syringes and other injection equipment. SSPs reduce the need to share used syringes, thereby reducing people's chance of contracting infectious diseases (NIDA 2021a). Research shows that SSPs can reduce HIV transmission (Aspinall et al. 2014; MacDonald et al. 2003), HCV transmission (Abdul-Quader et al. 2013; Platt et al. 2017), and incidence of endocarditis (Bahji, Yanagawa, and Lamba 2020). These health benefits are greatest when SSPs do not place restrictions on the number of syringes people can receive (Bluthenthal et al. 2007; Kerr et al. 2010). While opponents often suggest SSPs increase litter of syringes, research shows the opposite: one study found more improperly disposed syringes in cities without SSPs than in those with them (Tookes et al. 2012).

In this report, we focus on naloxone, testing strips, and SSPs as key harm reduction tools and services that reduce overdose, overdose death, and transmission of infectious disease. However, harm reduction programs may also offer other crucial tools and services, including wound care kits; sterile injection supplies; safer smoking and snorting supplies; safer sex kits; educational materials on safer injection, smoking, and snorting practices; HIV/HCV testing; linkage to medical and social services; and basic needs like food and water (SAMHSA 2024b). Additionally, overdose prevention centers (OPCs) allow people to use illicit substances under the supervision of trained staff (NIDA 2023). While OPCs offer a promising strategy to reduce overdose deaths, we focus on tools and services that have a more robust evidence base yet are still underutilized.

While harm reduction programs primarily aim to serve people where they are at, they can also act as a connector to treatment (Frost et al. 2018). For example, research shows that people who inject drugs who participate in SSPs are more likely to enter treatment than those who do not participate in such programs, especially in rural areas

[3] While fentanyl and xylazine test strips are most common, the emergence of nitazenes (an opioid ten times as potent as fentanyl), benzodiazepines, and other non-opioids (e.g., medetomidine) in the illicit opioid supply necessitates a similar push to make other drug-testing strips more widely available (Larweh 2024).

(Hagan et al. 2000; Surratt et al. 2020). Thus, expanding access to MOUD and harm reduction services are not contradictory approaches; these two strategies can work hand-in-hand to reduce opioid-related harms.

Just as with MOUDs, research suggests the use of harm reduction tools and services is less prevalent in rural areas as compared to urban areas. One recent study, for example, found that people who use opioids in rural Western Oregon were about half as likely to carry naloxone as those in Portland, Oregon (Lipira et al. 2021). Another study found that people who inject drugs in rural Maine were about half as likely to use an SSP as those in urban Maine (Miller et al. 2024). In the next section, we review existing research on barriers to accessing MOUDs and harm reduction services in rural areas.

**Barriers to MOUD and Harm Reduction Services in Rural Communities**

Rural communities have seen disproportionate increases in opioid use in recent decades (Palombi et al. 2018). Yet because past opioid use was largely concentrated in urban areas, rural communities were underprepared for the current overdose crisis (Jenkins and Hagan 2020). Consequently, rural residents experience unique barriers to accessing MOUD and harm reduction services today (Ibragimov, Young, and Cooper 2020; Thomas, van de Ven, and Mulrooney 2020).

First, the availability of MOUD and harm reduction services remains low in rural communities. A recent study in Pennsylvania found that buprenorphine provision is still rare in rural primary care practices (Bridges et al. 2023). Availability of methadone is especially low in rural areas; nationally, only four percent of OTPs are located in rural areas (Krawczyk, Joudrey, et al. 2023). Rural harm reduction programs are also limited; for example, only 20 percent of SSPs in the U.S. are in rural counties (Des Jarlais et al. 2015; Kim and Harley 2019). Local availability matters for service access; lack of local MOUD providers is the most commonly cited barrier to MOUD treatment engagement (Lister et al. 2020).

One prominent reason for low availability is high stigma. Research shows stigma towards MOUD treatment and harm reduction is higher in rural areas than in urban (Davis et al. 2023). In a recent survey based in Pennsylvania, only one-half of 1,033 respondents said they would be willing to obtain naloxone, one-quarter think methadone is effective, and less than one-quarter think buprenorphine is effective (Kaynak et al. 2022). Widespread stigma towards MOUDs can limit providers' willingness to prescribe MOUDs and pharmacies' willingness to dispense them (Andrilla, Coulthard, and Larson 2017; Cooper et al. 2020; Dickson-Gomez et al. 2022; Lister et al. 2020; Winstanley et al. 2022). Community stigma can also limit the availability of harm reduction programs (Baker et al. 2020; Hanson et al. 2024). In a recent survey of 252 rural Pennsylvanians, high stigma was associated with less support for naloxone distributions, fentanyl test strip distributions, and SSPs (Whipple et al. 2023). Community support matters, as political resistance and a lack of local funding can prevent harm reduction programs from opening (Childs et al. 2021; Montaque et al. 2023; Showers et al. 2021).

Even when MOUD and harm reduction services are present in rural communities, accessibility barriers may exist. One recent study in Pennsylvania found lack of transportation impeded access to MOUD, particularly in rural settings (Skogseth et al. 2025). Those without personal transportation are limited by a lack of public transportation, but even for those with transportation, longer travel distances require more money and time (Bunting et al. 2018; Stopka et al. 2024). This barrier is especially obtrusive for those seeking methadone (Morenz et al. 2025; Pasman et al. 2022). Another common barrier to MOUD access is cost (Bridges et al. 2023; Lister et al. 2020; Skogseth et al. 2025). For those without Medicaid, high deductibles can make the cost of MOUD prohibitive (Bunting et al. 2018). Stigma can also serve as an accessibility barrier. Fears of facing stigma from both providers and others in their social networks can reduce people's willingness to seek MOUD and harm reduction services (Abadie et al. 2018; Ibragimov et al. 2021; Stopka et al. 2024; Weger et al. 2024). Fear of stigma from law enforcement and emergency medical services (EMS) can also encourage riskier drug use behaviors (Abadie et al. 2018; Cloud et al. 2019; Fadanelli et al. 2020; Garcia et al. 2023). One recent study in Pennsylvania showed lack of knowledge about harm reduction and community stigma towards harm reduction limit engagement with such programs (Harrison et al. 2024).

These availability and accessibility barriers are heightened for rural residents who also face other vulnerabilities. First, MOUD and harm reduction utilization is particularly low among rural incarcerated populations (Hoover et al. 2023; Staton et al. 2024). One driving factor for this disparity is that MOUDs remain largely unavailable in many rural jails in Pennsylvania (Bellos 2024; Strong-Jones et al. 2024). Second, rural communities may lack providers who are willing to serve pregnant patients or have the specialized knowledge to do so (Apsley et al. 2024; Kelley et al. 2022; St. Louis et al. 2022). Rural women may also be more concerned about stigma or potential child welfare involvement if they seek services (Brant 2025; Choi et al. 2022). Finally, rural providers may lack capacity to serve patients with co-occurring physical and mental health issues or manage intensive wound care associated with xylazine use (Carroll 2024; Snell-Rood et al. 2017).

**Relevant Laws and Policies in Pennsylvania**

State and local governments play a key role in shaping the availability and accessibility of MOUD and harm reduction services in rural areas. Here, we introduce the major laws, policies, and programs relevant to MOUD and harm reduction access in Pennsylvania.

*Laws and Policies Concerning Harm Reduction Services*

State laws and policies determine the legality of harm reduction practices (Network for Public Health Law 2024). In Pennsylvania, the "Naloxone Access Law" (35 Pa. Cons. Stat. § 780-113.8) holds that naloxone can be prescribed to anyone at risk of overdose, that law enforcement and fire companies may administer naloxone, and that anyone who administers naloxone has civil and criminal immunity. The Naloxone Standing Order (DOH-001-2025) holds that pharmacists can dispense naloxone and that community organizations can distribute naloxone. Research shows these laws increase naloxone access and are associated with lower overdose mortality (Smart, Pardo, and Davis 2021).

Another relevant law is the "Good Samaritan Law" (35 Pa. Cons. Stat. § 780-113.7), which holds that a person cannot be charged or prosecuted with drug or paraphernalia possession crimes if the evidence was discovered when transporting someone to a hospital or calling law enforcement or EMS amid an overdose. This law can connect overdose victims to help, but its impact is limited when people are not familiar with the law or do not trust law enforcement (van der Meulen and Chu 2022).

Next, the Controlled Substance, Drug, Device, and Cosmetic Act makes the use, possession, and delivery of drug paraphernalia for the purpose of injecting, inhaling, or otherwise using a controlled substance illegal (35 Pa. Cons. Stat. § 780-113). There is an exception for drug-testing strips. The Act (35 Pa. Cons. Stat. § 780-102) notes that "testing products utilized in determining whether a controlled substance contains chemicals, toxic substances, or hazardous compounds in quantities which can cause physical harm or death" are not considered drug paraphernalia. Research shows that such decriminalization of testing strips is associated with lower drug overdose deaths (Bhai, McMichael, and Mitchell 2025). However, there is no similar exception for SSPs.[4]

State and local government agencies also play key roles in implementing harm reduction programs. Pennsylvania's Department of Drug and Alcohol Programs (DDAP) runs the Overdose Prevention Program, which provides naloxone and fentanyl and xylazine test strips to 107 organizations across the state. Many of these organizations are Single County Authorities (SCAs), the local drug and alcohol offices which acquire state and federal funding through DDAP and the Pennsylvania Department of Human Services (DHS) to plan and implement prevention, intervention, and treatment services at the local level. While DDAP develops a state plan for drug and alcohol programs, SCAs execute this state plan and develop a local plan (PACDAA n.d.). Both DDAP and SCAs can devote the resources they have to specific harm reduction initiatives.

[4] While SSPs are not permitted by the state, some local governments have provided authorizations for SSPs in specific localities.

*Laws and Policies Concerning MOUD Treatment*

State laws and policies also shape MOUD access by expanding or constraining barriers related to cost and service delivery. First, the state determines who is eligible for Medicaid and what services are covered by public and private health insurance policies. Medicaid is administered by DHS and covers many people seeking substance use treatment (Shoulders et al. 2023). Pennsylvania has expanded Medicaid, meaning low-income adults without dependent children are eligible. Pennsylvania Medicaid covers MOUD treatment for all beneficiaries "meeting medical necessity criteria." It requires minimal cost-sharing and does not require prior authorization. These reduced restrictions are associated with higher treatment utilization (Andrews et al. 2019; Olfson et al. 2018). Pennsylvania also requires private insurers to provide coverage for at least one FDA-approved MOUD without prior authorization at the lowest non-preventive cost tier (1921 Act 284 Chapter 21 Section 57). For those without insurance, SCAs fund MOUD treatment. While this funding comes from DDAP, SCAs can set caps on funding per individual and establish contracts with specific local providers where funding can be used.

Second, the state shapes access to transportation for medical appointments. DHS manages the Medical Assistance Transportation Program, which provides non-emergency medical transportation for Medicaid beneficiaries to get to health care appointments or pick up prescriptions. This service has been shown to expand treatment access (Boyd, Carter, and Baus 2024). For those without Medicaid, county transportation offices may offer shared ride services for medical appointments; however, some counties may restrict these services to older adults and those with disabilities.

Third, DDAP, as the agency that licenses and regulates treatment providers, can enhance treatment flexibility. DDAP recently amended regulations to allow providers to initiate MOUD treatment via telehealth (28 Pa. Code § 715.9). Patients must have an in-person exam within 14 days after beginning telehealth treatment to continue. The state permits audio-only services for buprenorphine but requires video for methadone. These are only guidelines; providers can still impose stricter restrictions regarding telehealth use at their own discretion (Poulsen et al. 2023). Medicaid covers telehealth at the same reimbursement rates as in-person services. Pennsylvania prevents private insurance providers from excluding coverage for telehealth, but reimbursement rates may vary. DDAP has also recently relaxed guidelines specific to methadone treatment. OTPs now have greater control to determine when patients receive take-home medications (28 Pa. Code § 715.16); are not required to provide mandatory minimum amounts of counseling and cannot turn patients away for refusing counseling (28 Pa. Code § 715.16); and must only conduct random drug screens at minimum eight times a year, as opposed to 12 (28 Pa. Code § 715.14). Research shows these relaxations can improve treatment initiation and retention (Adams et al. 2023; Krawczyk, Rivera, et al. 2023; McCracken et al. 2024).

Fourth, state and local governments decide what MOUDs are available in jails and prisons. The Department of Corrections (DOC) offers individuals in state prisons the

opportunity to begin treatment with buprenorphine or naltrexone and to continue treatment with methadone, if they were presently in a methadone program when becoming incarcerated. County governments set treatment protocols for their county jails. There is wide variation in what forms of MOUD are available, and for whom they are available, at county jails across Pennsylvania (Bellos 2024). Nonetheless, there have been recent judicial actions that are changing the landscape of MOUD in jails. Recently, the U.S. Department of Justice (DOJ) ordered specific jails in Pennsylvania to evaluate individuals for OUD and provide MOUDs when appropriate, finding that the denial of MOUDs is a violation of the Americans with Disabilities Act (ADA) (Office of Public Affairs 2023). Act 80 set up a state-funded grant program to assist county jails in funding MOUD treatment; presently, this funding can only be used to purchase naltrexone.

Fifth, many local judicial systems in Pennsylvania operate "drug courts" or "treatment courts" for people with SUDs. These programs combine judicial supervision, treatment, and drug testing and are used as an alternative to incarceration. In addition to typical legal actors (i.e., judges, prosecutors, and defense attorneys), these programs include treatment providers and often peer support specialists. This team works together to support clients in the program. There are important critiques of the drug court model and the ways it intertwines medical treatment and criminal punishment (Murphy 2012; Revier 2021). However, compared to incarceration, research shows drug courts can support better long-term outcomes for people with SUDs (Gottfredson, Najaka, and Kearley 2003). A recent lawsuit found some local court systems in Pennsylvania were violating the ADA by requiring people to cease the use of MOUDs. The U.S. DOJ ordered that the Pennsylvania Unified Judicial System train all criminal court judges and treatment court professionals on the ADA and MOUD (Friedman 2024). Several specific courts must also adopt an anti-discrimination policy about MOUD, and others are encouraged to adopt it.

Sixth, DDAP, the Department of Labor and Industry (L&I), the Department of Health (DOH), and SCAs implement continuing education programs that shape knowledge and understandings of OUD and recovery. DDAP is part of the statewide campaign "Life Unites Us," which shares stories of recovery via social media. Research shows this program can reduce stigma (Whipple et al. 2024). Many SCAs also lead anti-stigma activities in their communities, and both DDAP and SCAs offer trainings for treatment providers, law enforcement, and other professionals. While these trainings and activities do not necessarily include education on MOUDs, they may. Such trainings can reduce general OUD and MOUD-related stigma (Bielenberg et al. 2021; Victor et al. 2022). L&I recently launched a program for employers on recovery-friendly workplace practices, including a module on MOUDs. Such trainings can improve employers' understandings of OUD and MOUDs to establish policies conducive to employees' well-being (Noga, Straube, and Els 2025). DOH operates the Pennsylvania Substance Use Navigation Program, which offers funding and technical assistance for emergency departments to

distribute naloxone and link patients to MOUD treatment. DOH also offers continuing education for other health care providers, which can enhance understanding of MOUDs among clinicians.

*The Opioid Settlement in Pennsylvania*

Opioid settlement funds offer a new avenue to expand access to MOUD and harm reduction services at the state and local level. Pennsylvania was awarded approximately $2 billion through a series of settlements with opioid manufacturers, distributors, and pharmacies (PA Opioid Misuse and Addiction Abatement Trust n.d.). These funds will be paid out gradually through 2040, with 70 percent going to county governments, 15 percent to other litigating entities (e.g., township governments), and 15 percent to DDAP. Funds can be used for treatment, prevention, recovery support, harm reduction training and education, and research (Office of the Attorney General 2021). Both DDAP and local governments have considerable discretion over their use of funds, and local governments can allot funds to a wide array of recipients, including county agencies, health care providers, and community organizations. These funds offer a significant opportunity to create and expand interventions that broaden access to services in rural communities.

**Overview of the Study**

In this study, we examine the current availability and accessibility of MOUD and harm reduction services across rural Pennsylvania. We first leverage surveys with Single County Authorities (SCAs) to examine several measures of MOUD and harm reduction service availability within each rural county. We map the availability of MOUD and harm reduction services alongside data on overdose deaths and HIV/HCV prevalence to identify counties with high-risk environments (i.e., high need and limited services). We then leverage interviews with criminal legal professionals, service providers, and people with living experience to identify the barriers that rural residents face in accessing MOUD and harm reduction services and the limitations that professionals and providers face in providing care. Ultimately, results point to geographic disparities in MOUD and harm reduction availability across rural Pennsylvania and identify rural-specific barriers that impede rural providers and residents from providing and accessing necessary care.

## Methods

As described above, this study aims to assess the current availability and accessibility of MOUD and harm reduction services across rural Pennsylvania. This framework acknowledges that availability of services—whether a service exists—does not equate to accessibility of services—whether residents can physically access those services and whether they feel comfortable doing so (Hicks 1990). It also acknowledges that accessibility of services can vary across the local population, for example, by social and economic statuses (Tzenios 2019). This study first determined *what* services are

available in rural Pennsylvania counties and then determined *how* accessible these services are to rural residents. A multi-method research design was employed. All procedures were approved by the Penn State Institutional Review Board, and a Certificate of Confidentiality was received from the National Institutes of Health.

**Mapping Availability of Services**

In order to map the availability of MOUD and harm reduction services across the state, we first conducted a survey with SCAs serving rural counties.[5] There are 33 SCAs that serve rural counties; some SCAs cover more than one county. Because SCAs serve a key role as navigators and resource connectors within the counties they serve, SCAs hold extensive knowledge about what services are available for local people with OUD.

Our survey collected information on several key measures of MOUD availability. The survey asked SCAs about their own MOUD funding practices for uninsured individuals, including what types of MOUD they fund, whether they impose a cap on funding per individual, and how many providers they contract with for MOUD treatment. It then asked about their county jail's MOUD treatment programs, including what types of MOUD are available, whether the jail offers induction (meaning incarcerated individuals may begin MOUD treatment) or continuation only (meaning only those already in MOUD treatment before becoming incarcerated can receive MOUD), reasons why individuals might be discharged from MOUD treatment programs, and availability of reentry planning services for treatment continuation. Finally, it asked about their county treatment court's MOUD treatment practices, including whether the court facilitates inductions and whether the court has specific rules around MOUD use. The full survey is included in Appendix 1.

We distributed the survey to SCA directors via email, including both a consent form with study information and the link to a Qualtrics survey. When participants opened the Qualtrics survey, the first question included study information again with a button to provide informed consent. The survey was either completed by the SCA director or forwarded to another staff member. After several rounds of outreach, a 100 percent response rate was achieved. Surveys were completed during the summer and fall of 2024.

We did not collect information on key measures of harm reduction availability on this survey, as we learned that the Pennsylvania State Epidemiological Outcomes Workgroup (SEOW) had conducted a similar survey with SCAs in the spring of 2024 (PA SEOW 2024). This survey was similarly distributed to SCA directors via email, and a 100 percent response rate was also achieved. This survey asked about what harm reduction tools and services each SCA provides, either directly or indirectly by funding other

[5] We followed the Center for Rural Pennsylvania's definition to distinguish rural from urban counties (Center for Rural Pennsylvania n.d.). A county is considered rural when the number of people per square mile in the county is fewer than the average number of people per square mile across the entire state (291 people/sq mile). According to this definition, there are 48 rural and 19 urban counties.

organizations; how the SCA obtains funding for harm reduction programs; how naloxone and testing strips are distributed; and whether there is an SSP present in the community.

We obtained information about OTP locations via SAMHSA's publicly-available directory (SAMHSA n.d.). Measures of opioid-related harms were also obtained via public data sources. We obtained information about overdose deaths, HIV prevalence, and HCV prevalence through Pennsylvania's Open Data Portal (Commonwealth of Pennsylvania 2025). The Results section presents descriptive statistics from our survey, the PA SEOW's survey, and publicly available data. Figures and maps were produced using Datawrapper.

**Assessing Accessibility of Services**

In order to assess accessibility of MOUD and harm reduction services, we then conducted interviews with several different types of stakeholders in rural counties. We included five subsamples of participants: people who provide MOUD treatment, people who provide harm reduction services, people who work in county jails, people who work in county treatment courts, and people with living experience using MOUD and/or harm reduction services. [6] We aimed to triangulate observations and perspectives across these groups—a practice that is still rare in studies on MOUD and harm reduction utilization generally, and especially rare in rural settings (Skogseth et al. 2025; Smith 2022).

The first four subsamples of participants were recruited purposively using email and phone outreach. We recruited MOUD providers by calling all OTPs and emailing all Centers of Excellence in rural counties. Including OTPs ensured that we would reach people who provide both buprenorphine and methadone; including Centers of Excellence ensured that we would reach people who provide buprenorphine but not methadone. We emailed all jail wardens and all treatment court coordinators in rural counties. A listing of all four groups' contact information is publicly available (Administrative Offices of the Pennsylvania Courts 2024; Commonwealth of Pennsylvania n.d.; County Commissioners Association of Pennsylvania 2025; SAMHSA n.d.). We recruited one additional MOUD provider through personal connections and one additional MOUD provider and criminal legal professional through snowball sampling.

We identified some organizations providing harm reduction services in rural counties through online searches and personal communication with the Pennsylvania Harm Reduction Network (PAHRN). We emailed organization leaders whose contact information we obtained online or through PAHRN. However, the number identified was not sufficient to reach our target goal for this subsample.[7] Thus, on the survey provided to SCAs, we also included a question to see if they would be willing to participate in an

[6] While "lived experience" often implies past experience with the topic at hand, "living experience" refers to present or ongoing experience.

[7] We discuss this further in the Results. While there are often numerous community-based organizations providing harm reduction services in urban locales, we learned that much of harm reduction work in rural counties is done solely by SCAs.

interview to further discuss the provision of harm reduction services. We emailed this group of interested participants as well. In all email and phone outreach, we included information about the study and a consent form for interested participants to review.

Finally, we recruited participants with living experience through interviewed providers. When interviewing MOUD and harm reduction providers, we asked if they would be willing to share a flyer with study information in their physical locations. Many were willing to do so. Interested participants reached out via phone or via a Qualtrics survey. We obtained these potential participants' email addresses and emailed them a consent form to review.

Interviews took place from summer 2024 through spring 2025. Interviews were conducted via Zoom or over the phone, depending on the participant's preference. With participant consent, interviews were recorded and transcribed. Interviews were semi-structured, meaning an interview guide with predetermined questions guided the conversation. However, we utilized narrative interviewing to follow the unique observations and perspectives of individual participants (Anderson and Kirkpatrick 2016). Thus, interviews included follow-up questions to fully capture participants' narratives.

A separate interview guide was used for each subsample of participants. MOUD and harm reduction providers were asked about their services, the barriers they face providing services, and their observations of the barriers their patients face accessing services. Criminal legal professionals were asked about their protocol for providing MOUD and successes and challenges faced in MOUD provision. Finally, people with living experience were asked about their experience with MOUD treatment and harm reduction programs and barriers to accessing both. All groups were asked about their observations on the overdose crisis in their community and their perceptions of remaining needs to reduce opioid-related harms. The full interview guides are included in Appendix 1.

A total of 59 interviews were conducted, including 13 interviews with MOUD providers, nine with harm reduction providers, 10 with jail staff, six with treatment court staff, and 20 with people with living experience. One interview was conducted with a criminal legal professional who works with jails and treatment courts but not for a jail or court. Sometimes, multiple people from a single organization took part in an interview. We do not consider these as separate interviews. Tables 1-5 in Appendix 2 provide greater detail about each subsample. All interview participants lived and/or worked in rural counties, as defined by the Center for Rural Pennsylvania. We do not report the counties where interview participants are based in order to protect confidentiality.

We also conducted four site visits. We visited one harm reduction distribution event hosted by an SCA, one harm reduction distribution event hosted by a community-based organization, one drop-in center, and one OTP. These visits allowed us to visualize the processes and barriers discussed in interviews. We took field notes during and after the visits to record observations. The visits were conducted with providers who were also not interviewed. Thus, the total number of MOUD providers who participated in an

interview or site visit was 14, and the total number of harm reduction providers who participated in an interview or site visit was 12. Information about these site visit participants is also included in Tables 1 and 2 in Appendix 2. All site visits were conducted in summer 2024.

All interviews and field notes were analyzed through an inductive thematic analysis process (Vaismoradi et al. 2016). Following each interview and site visit, a short memo was written detailing the key ideas arising in the conversation or visit. Memos were used to develop a list of inductive codes. Interviews and field notes were coded in NVivo using this list of codes. While some topics arose in the interviews and site visits that are outside the scope of this paper, the major themes pertaining to the availability and accessibility of MOUD and harm reduction services in rural areas are outlined in the Results below.

## Results

In the sections that follow, we first describe participants' observations of the current state of substance use in their communities. Many participants see considerable harm and vulnerability in their communities, requiring ongoing attention and intervention. We then turn to our survey data to illustrate the availability of MOUD and harm reduction services across rural Pennsylvania. While the availability of services is expanding overall, there is considerable variation across rural counties. We leverage some interview data in this section to identify reasons behind the unequal availability of services. Finally, we rely on interview data to discuss key barriers to providing and receiving MOUD and harm reduction services in rural Pennsylvania, even when these services are available.

### Trends in Substance Use and Related Harms

Participants across subsamples stressed to us the continued drug-related harms they saw in their communities. These sentiments were particularly acute in counties with high drug overdose death rates. Speaking about substance use, one resident of a county with a high death rate told us, "In this little community where I live at now, it's all around you. You see it. You can't ever get away from it." Others in this county connected high overdose death rates to the lack of local substance use services. A different resident said, "There's not a lot of resources for people to engage with, especially where I'm at in <redacted> County. I know that Pittsburgh has a lot more resources when it comes to the opioid use epidemic, but with <redacted> County, there's limited resources here." Another resident echoed, "I feel like nobody cares about this county."

Concerns about substance use-related harms were not unique to counties with high death rates. In a county with a more intermediate overdose death rate, a MOUD provider told us, "It's pretty bad around here. We're seeing still a lot of overdoses, still a lot of use." A resident of this same county remarked, "It's such a small town, but it's gotten so bad. A majority of the people are on some kind of substance." In this particular county, some participants acknowledged that substance use resources had

expanded and noted the importance of this development. But even with this increase in service infrastructure, concern about continued harms remained.

In counties with lower overdose death rates, some participants worried the worst was yet to come. The overdose crisis has been exacerbated by the volatility of the drug supply, with increasing presence of fentanyl, fentanyl analogs, and other new synthetic opioids and non-opioids. One harm reduction provider noted, “We're usually months to years behind the norms. Fentanyl got big in Philadelphia a bit ago. Just in the last five or six months, we're starting to see it here... They may not be here fully yet, but they're getting here.” This provider believed her county needed to be prepared to lower the harms that could come with greater amounts of fentanyl in the local drug supply.

In addition to fentanyl, many rural providers mentioned concerns about the emergence of xylazine in their local drug supply. While xylazine itself is not an opioid, the risks associated with xylazine are high for opioid users, since it (and other similar non-opioid tranquilizers) is often mixed into opioids. One MOUD provider explained, “Things are being cut with xylazine. That's a huge thing right now... They're coming in with wounds now. If they get Narcan, it's not going to do anything if they have xylazine in their system... Our current medicine doesn't work. It's honestly just slowly getting worse.”

While xylazine was just emerging in most of our participants’ counties, one county in particular—a rural county closer to Philadelphia—had seen a considerable uptick already. An MOUD provider there explained that xylazine had complicated MOUD treatment and made the need for harm reduction even more urgent. She told us, “Xylazine has been a massive problem for us, more so I think than in other rural counties. We have had people in the ICU, we've had people who need surgery... We've seen the withdrawal process being way longer. And it’s a lot worse. And not being able to be managed by your conventional methods of treating detox. And the struggle for us is that it's so new that we don't have a whole lot of information about it.”

Another trend participants saw complicating the provision of MOUD and harm reduction services was the escalation of polysubstance use. One jail employee shared, “What we're seeing right now... is the everything users. I can't get my benzos, so I'm going to use opiates. I can't get my opiates, so I'm going to use meth. It's not uncommon in our facility for somebody to be on three simultaneous detox watches at a time.” This shift in use does not negate the need for MOUD treatment and harm reduction services, but it does complicate organizations’ ability to provide effective care.

Despite recent declines in overdose deaths, our participants stressed that the need for substance use services remains high. Thus, continuing to ensure and further expanding access is an important measure to sustain this decrease in drug-related mortality.

**Availability of MOUD Across Rural Pennsylvania**

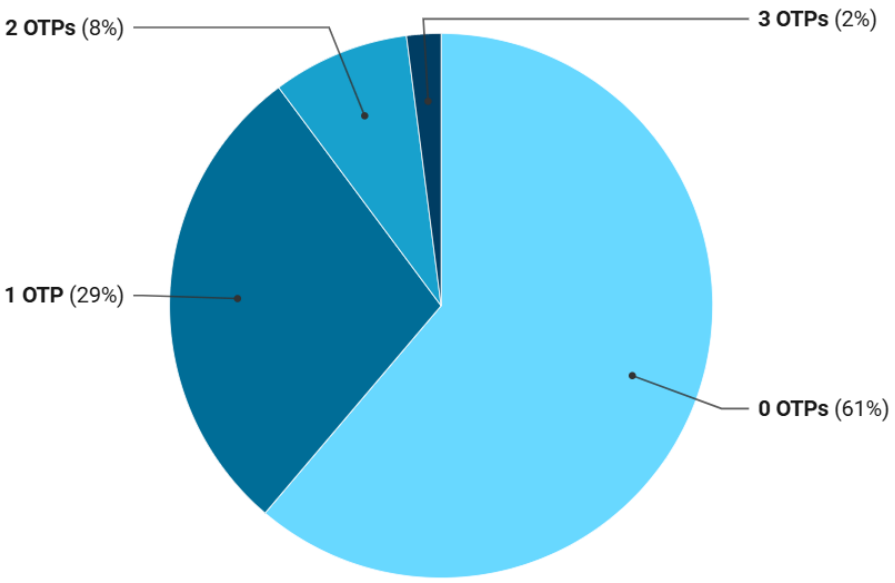
People with living experience emphasized the significance of MOUDs in their lives. Participants explained that using MOUDs had allowed them to reduce their dependence on illicit opioids and rebuild their lives. One young woman using methadone told us, “I was able to keep a home, a job... Without this medication, I would have not been able to have an actual life.” Another told us, “I feel normal like I did when I was 13, 14 years old, before I started getting high... I'm so comfortable with the level of methadone that I'm at... And that's the part that's hard for me to stress, I'm comfortable.” A third woman using extended-release injectable buprenorphine relayed, “It's phenomenal. I haven't had a trigger... I don't even think of getting high... I recommend it to anybody.” Access to MOUDs was a central feature of all our participants’ journeys to sustained recovery.

*Availability of Methadone*

Nonetheless, there continue to be forms of MOUD treatment that are not available in certain rural counties. Figure 1 shows the number of OTPs in each rural county; 61 percent of rural counties do not have an OTP based in that county, meaning there is no methadone available there. Figure 2 provides a map overlaying the number of OTPs in each rural county with each county’s drug overdose death rate for 2023. There are still several rural counties with intermediate to high death rates that do not have a local OTP, such as Elk, Susquehanna, Schuylkill, and Carbon Counties.

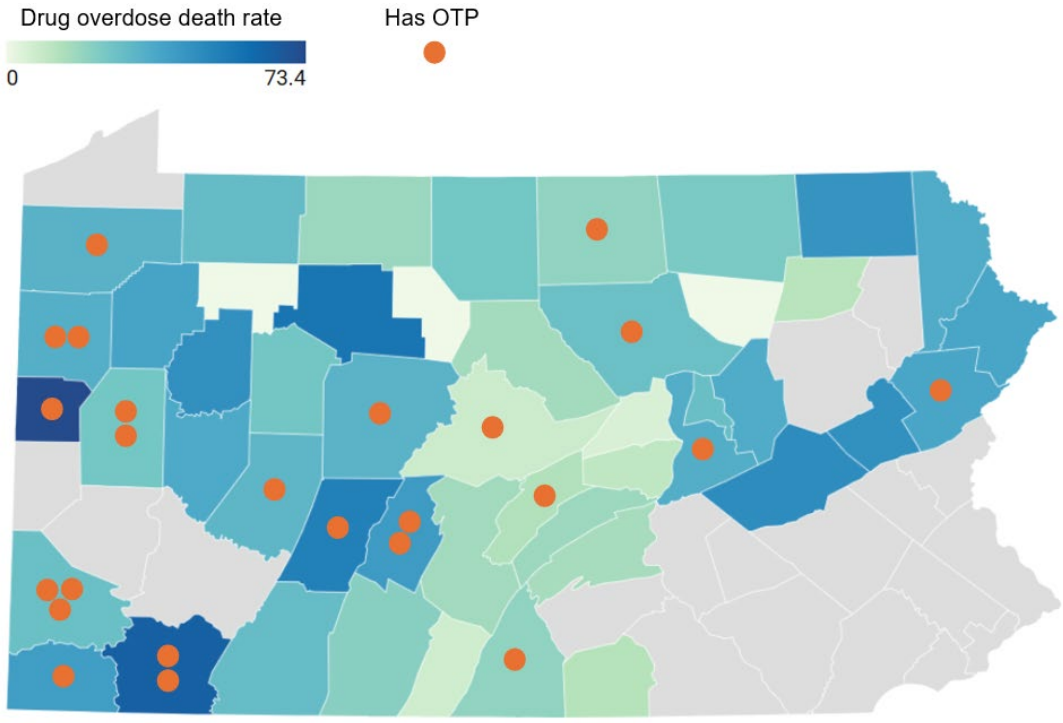
While rural residents can travel to other counties to receive methadone, lacking a local OTP increases barriers. First, having to travel to other counties requires more money and time. Second, having a local OTP can increase awareness and understanding of methadone treatment. Participants told us how important it is to have local OTPs. One resident had formerly lived in a county without an OTP before moving to a county with one. She had not sought treatment until moving to a place where it was available: “That was the reason why I didn't go get help or get off drugs a lot sooner, was because there wasn't a doctor prescribing methadone close to where I lived.” Another resident echoed, “Now that there's one in my county, that's made treatment accessible to me.”

**Figure 1: Number of Rural Counties with 0, 1, 2, or 3 OTPs**




*Data Source: Opioid Treatment Program Directory, SAMHSA.*

**Figure 2: Map of OTP Locations Across Rural Counties in Pennsylvania**




*Data Source: Overdose death rates are for the year 2023 and come from CDC Wonder; OTP locations come from the Opioid Treatment Program Directory, SAMHSA.*

Our interviews illuminate reasons why OTPs might not exist in some counties. Some MOUD providers explained challenges their organizations faced opening in some rural communities due to a lack of buy-in or a "Not In My Backyard" (NIMBY) sentiment. One provider explained, "I think that there is still this, 'not in my county' attitude. This doesn't happen. We don't have a problem." These barriers were not unique to OTPs; some providers who spoke to this worked for organizations providing buprenorphine treatment as well. One provider told a story of trying to open a new facility and receiving pushback from the local government: "The board basically said to me that if I considered or even dared opening ... They can't stop [us], but they will be picketing in my parking lot every single day." Another recounted similar pressure from local residents: "I had to go in front of zoning, and every farmer in town showed up and was like 'You're not bringing people into our county.' And I'm like 'All due respect, you're 100 percent right I'm not bringing them in. In fact, they already live in your county.'"

Some organizations did successfully open new facilities providing MOUD, despite these community challenges. One provider explained how they overcame this pushback: "What I've learned about our rural communities, at least the ones that we work in, they're very insulated. They're very comfortable with what they have... It's like a protective kind of a thing. It took a lot of negotiating, a lot of exposure, meetings, educating, for us to even be able to penetrate the vacuum that they're in. That was very difficult, getting them to just open up and admit that, 'Hey, we do have a huge crisis up here." These tactics are expanding access. Within 2024 alone, two new OTPs opened in rural counties that previously lacked them.

*Availability of Buprenorphine*

Unlike with methadone, it is difficult to pinpoint the availability of buprenorphine in specific localities. In the past, health care providers had to apply for an "X-Waiver" to prescribe buprenorphine for OUD. This requirement was lifted in 2023, so that any doctor, nurse practitioner, or physician assistant can prescribe buprenorphine. While any of these providers *can* prescribe buprenorphine, that does not mean they do in practice. Assessing how many providers in a given locality would or would not prescribe buprenorphine is a difficult feat that is outside of the scope of our study. Nonetheless, our interviews point to a pessimistic picture of the impact of the X-Waiver.

The removal of the X-Waiver requirement intended to expand the availability of buprenorphine by removing a potential barrier that providers faced prescribing it. But our participants did not see new providers prescribing buprenorphine in their communities. One MOUD provider told us, "I don't think it's changed. I think it was good to get rid of the X-Waiver. I think that was a cumbersome thing. But people are either, 'It ain't my thing' or 'I really want to do this.'" Some had even seen providers *stop* prescribing buprenorphine. A harm reduction provider in another county said, "I think there are some that now choose to not even prescribe because of all the diversions and all that kind of stuff that can happen." Similarly, another told us, "At least in our area, it

has been completed washed. So basically, what happened was, and I've heard this in other communities, you basically lost prescribers because they were waivered, and they're like, 'Good, I don't have to do this anymore.'"

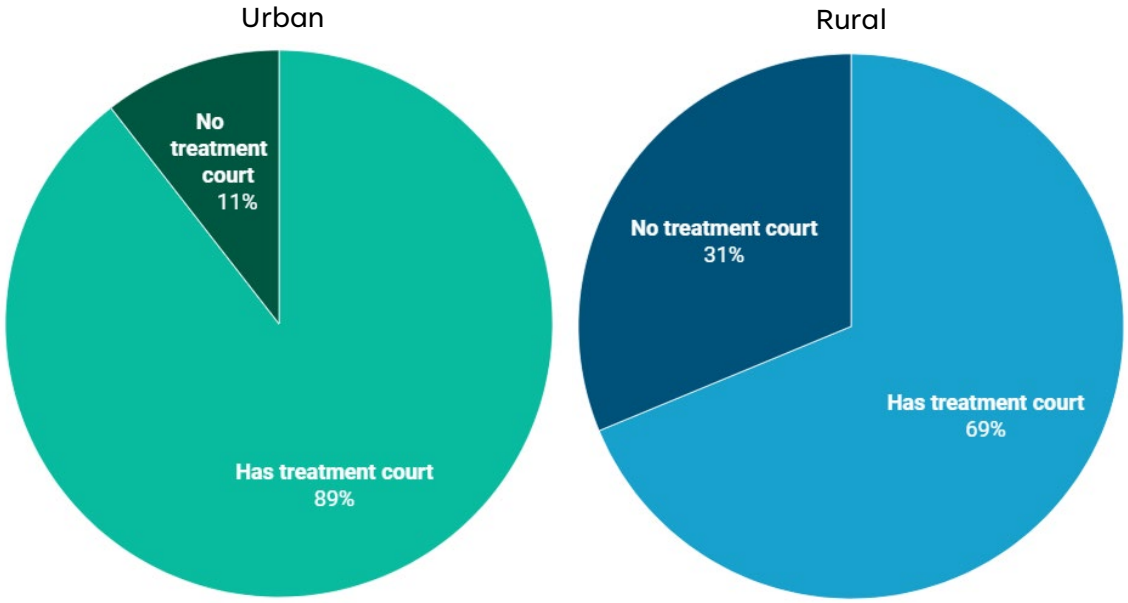
We did hear that certain counties were using opioid settlement dollars to expand the availability of buprenorphine. For example, in one county, opioid settlement funds helped create an MOUD treatment program at an existing outpatient treatment facility. Additionally, many counties are using opioid settlement funds to provide MOUD treatment in county jails. We turn to this specific setting in the next section.

*Availability of MOUDs in Treatment Courts*

To assess the availability of MOUDs in the criminal legal system, we focus specifically on treatment courts and county jails. Treatment courts represent one important touchpoint where the criminal legal system can connect people with treatment and limit adverse consequences associated with criminal legal involvement. Treatment courts provide an outlet for local judicial systems to reduce time incarcerated and instead provide people with SUDs support in accessing resources to enter and sustain recovery.

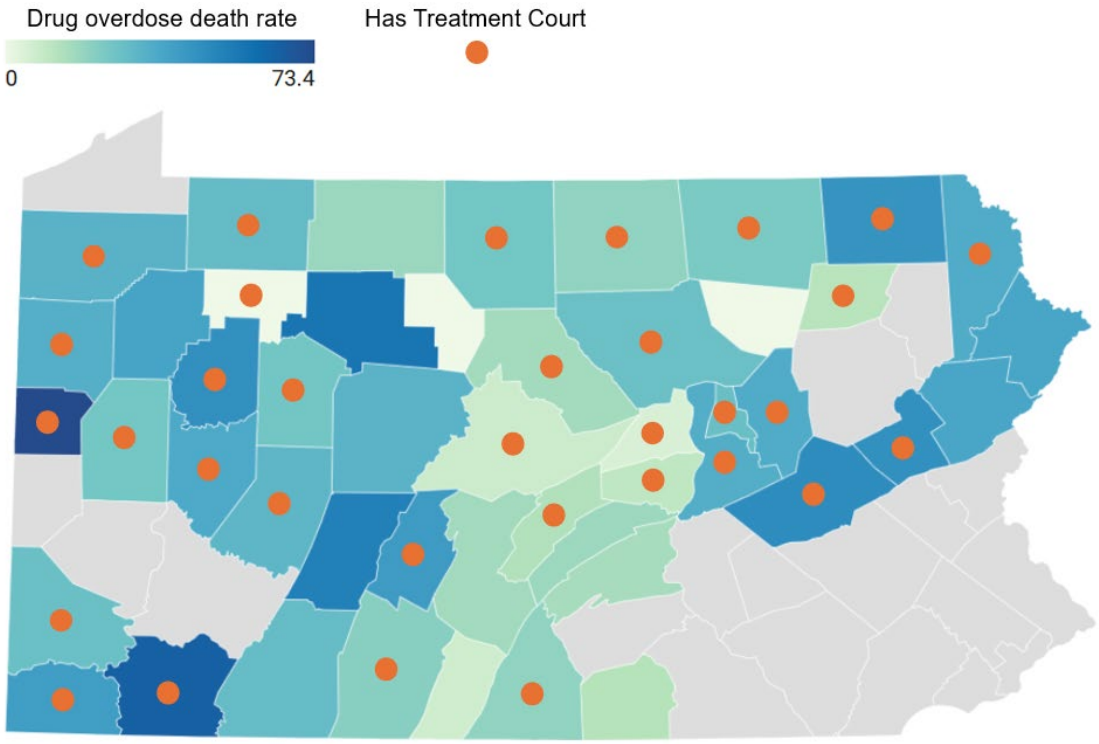
Figure 3 shows how many rural and urban counties in Pennsylvania have a treatment court; 31 percent of rural counties do not have a treatment court, compared to 11 percent of urban counties. Figure 4 shows which rural counties do not have treatment courts, overlaid with each county's annual drug overdose death rate for 2023. There are still several rural counties with intermediate to high death rates that do not have a county treatment court, such as Elk, Cambria, Pike, Monroe, and Venango Counties.

**Figure 3: Number of Urban and Rural Counties With and Without Treatment Courts**




*Data Source: Problem Solving Courts List, AOPC.*

**Figure 4: Map of Treatment Courts Across Rural Counties in Pennsylvania**




*Data Source: Overdose death rates are for the year 2023 and come from CDC Wonder; treatment court locations come from the Problem Solving Courts List, AOPC.*

In the past, while having a treatment court may have facilitated connections to treatment, it did not ensure that people had better access to MOUD treatment, specifically. Some participants with living experience told stories of having to stop MOUD treatment when involved in treatment court. One participant recalled, “In 2018, I went on the drug court program, and maintenance was not allowed. So, I had to come off of it before I started the program... I think that if I would've been able to be on maintenance on that program, I think that that alone would've probably kept me sober... I probably would've successfully completed the program. I didn't successfully complete it.”

As noted in the Introduction, a recent lawsuit declared that prohibiting MOUD use among court participants is an ADA violation. In accordance with this new practice, 100 percent of SCAs reported on our survey that their treatment courts do not require participants to cease use of MOUDs. All treatment courts, though, do require participants to sign a waiver allowing for communication between the court and their MOUD provider. For the most part, SCAs report that there are no additional requirements for court participants who use MOUDs. A small number (12 percent) report that participants may have to bring their medication to court for pill counts.

Allowing participants to use MOUD does not imply that treatment courts are actively presenting MOUD treatment as an option to participants. On our survey, SCAs reported

that 45 percent of treatment courts do not "facilitate MOUD inductions." Of the 55 percent that do facilitate inductions, 77 percent offer up MOUD treatment as a possibility to all participants, while 22 percent facilitate MOUD treatment only if participants ask.

*Availability of MOUDs in County Jails*

County jails represent another touchpoint where the criminal legal system can connect people with treatment. Similar to treatment courts, many county jails in Pennsylvania historically required people to cease using MOUDs when entering incarceration (Strong-Jones et al. 2024). Some participants with living experience told stories of having to stop MOUD treatment when they were incarcerated. One participant recalled, "I came into prison on methadone, and I was coming off of a very high dose. And they gave me Tylenol free for the first, I think, five days. I didn't sleep for a 39-day streak. It was very, very traumatizing. And they told me, 'Well, this is jail. You're not supposed to be comfortable.' And I'm like, 'All right. But I'm almost having a heart attack.' My blood pressure was so high, through the roof... I came in on maintenance, I had proof that I was on maintenance, but they did not do anything about it."

This landscape is changing again, as recent lawsuits have found that depriving incarcerated people of MOUD treatment is an ADA violation. In recent years, more jails are providing some access to buprenorphine and methadone. Figure 5 displays how many rural and urban counties in Pennsylvania provide buprenorphine in their jails;[8] 14 percent of rural county jails do not provide any buprenorphine, meaning people must cease buprenorphine treatment when entering the jail; no urban county jails do this. It is more common among rural county jails to offer continuation only; 69 percent of rural county jails only allow those entering on buprenorphine treatment to access buprenorphine there, compared to 47 percent of urban county jails. It is less common among rural county jails to offer induction; only 17 percent of rural county jails allow people to begin buprenorphine treatment in jail, compared to 53 percent of urban county jails. Figure 6 displays how many rural and urban counties in Pennsylvania provide methadone in their jails.[9] It is more common among rural county jails to not offer methadone, meaning people who enter on methadone must switch to another MOUD. [10] Only 57 percent of rural county jails offer methadone, while 89 percent of urban county jails do.

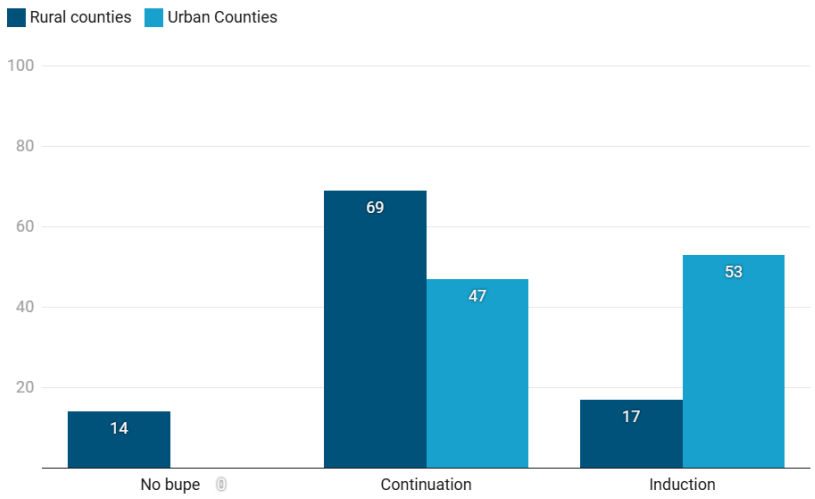
[8] These statistics exclude the six rural counties that do not have their own county jails. Thus, the denominator for the rural statistics is 42 rural county jails.

[9] Some additional jails allow pregnant individuals to continue methadone treatment. This figure references whether methadone is available for the general population, not just pregnant individuals.

[10] While policy discussions of buprenorphine consider whether jails are offering continuation or induction, the discussions of methadone typically focus on continuation only. No rural counties offer methadone induction.

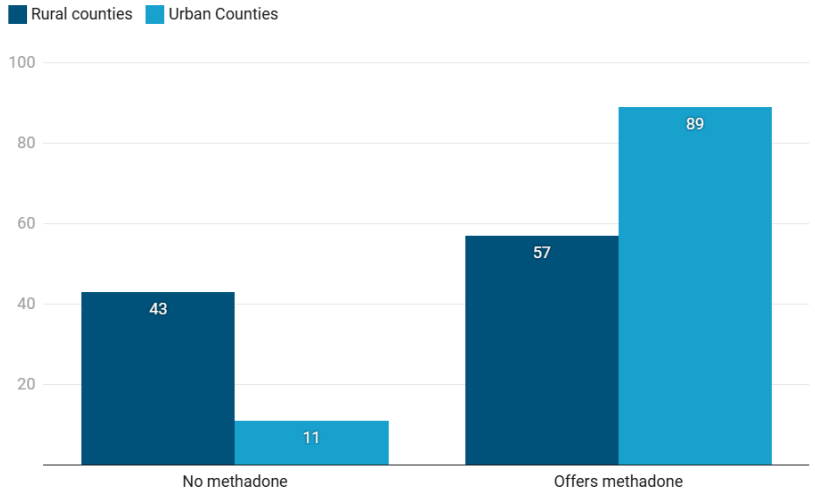
Figure 7 shows which rural jails provide buprenorphine induction, buprenorphine continuation, methadone continuation, or neither buprenorphine nor methadone.[11] Similar to treatment courts, 100 percent of the jails that offer MOUDs do not require those receiving MOUDs to cease use over time. Additionally, 100 percent of the jails that offer MOUDs engage in some form of reentry planning to ensure that people are connected to continued MOUD services upon reentry.

**Figure 5: Number of Urban and Rural County Jails Providing Buprenorphine**




*Data Source: Data for rural counties comes from our original survey conducted in 2024; data for urban counties comes from the Pennsylvania Institutional Law Project's 2024 MOUD report.*

**Figure 6: Number of Urban and Rural County Jails Providing Methadone**

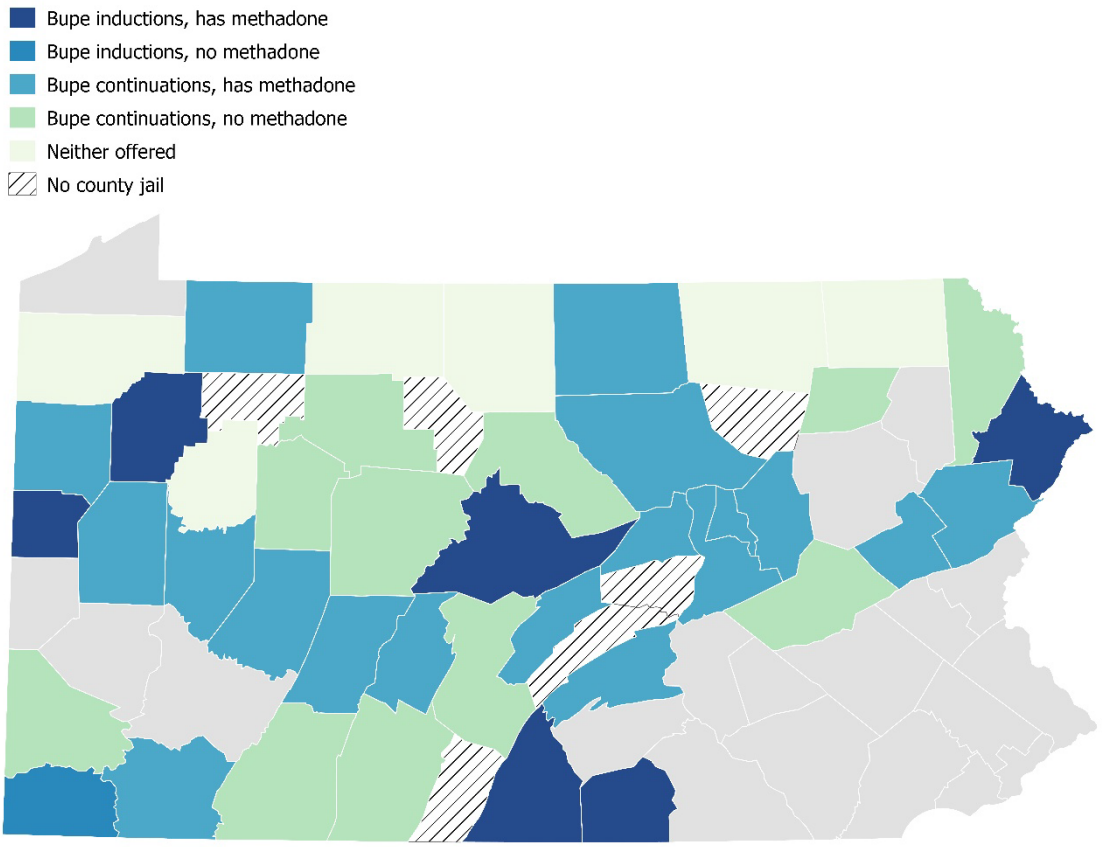



*Data Source: Data for rural counties comes from our original survey conducted in 2024; data for urban counties comes from the Pennsylvania Institutional Law Project's 2024 MOUD report.*

[11] Some of the jails providing neither buprenorphine nor methadone do offer naltrexone.

Our interviews with jail staff point to the successes of new and expanding MOUD programs in jails. Several participants reported less violence in their facilities and a better environment for both staff and incarcerated individuals. Others noted the need for other medicines and medical attention had gone down, since people in MOUD programs were not forced to withdraw. One person noted attempts to smuggle Suboxone into the jail decreased when MOUD treatment was made available in the jail. As one warden explained, "I definitely want to say to the people that aren't doing it [providing MOUD] how beneficial it is... It's calmed down all the inmates. There's less fighting. There's less people being agitated because they want that drug because we're providing it. There's less fights, less arguing with staff. There's less issues on the blocks. There's so many less issues in the jail because people aren't irritated on edge all the time. They're getting that drug, and it's making them feel better."

**Figure 7: Map of MOUD Availability Across Rural County Jails in Pennsylvania**




*Data Source: Original survey with SCAs conducted in 2024.*

Our interviews also illuminate reasons why some jails have been resistant to creating or expanding MOUD programs. The most common concern among jail staff was diversion. Participants worried about people's desire to give or sell their medication to others, and significant effort was devoted to designing and running protocols to decrease diversion. One warden explained, "It takes a lot of resources to run an MAT line inside the jail, and it's very, very abused... I mean, daily. It's everything that we try to prevent inmates from taking it back to the block. They find a way around it, and then we figure that out, and then they find a new way and it is just... it's a constant. We thought we were pretty well drug free. Now, we're actually letting drugs into the facility." Some jails found housing individuals in the MOUD program together could decrease diversion; others lamented they did not have the space to do this. Different physical layouts of jails and their implications for MOUD programs were one reason that some jail staff disagreed with the state's "top-down" approach of mandating MOUD treatment without eliciting local input.

Rigorous protocols to prevent diversion require significant staff time. Some prisons have had to hire a new employee to establish an MOUD program; others said they would have to hire a new employee to expand from continuation to induction. Not only is staff time costly, but MOUDs themselves are also costly. The costs of MOUD programs were another top concern among jail staff and a key reason for not wanting to offer inductions, especially among smaller rural jails with lower funds and staff capacity. One warden told us, "Small jails are going to have much more problems dealing with these issues than larger ones... We're understaffed as it is... We're already running on fumes."

Some jails perceived methadone provision as preferable to buprenorphine, while others found it particularly burdensome. This often hinged on whether there was an OTP based in the county. When jails had a local OTP, the facility was often willing to bring methadone to the prison for dosing. Because of the low numbers of people on methadone in smaller, rural jails, these jails struggled to get OTPs to bring methadone to them if they were not local. Instead, they had to transport individuals one-by-one to the nearest clinic. This was particularly staff intensive and posed a significant barrier to offering methadone, especially for counties particularly far from an OTP. One warden explained, "Methadone is a huge burden... For us, there's no methadone clinic in <redacted> County, so we have to go to <redacted> County. And then you're standing in line with an inmate at six o'clock in the morning. There's no backdoor for inmates at a methadone clinic."

Most participants expressed a desire to offer extended-release injectable buprenorphine (Sublocade) as opposed to the daily sublingual formulation (Suboxone). They believed this formulation would be harder to divert, which would ease concerns about expanding MOUD programs. They also recognized this would require far less staff time, since it is administered monthly as opposed to daily. However, each participant who desired Sublocade noted the price tag was out of reach. One participant explained, "The pills are $90 for the month as opposed to $1,400 for the month for a shot. If the

county would have to sustain this with their funds, they wouldn't be able to do the shot. It's not sustainable."

**Availability of Harm Reduction Services Across Rural Pennsylvania**

Just as participants with living experience emphasized the significance of MOUDs in their lives, so too did they underscore the importance of harm reduction services. Several had used naloxone on others to reverse an overdose—sometimes for a loved one at home and other times for random individuals they came across. Some participants had naloxone used on them as well. One participant recalled, "A week ago, me and my fiancé were on our way home from the store, and there was a guy overdosing on the sidewalk at 9:30 at night, and we had to revive him with Narcan." Another told us, "I've saved so many people's life, it's not even funny." Participants and providers both underscored that individual access to naloxone is essential, as people still may not trust the Good Samaritan Law and may be hesitant to call the police or EMS in the event of an overdose.

Our participants had less experience with testing strips and SSPs, but those who had used them recognized their importance. One participant told us they used testing strips "to make sure if something did or didn't have fentanyl in it." They remarked, "It definitely was a useful tool to have when I was using." Another told us, "Say if my son started getting high or something, I wouldn't be happy about it. But I would be comfortable knowing that there's places he can go to get clean needles, and he's not out here sharing needles. That there's somewhere he can go to get a test strip to tell him what's in the drugs that he's doing."

We did not interview any people who had used an SSP, but we did interview one group operating an SSP in a rural county. Since their inception, they have seen success not only distributing clean syringes but also distributing naloxone and connecting people with other life-saving health services. A staff member explained, "We're literally saving lives. Along with giving the needles and the hygiene kits, we're giving Narcan. Since the inception, they have reported hundreds of people whose lives have been saved... And also, because they're thinking more about recovery, I would say about 30 percent have asked about recovery options. I feel like we're getting closer to helping them in recovery."

*Availability of Naloxone, Testing Strips, and Education*

SCAs play an important role in funding and providing harm reduction services in Pennsylvania. The PA SEOW's survey demonstrated disparities in what services SCAs provide in different counties, as shown in Figure 8.[12] While 75 percent of SCAs in rural counties provide naloxone, test strips, and harm reduction education, 25 percent have

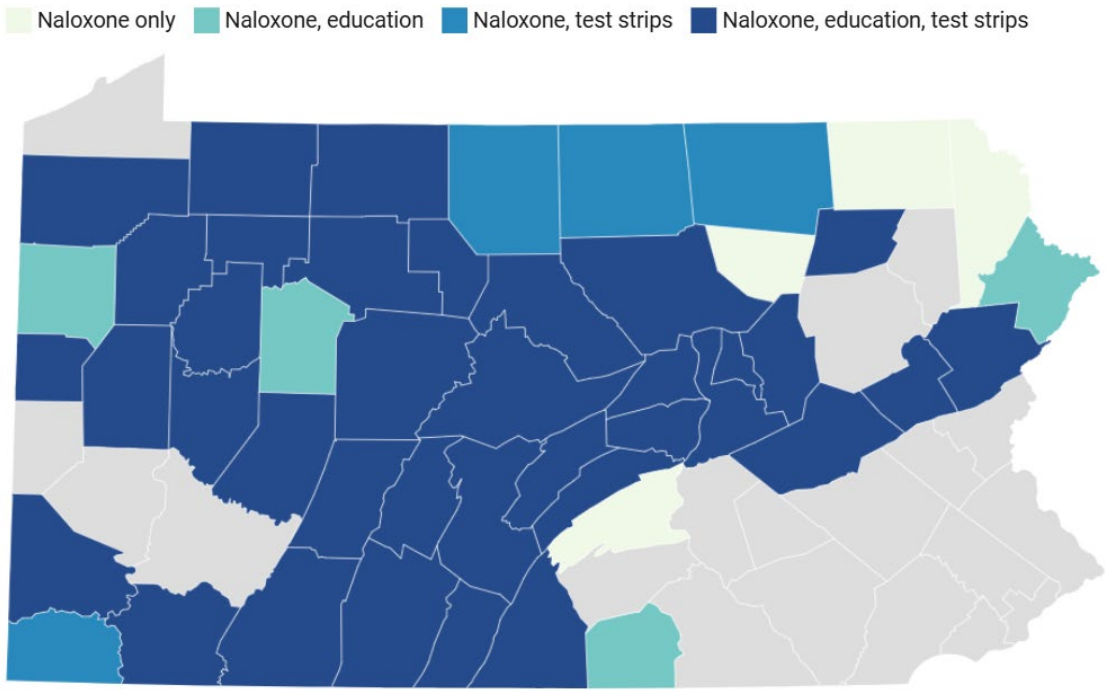
[12] Other organizations may provide harm reduction services without the involvement of their local SCA. Thus, this map does not imply that a service is definitively unavailable in a given county.

only one or two of these three services. By comparison, 84 percent of SCAs in urban provide all three services, and 16 percent only have two services (naloxone and testing strips); none offer naloxone only (PA SEOW 2025).

One factor that may limit a SCA's ability to provide these services is capacity. Figure 9 shows the numbers of urban and rural SCAs receiving state and county funding for harm reduction service provision. Only 71 percent of rural SCAs receive state funding for harm reduction services, and 29 percent receive county funding; by comparison, 84 percent of urban SCAs receive state funding, and 58 percent receive county funding (PA SEOW 2025).

Additionally, urban SCAs are more likely than rural SCAs to fund other organizations to provide harm reduction services, while rural SCAs are more likely than urban SCAs to provide these services themselves (PA SEOW 2025). This corroborates our experience conducting recruitment for this study. While we intended to interview community-based organizations providing harm reduction services, we identified very few. We learned that, in many counties, SCAs are the only entities conducting harm reduction work. Thus, rural SCAs often have fewer staff and lower funding, *and* also do not have other organizations to collaborate with to increase access to harm reduction services in their counties.

**Figure 8: Map of Harm Reduction Availability Across Rural SCAs in Pennsylvania**




*Data Source: PA State Epidemiological Outcomes Workgroup survey conducted in 2024.*

**Figure 9: Percentage of SCAs Receiving State and County Funding for Harm Reduction**


*Data Source: PA State Epidemiological Outcomes Workgroup survey conducted in 2024.*

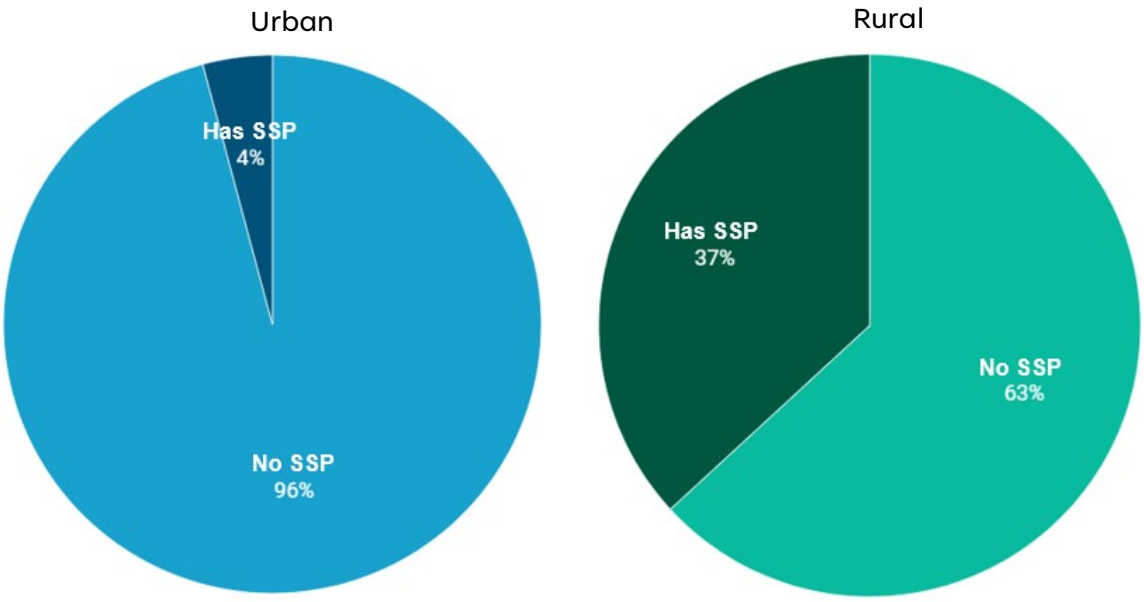
As a result, rural SCAs—especially those in the least populous counties—may find it difficult, or even impossible, to provide the same breadth of services as SCAs with more staff and more funding. For example, we interviewed one SCA that does not presently provide harm reduction education. In their interview, the director expressed interest in doing so, but they had not yet found the time to research what resources to provide.

Finally, while harm reduction providers discussed the provision of fentanyl and xylazine test strips in their interviews, other forms of test strips were not mentioned. As other potent opioids (e.g., nitazenes) and non-opioids (e.g., medetomidine) become more prevalent in Pennsylvania's illicit opioid supply, the importance of ensuring access to these other types of test strips will grow.

*Availability of SSPs*

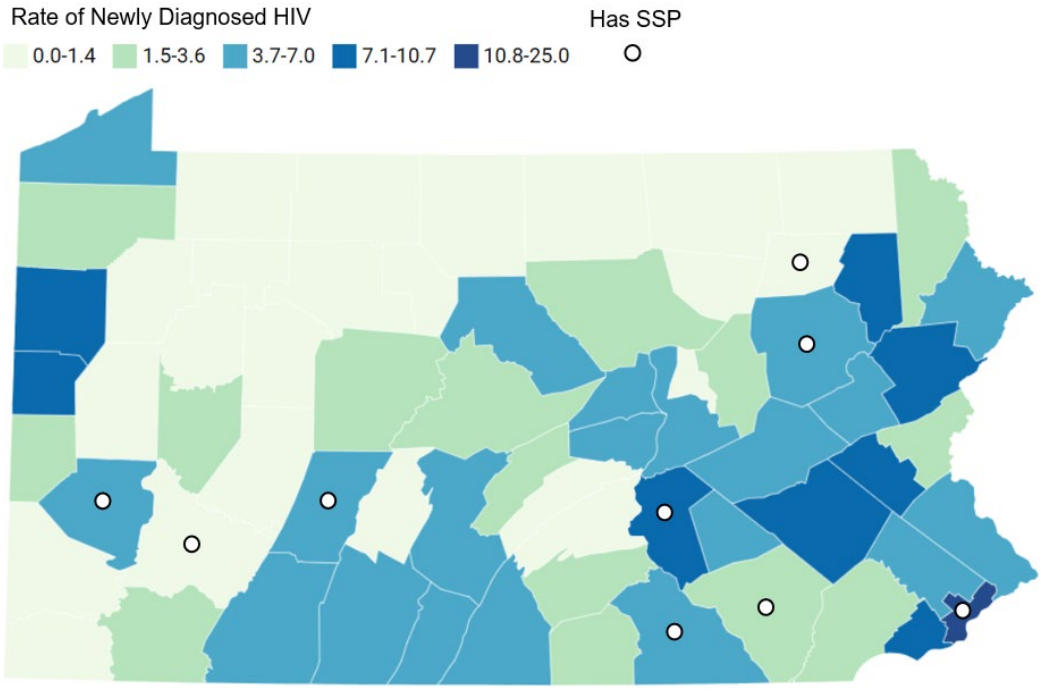
There is also considerable disparity in the presence of SSPs across urban and rural Pennsylvania. Figure 10 shows how many rural and urban counties in Pennsylvania have an SSP. Only four percent of rural counties have an SSP, compared to 37 percent of urban counties. Figures 11 and 12 show which counties have SSPs, overlaid with each county's rate of new HIV diagnoses in 2023 and rate of acute (new) HCV cases in 2022, respectively. Numerous rural counties with intermediate to high rates of new HIV cases do not have an SSP; some with the highest rates include Lawrence, Mercer, and Monroe. Similarly, many rural counties with intermediate to high rates of acute HCV cases lack an SSP; some with the highest rates include Crawford, Mercer, Elk, Bedford, Indiana, and Lawrence.

**Figure 10: Number of Urban and Rural Counties With and Without SSPs**



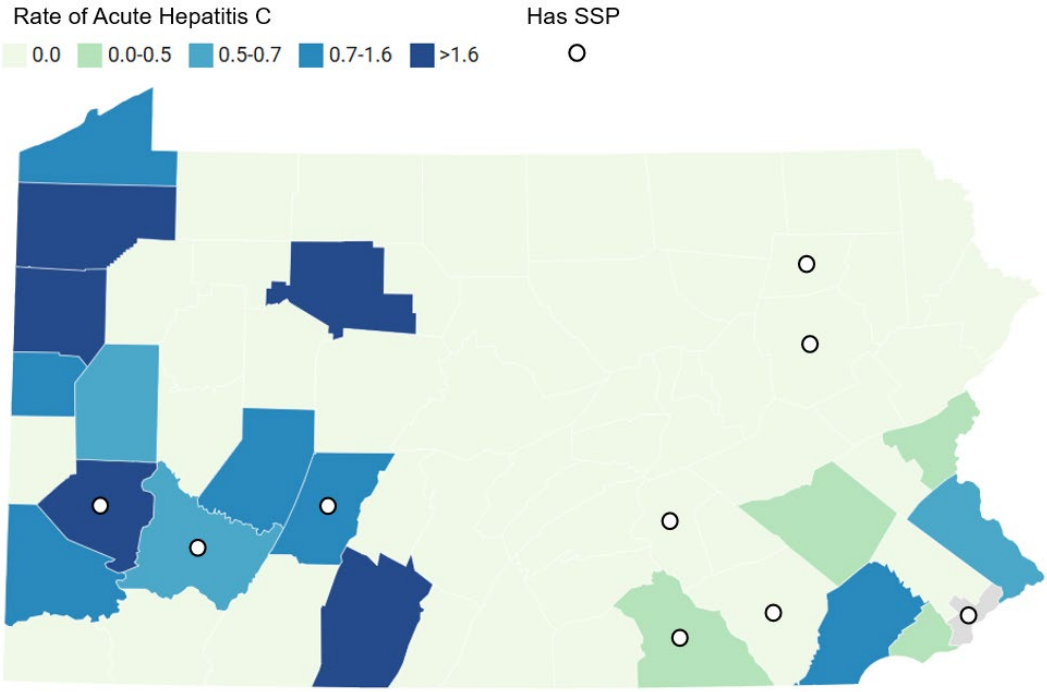

*Data Source: PA State Epidemiological Outcomes Workgroup survey conducted in 2024.*

**Figure 11: Map of SSPs and New HIV Diagnoses Across Urban and Rural Counties**




*Data Source: Rates of newly diagnosed HIV cases are for 2023 and come from the PA Department of Health; SSP locations come from the PA State Epidemiological Outcomes Workgroup 2024 survey.*

**Figure 12: Map of SSPs and Acute HCV Cases Across Urban and Rural Counties**




*Data Source: Rates of acute HCV cases are for the year 2022 and come from the PA Department of Health; SSP locations come from the PA State Epidemiological Outcomes Workgroup survey conducted in 2024.*

Many participants reported growing needs for SSPs in their counties. One MOUD provider invites an organization approximately every six months to provide free HIV and HCV testing for patients; they reported seeing increasing rates of HCV among patients. Several people with living experience in different counties relayed that rates of HCV were rising in their communities. One participant had developed liver fibrosis from a chronic case of HCV. Several participants told us that, had there been a local SSP while they were injecting drugs, they would have used the program. Instead, they had used risky injection practices—such as sharing needles—especially as their OUD progressed.

Some harm reduction providers told us they were poised to develop SSPs themselves if they were legalized. In other counties, participants felt it would take considerable effort and education to get a local organization to step up. One SCA told us, "[SSPs] have an awful lot of stigma. So whenever we get to the point where that legislation does change in Pennsylvania, we're definitely going to have to do a lot of education in our communities... and to say, 'Hey, this is a public health initiative. This does reduce disease and infection, and this is the reason why this intervention is good for our community.'" This participant believed that Federally Qualified Health Centers (FQHCs) would be well-positioned to host SSPs in rural communities.

Several participants with living experience expressed that the state should support SSPs, especially to ensure SSPs are opened in rural counties that lack harm reduction organizations. One participant encouraged using opioid settlement funds for this

purpose: “You're not going to change a person, but you can change how that person is going to do something. Someone that's going to not have a needle and grab one from someone that they don't know and get a disease that our tax dollars are going to be spending hundreds and thousands of dollars on. Spend the $10,000 it'll cost to set something up that will lessen the effects or lessen the probability of something like that happening.”

**Accessibility of MOUD Across Rural Pennsylvania**

Having access to services does not simply require that those services be available; people must also be able to physically get to those services and feel comfortable doing so. Our participants recognized numerous barriers that limited access to MOUD treatment in rural communities, even when those communities had some form of MOUD treatment offered there. One participant with living experience explained, “There's enough [MOUD treatment resources] here that it makes it just enough of a pain in the a*s to have to go to it.” In this section, we outline the eight common accessibility barriers cited across interview sub-samples. We then turn to additional accessibility barriers faced by rural residents involved with the criminal legal system.

*Lack of Transportation*

The most cited issue across participant types was lack of transportation. Many people seeking MOUD treatment do not have access to stable personal transportation. Some have lost a driver’s license due to drug-related charges (e.g., a DUI), while others may lack a reliable car or gas money. Across rural counties, public transportation is extremely limited. While some people may rely on family and friends for rides, MOUD providers noted that others’ social networks may be unsupportive of MOUD treatment. One provider explained, “Maybe I've not even come to grips with my family to tell them that I am in recovery or I'm an addict.[13] I'm not going to ask them for a ride on a random Wednesday at noon, like, ‘Well, what are you doing?’” Transportation challenges are experienced across rural counties but are particularly acute in less populous rural counties and in more remote communities within rural counties.

In many rural counties, the only public transportation option may be a county-run medical transportation service. One participant told us learning about this service was the only way they could begin MOUD treatment. Nonetheless, there are several limitations to this service. First, while the service is free for those with Medicaid, those without Medicaid may be unable to afford the cost. In some smaller counties with limited-service capacity, those without Medicaid under age 65 may not be able to use the service at all. Second, participants explained that the ability to use this service may be taken away. One person who uses this service to get to treatment explained, “If you

[13] NIH considers “addict” to be a stigmatizing term; while it is not a term we encourage people to use, it has been kept here to preserve the quote’s integrity (NIDA 2021b).

need to cancel your ride for some reason, if you don't give them enough notice, they count that against you. You can actually lose your privileges to ride with them."

Participants also explained that they must schedule appointments days ahead of time, and rides can take multiple hours. Particularly for those beginning methadone treatment, this can amount to several hours a day spent getting to and from an OTP. As one participant with living experience told us, "You end up waiting hours and hours on end before you even get picked up to come back home." Another explained, "Sometimes you might be half the day, might be all day, but if you need to get to your appointment, you have to." Finally, these vans have limited daily hours and operate only on weekdays—posing a challenge for methadone patients who must get to OTPs early and on Saturdays.

Many providers told us they wanted more opportunities to apply for funding to support transportation initiatives—for example, to buy their own van to transport patients. One provider who had done this using grant funding had seen a positive change but worried about what would happen when this funding expired: "Transportation is a huge barrier. But for the most part, we have been able to eliminate that as a barrier for our population. But all of that is through our <redacted> grant. So, if the grant ever goes away, we don't have those funds."

The use of mobile vans to deliver medication can lessen transportation barriers. By traveling to more remote communities, mobile clinics decrease the distance that patients must travel. While this service is rare in Pennsylvania, we heard positive stories from both providers and participants. One participant who accesses buprenorphine via a mobile service told us, "It's convenient because there's people like me that don't have a vehicle to drive themselves... I can just get my injection right there in the RV, and go on my way."

Telehealth can also lessen transportation barriers. Providers can offer telehealth to prescribe buprenorphine and to conduct counseling for both buprenorphine and methadone treatment. Several people with living experience told us they appreciated telehealth treatment options. Yet, while telehealth expanded during the COVID-19 pandemic, many providers and criminal legal professionals told us they were limiting telehealth and transitioning largely back to in-person care. One provider told us, "We don't necessarily love the use of telehealth. There's nothing better than seeing the whites of somebody's eyes physically in front of you... We're fearful that it's going to just be taken advantage of like making excuses now, so I don't have to come in and give a urine drug screen, or I just don't feel like coming in today. So, we're a little hesitant on pushing the button on a go." Providers acknowledged telehealth could be an important tool in emergencies but did not see it as a permanent solution to transportation challenges.

Providers also noted broadband accessibility posed a challenge to telehealth use. One told us, "In a lot of these communities, people are very impoverished, and they don't have broadband, and they don't have simple mobile services. I was on a phone

call, seven times I had to call back and forth because I kept dropping calls." Thinking back to the use of telehealth during COVID-19, a provider in another county recalled, "When we would do the appointments, when they would be home or somewhere else, the phone would cut out, the Wi-Fi would end, it would be pixelating and glitching." These infrastructural issues also limited providers' interest in using telehealth for MOUD treatment.

*MOUD Stigma*

The second most commonly cited barrier was stigma. While lack of transportation prevents people from getting to treatment facilities, fear of stigma can limit people's willingness to seek MOUD treatment. People acknowledged that stigma towards OUD was decreasing as time passed, but it was still ever present. One criminal legal professional explained, "The stigma against addiction is breaking, but it's not broken."

Every participant with living experience felt their communities did not fully support the use of MOUDs to achieve recovery. One explained, "I think it's hard because of the stigma of maintenance meds, and people always saying, 'Oh, you're not clean if you're on maintenance meds'... The judgment and the stigma, it scares them off. And I think that's a big issue with why a lot of people don't go for maintenance meds. I think if they were just a little bit more understood by the community, maybe there would be more hope for people to get clean." Participants further felt like their communities looked down upon methadone use to an even greater extent than buprenorphine use.

Participants with living experience recounted stories of feeling judged by treatment providers and other health care providers. They also found a lack of recovery support groups open to them, since some 12-step groups do not believe the use of MOUDs constitutes sobriety. Stigma also manifested not simply through individual judgments but as institutionalized rules. Providers told us they sometimes faced difficulties placing patients using MOUDs in inpatient treatment or nursing homes. They noted some hospitals refuse to dose patients with methadone, and some shelters refuse to house people using MOUDs. They also reported that some mental health providers refuse to serve people using MOUD, amplifying the challenges imposed by local shortages of mental health care providers in rural communities.

Participants also told us about stigma towards MOUDs among law enforcement. We heard stories from both providers and people with living experience about law enforcement targeting methadone clinics. One person using methadone explained, "The cops used to sit at the end of the street from the methadone clinic, and as soon as we'd pull out, they'd pull us over and give us DUI... A girlfriend of mine, we were driving to the clinic last year. They watched us pull in and everything, and soon as we pulled out, as soon as our back right tire got off of that property, they hit the lights and pulled us over." A methadone patient in another county told us, "There's police cars that sit outside of our methadone clinic and just wait until somebody's pulling out so they can pull them over because they know they're going to be under the influence... I've watched

it happen to multiple people I know... I've seen people go to jail for it. Have to get out of their cars, leave their cars there, and go to jail."

These stories were corroborated by providers. One told us, "I took a phone call not too long ago. One of our patients left here. She got pulled over. She called us crying that they were trying to give her a DUI because she was on her medication dose. This was a stable patient who's not had a dirty drug screen in, God, I don't even know how long. He was treating her like absolute garbage." These incidences can be propagated both by personal stigma towards methadone use and laws rooted in cultural stigma.

MOUD stigma also heightened transportation issues. Multiple participants told us they were hiding their MOUD use from family members, or they had family members who disagreed with their MOUD use. These participants were unable to ask family for help with rides. Stigma could also contribute to MOUD treatment facilities being less physically accessible and requiring longer or more difficult commutes. Some participants with living experience questioned why OTPs are often hidden in remote locations. One MOUD provider told us, "Even our clinic, I know, they were in downtown <redacted> before I was here... Part of the reason they moved was because of the stigma, they were getting too much hate or people were getting harassed."

Education is one possible way to decrease MOUD stigma. But felt stigma can also be lessened through systems of integrated care. Approaching a family doctor, as opposed to a designated treatment facility, may be easier for those initially seeking treatment. Yet especially in Pennsylvania's rural counties, this model is underutilized. We interviewed a few providers who work in these models and espoused their successes. One told us, "You could come in for your sinus infection and then be seen for your MOUD. We have nothing within our clinics that say, 'MOUD to the left and sinus infection to the right.'... We were intentional, and we wanted to eliminate any type of bias or issue. You could be treated at any time, any day. We don't have just like Thursday is our buprenorphine day. If we continue to do that... it's not doing anything to knock down the walls, right?"

*Funding and Insurance Issues*

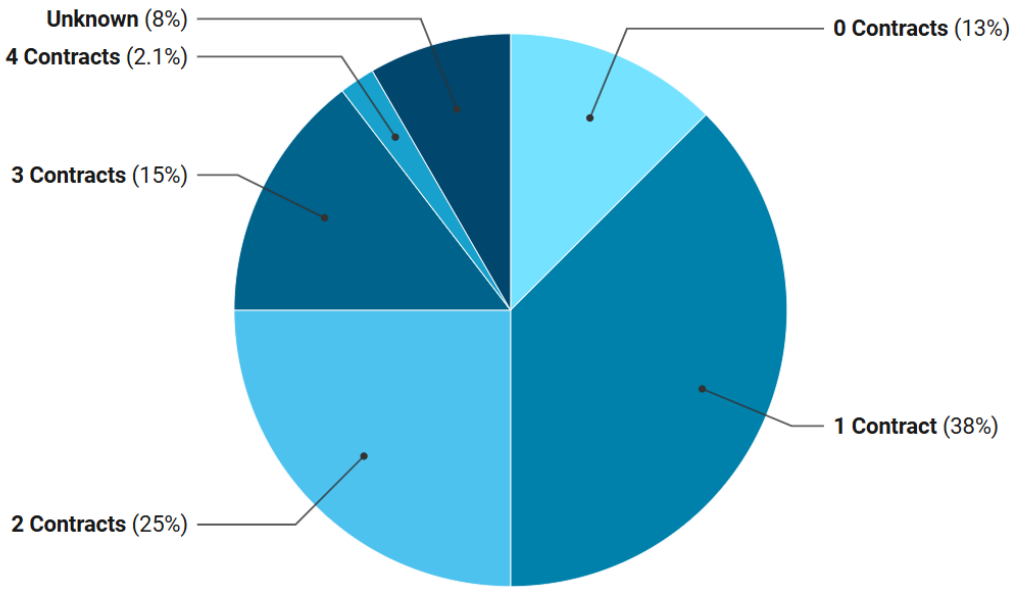
A third major barrier concerns difficulties funding MOUD treatment. Participants underscored the importance of SCA funding for those experiencing gaps in insurance coverage, such as people leaving jail. SCA funding ensures people can access MOUD treatment more immediately, instead of waiting for Medicaid or private insurance to be approved or reinstated. One participant with living experience recalled, "My insurance had lapsed, and in that period of time, I was able to actually get funding from the county itself so that I was able to stay on my medication until my insurance kicked back in. That was super helpful." Some participants believe information about SCA funding is not publicized widely enough. One said they knew of others who had walked away from MOUD treatment because they did not have the insurance or money to cover it.

Despite past studies suggesting that SCAs might place a cap on the funding provided to any one individual (Skogseth et al. 2025), no rural SCAs surveyed reported a funding cap.[14] However, SCAs may impose other limitations on funds. For example, most SCAs contract with a limited number of MOUD providers, which may preclude residents' use of other possible MOUD providers in their counties. Figure 13 shows the number of providers with whom SCAs hold contracts in each rural county in Pennsylvania. In 13 percent of counties, there are no local providers with whom SCAs hold contracts, meaning residents would need to seek MOUD treatment in another county if relying on SCA funds. Even if an SCA holds a contract with one provider, that provider may be further from someone than another provider without a contract, imposing higher transportation burdens.

Some SCAs do not fund all forms of MOUDs, either due to cost or because contracted providers do not offer them. Some SCAs reported they do not fund extended-release buprenorphine (Mercer, Cambria, Perry, Potter, Columbia, Montour, Snyder, and Union), and one SCA reported they do not fund methadone. SCAs also cannot use funding to cover MOUD treatments that require counseling, due to a DDAP rule. One participant explained that they personally believe counseling should be a part of MOUD treatment but feel it is unfair to exclude a person from medication access if they do not want counseling: "Trying to navigate that has been a bit of a nightmare for me... It's trying to figure out for that handful of people who are like, 'Yeah, I'm not going to do [counseling].' So are they just going to stay out there and keep using?" Participants also expressed concerns about the sustainability of SCA funding. Participants had seen an uptick in people requiring SCA funding, as they were losing Medicaid due to new eligibility rules. Future threats to Medicaid could put an even greater strain on SCAs to fund treatment.

[14] Some urban SCAs may impose caps on individual funding due to funding constraints; urban SCAs were not included in our survey.

**Figure 13: Number of Rural Counties with 0, 1, 2, 3, or 4 Contracts with MOUD Providers**




*Data Source: Original survey with SCAs conducted in 2024.*

There were even greater barriers for those patients whose income precluded them from both Medicaid and SCA funding. Providers noted that MOUD treatment continues to be expensive for people on private insurance and that treatment can sometimes be delayed due to certain insurance companies' requirement for prior authorization. One participant with living experience explained that he is not eligible for Medicaid and makes just $100 over the SCA's limit for financial assistance. Methadone treatment is even more expensive with his insurance than with self-pay, so he was putting a considerable amount of his paycheck towards the $100 weekly self-pay cost of methadone. Finally, MOUD providers explained that they were facing difficulties with Medicare not covering MOUD treatment for older adults; for example, the basic Medicare policy does not cover the injectable formulation of buprenorphine.

*Lack of Knowledge about MOUD Treatment*

A fourth barrier concerns lack of knowledge about MOUD treatment and local treatment resources. Especially when resources are limited and when people live far distances from them, people may not know what treatment resources are available. One MOUD provider told us, "Most of it does have to do with being rural and the difficulty getting services in that rural type setting. The knowledge of 'What do I do? Where do I go?' They just don't know." A provider in another county echoed, "A lot of people, I've noticed, aren't educated about the substance resources that's out here." A key need on the top of some providers' minds was to determine how to best spread the word about MOUD treatment resources in their communities.

*Lack of Access to Other Supportive Resources*

A fifth barrier concerns lack of access to related services and resources that can improve MOUD engagement. Research has shown that lacking stable housing, lacking childcare, and facing economic insecurity can limit sustained treatment engagement (Apsley et al. 2024; Liu et al. 2025). Participants across subsamples discussed the challenges of attaining these three basic needs in rural communities.

First, participants noted their communities lack affordable housing generally. Accessing limited affordable housing can be especially difficult for people seeking recovery who have a criminal record or a negative reputation in their small towns. One SCA explained, "We have a housing program through the State Opioid Response Funds, and that can pay for six months of them to be housed... But even with that, the housing is just not there. And if the housing is there, it's the landlords that might not be willing to rent to some of the folks that we serve. So, the availability of apartments or any of that housing is really slim." Multiple SCAs told stories of failing to find housing for certain people they were trying to support; even motels and shelters turned them away. One SCA told us one individual they were trying to help was sitting in jail solely because they could not find a place for them to stay.

A lack of recovery housing is also prevalent across rural counties; some of the least populous rural counties have no recovery housing. Some counties have used opioid settlement funds or other county funds to open transitional houses specifically for those with SUDs exiting county jails. Even still, available units may not match demand. Other participants worried that there was no local support for the construction of recovery housing despite a growing need. One SCA told us, "We don't have commissioners that are supportive of any types of plans to work on housing... We don't have no housing options."

Second, participants noted MOUD treatment can pose challenges to sustaining employment, which can threaten people's economic security. MOUD providers and participants with living experience told us about employers that either refuse to employ people using MOUD or do not support the requirements of MOUD treatment. One person with living experience recalled, "I got a really good job before I even started methadone. I was working there high, and they didn't say anything to me until I started taking methadone and I was drowsy. Then I got fired." A provider told us, "One particular employer in this area, they will hire our patients without an issue, but they do not like to let them out for appointments. They will still write them up."

Providers noted the importance of having local connections with employers to smooth pathways to employment for people in MOUD treatment. Treatment court professionals, in particular, explained they had success helping connect people in MOUD treatment with jobs by educating employers about OUD and MOUD treatment and providing personal recommendations. However, several MOUD providers have not had similarly positive experiences with employers, feeling they have been mostly ignored.

Finally, participants noted limited affordable childcare options in rural communities can impose barriers to MOUD treatment. One provider explained, “There's very limited childcare agencies or facilities in the area. The ones that are there, they fill up quickly. You have these moms at home all day with these younger, non-school aged kids... That lack of childcare really impedes a lot of individuals' ability to get services.”

*Inflexibility in MOUD Treatment*

A sixth barrier to MOUD accessibility is specific to methadone treatment, concerning OTPs’ use of take-home doses to limit time and transportation burdens. Both providers and patients reported that attaining take-homes can take considerable time. Most OTPs where our participants worked and received treatment require patients to be in treatment for 12 to 18 months to obtain 6-day take-homes. Their OTPs also cap take-home doses at 13 days, rather than extending to the federal and state allowance of 28 days. Participants noted considerable differences across OTPs as to how many take-home doses patients can get and after how long. One participant reported an OTP in a nearby urban county offers 6-day take-homes after only a month and eventually offers 28-day take-homes.

Methadone providers conveyed hesitation and reluctance to offer take-homes more quickly. Much of this hesitation came from confusion regarding changing regulations and anxiety about following the rules. One provider connected her hesitation to her local community as well. She felt giving more take-home doses could increase the chance of something harmful or negative happening with methadone in the community. Since there is already high stigma towards methadone in the community, she worried this possibility could hurt the OTP’s reputation and jeopardize their ability to provide methadone there.

Participants with living experience told us numerous stories about losing take-home doses for reasons they found unfair or unjust. Participants lost take-home doses due to moving to another community, changing their dose levels in accordance with their provider, accruing an unpaid balance at the clinic, missing a callback[15], or missing a dose due to transportation difficulties or illness. When this happened, not only did they have to visit the clinic more often again, they also had to shift work schedules and medical van appointments to align with their new dosing schedule. They were once again unable to go on vacations or have more freedom in their lives. One participant who recently had her take-home doses reduced told us: “I’m at a clinic that won't even go past a week [of take-homes]... It's a huge deal if you want to go and do anything in life. If you want to go away, you have to set up all this crap because you can only get a week at a time. I have to go two days a week. This summer, what do I do? Go on vacation for two days? I can't do everyday things that other people do because I'm handcuffed to this crap.”

[15] In a “callback,” an OTP calls a patient to bring in their take-homes for a count to ensure that they are using their take-homes appropriately. OTPs require random callbacks at a specified number of times a year.

Rules around losing take-home doses and the time it takes to regain them also vary by clinic. Participants felt that some OTPs, especially those in urban settings, are less likely to remove take-home doses. Ultimately, participants reported feeling discouraged by OTPs' treatment of take-home doses as privileges and punishments that can seem arbitrary. One participant explained, "We're the ones trying to work on our sobriety, but yet we have to jump through the hoops... If the government wouldn't make it so hard for us to be able to get what we need to sustain a clean life, I think they would see a bigger difference." Another applauded the federal and state governments for expanding take-home dose allowances, even if many OTPs had not yet adopted them: "I hope they continue to expand access and then not go backwards, because it seems like things are getting better. It's taking a while, but I hope they continue to expand access."

*Child Welfare Involvement*

A seventh barrier to MOUD accessibility concerns involvement, or fear of involvement, with Children and Youth Services (CYS). One participant with living experience told us she lost custody of her children due to a DUI-related charge she received leaving an OTP: "My kids were taken from me just from being on methadone... Me being on methadone, whoever knows uses it against me, like a whole weapon, every single time. I feel like I'm never going to get my kids fully back, because of the methadone." Providers explained working with CYS is a mixed bag—some case workers are supportive and understanding of MOUD treatment, while others are not. Since CYS offices in Pennsylvania are county-specific, these sentiments vary by county.

CYS involvement can impact people's MOUD treatment engagement when case workers encourage patients to step down their MOUD use. One provider told us, "I've had a couple of people interacting with [CYS], and as part of their plan to regain custody of their kids, they had to get off of methadone. They're not real supportive of it." A provider in another county said, "The question [that] always arrives is, 'When are they getting off the methadone?' With <redacted> County CYS, that was a question." Fear of CYS involvement can also make patients fearful of being honest with their providers. Another provider told us, "The moms we talk to unequivocally all state they feel very judged that, 'I've done drugs, and they're going to take my kid...' Because of that, they are very apprehensive to be completely transparent with us." Providers felt relationships between treatment and CYS were more adversarial than with other local systems.

*Identification Issues*

The final barrier cited was the need for identification to begin MOUD treatment. Some individuals seeking treatment may lack forms of necessary identification, like a photo ID or Social Security card, due to years of being unhoused or transient. This issue especially arises when patients have recently moved from another state. One provider explained, "I think IDs are a huge barrier, especially out of state IDs... We're not allowed

to accept people into our program without identification... The state is very specific on the criteria that they're requiring... It's just a lot."

*Accessibility of MOUD in the Rural Criminal Legal System*

Criminal legal systems can impose additional accessibility barriers on rural residents seeking MOUD treatment. We discuss additional barriers imposed by county jails first. County jails reported different rules concerning who may receive MOUDs in their facilities. Some jails only allow people to continue MOUD treatment if they had received a prescription within the last 30 days and do not test positive for any other substances upon admission. One warden said, "If you come in and you are using another illicit drug in conjunction with [MOUDs], then you are not covered under that umbrella of the ADA law. I'm very strict with that... Because as a warden, I have a fiscal responsibility to the county, to the taxpayers, to use their tax dollars appropriately." Other jails have relaxed the rule regarding a recent prescription, allowing those with a prescription up to 90 days before admission to continue MOUDs. For jails offering inductions, testing positive for illicit substances upon admission is not a criterion for exclusion from an MOUD program.

County jails also differ in the rules they impose in MOUD treatment programs. These rules can make treatment engagement more or less desirable. Most jails require counseling, citing the belief that MOUDs only work when used in combination with counseling. Those who require counseling have found that requirement leads some individuals to leave the program. One participant told us, "What we're seeing is, now that we've added the counseling aspect, we're getting pushback from the inmate population, 'I don't want to participate.' So then in turn, what happens is we end up having to remove them from the program." Some jails do not require people to receive counseling to receive MOUD; they leave this decision up to the individual, allowing more to participate.

Jails also differ in when they run MOUD treatment programs. Some deliver medications as early as 5:00 AM, while others deliver them later in the morning. One jail said those who run programs early do so to squeeze out potential participants: "That's why you have inmates go to Sublocade. They do not want to get up. And that's an operational squeeze on them like, "Hey, you can get your Sublocade injection at 2:00 in the afternoon or you can get up every morning at 5:00 to go stand in line... Inmates, they don't generally want Sublocade. They ask for it when the timing of med pass makes it inconvenient for them."

Jails may also offer different doses of MOUDs. One jail told us people switched from sublingual buprenorphine to the injectable because of the low dose they provide of sublingual: "The inmates don't seem to like the pills because we're only sustaining them. We're not giving it to them two or three times a day. We're only giving it to them once a day, eight milligrams, one time a day. They don't like that. They want the full dose. Right? So a lot of them will opt to get the shot instead."

Finally, jails impose different rules for whether and when people can be kicked out of MOUD treatment. Some jails only remove people for diversion, while others remove people for other types of behavioral issues, such as “acting out while in MAT.” Some jails remove people from MOUD programs entirely when they commit these transgressions, while others try sanctions but not removal. One jail told us, “You get three strikes and you're out... We have a very strict protocol for it.” Another explained, “One strike was you got back with <the provider> and you had counseling. The second strike, we got with the provider, and we considered cutting her dose in half. Then on the third strike, we would consider with the provider removing them. We have since backed off that a bit, because we don't want to open ourselves up for lawsuit because we're finding that they don't want you to remove people from the program.” Some jails suggested switching people with repeated transgressions to injectable buprenorphine, which is more difficult to divert, would be preferable to removing them from the program entirely. However, the high cost of the injectable formulation makes this strategy unattainable for most jails.

When people in MOUD treatment are released from jail, continued MOUD accessibility requires close collaboration between multiple entities. One warden explained, “Everybody gets kind of territorial at times, and I think the best way that we can do things is to step away from that territorialism. I should be able to give you a call and let you take over.... Everybody seems to work in silos.” Participants emphasized MOUD treatment programs in jails require regular meetings and open, collaborative relationships between jail staff and treatment providers. SCAs can also act as important mediators between jails and providers and help facilitate the reentry process. Jails involving local treatment providers in MOUD provision, versus larger non-local companies, found this facilitates treatment continuity, as people can continue seeing those same providers after reentry.

Treatment courts can also impose some additional accessibility barriers on participants. Some treatment courts require participants to see a certain provider for MOUD treatment. Others limit participants’ use of telehealth; for example, one court reported they do not allow telehealth for counseling. Each of these requirements can heighten transportation barriers, which are already quite steep for treatment court participants given the high number of other appointments they must make (i.e., treatment court dates, regular random drug screens, and multiple weekly 12-step meetings).

Across both jails and treatment courts, stigma among staff can also limit participants’ ability, interest, or willingness to engage in MOUD treatment. Several jail wardens acknowledged they did not want to start MOUD treatment programs; they had delayed until the last possible minute and eventually resigned themselves to doing so. These participants expressed some hesitation and lack of belief in the efficacy of MOUD treatment. Wardens also acknowledged stigma remained among corrections officers. One warden explained diminishing stigma required considerable effort among their

leadership in educating staff. Lack of buy-in from jail leadership and/or staff can mean MOUD treatment programs are not as available or acceptable as they may seem.

This extends to hesitation or lack of buy-in among judges and staff in treatment courts as well. One provider explained, in accordance with the new clarification regarding the ADA, their local treatment court is allowing MOUD use. But she clarified, "Although when I say they're more open to it, doesn't mean that they like it." Another provider said, "I think even in <redacted> County's drug court program... they have allowed some people to stay on the methadone, but I've heard murmurings of them telling patients that they had to get off the methadone to stay in the program." Thus, while these practices may not be allowed officially, they may still happen informally, or people may be encouraged to cease MOUD treatment due to negative interactions with staff.

**Accessibility of Harm Reduction Services Across Rural Pennsylvania**

Our participants also recognized numerous barriers that limited access to harm reduction services in their communities. Some of these barriers are similar to those impacting MOUD access, while others are unique. In this section, we outline the five common accessibility barriers cited across interview sub-samples.

*Lack of Knowledge about Harm Reduction*

First, there was a bifurcation in our sample of participants with living experience regarding familiarity with harm reduction. Some participants regularly carried naloxone, had used naloxone to revive others, and had used testing strips. However, others had extremely limited knowledge on what harm reduction services entailed. A few people were unfamiliar with the term "harm reduction" when we asked them about it. One participant remarked, "I don't think there's as much information out there as there could be." Some participants were familiar with naloxone but not testing strips or SSPs.

Lack of knowledge about harm reduction or local harm reduction services did not reflect a disinterest in harm reduction principles. When we asked one person whether they would like information on how to access naloxone, they said "Yeah, absolutely. Because there's so many times I've been out, when I've had to give CPR, and stuff like that, because it just happens so regularly, you know what I mean?" Others desired more widely available trainings on how to use harm reduction tools; one person stated they found the instructions that come with test strips confusing. Another person suggested trainings could be held at group counseling sessions and in recovery support groups.

These conversations showed us considerable work remains to ensure that people who use drugs are familiar with harm reduction tools and services, know where to access them (either via mail or in their communities), and know how to use them.

*Lack of Visibility of Harm Reduction Services*

There was also a bifurcation in our sample of participants regarding knowledge of where to find harm reduction services. In some counties, participants felt the presence of harm reduction tools had expanded drastically. One participant told us, “A positive way our community has [responded] is they have definitely opened up a bunch of places to get Narcan or even xylazine strips... places where you can go get Narcan 24/7.” In another county, a participant said, “There is actually a pickup box that somebody will fill up and then you can go there and get it and it's anonymous.... It is outside of a church. I'm glad to see as far as that goes, we're heading in the right direction.”

Some harm reduction providers similarly reported considerable expansions in the visibility of harm reduction tools across their communities. One provider explained, “We have been blanketing the area with Narcan.” Several providers placed boxes for people to access naloxone any time (i.e., Naloxboxes) at numerous types of community institutions, like pantries, libraries, restaurants, churches, schools, and county offices. To reach smaller, more remote communities, providers found success providing naloxone and test strips by tabling at community events like festivals or food distributions or outside community institutions like grocery stores.

In other counties, people did not believe anyone was conducting harm reduction work. They were unaware of where they could get harm reduction tools. One participant told us, “I don't hear any conversation about it out here. I don't see it. Even when I was using, I barely came across Narcan... I don't see any of that out here. Testing strips, or any of that.” In another county, one participant said, “I don’t really know of any places in our community that would have access to it [harm reduction tools]... I don't think that they have naloxone in many places. I don't think you're going to go to a restaurant and be like, ‘Oh crap, this dude's overdosing. Do you have naloxone?’ And they're like, ‘Yeah, sure.’”

One participant felt rural counties around hers had harm reduction initiatives, while hers lacked them: “I feel like our community is very behind, and I feel like there's not that much access to things like that. I don't see what's taken them so damn long. I don't understand why we don't have all those things. And you see all these other communities, even just as far as <redacted> and <redacted> and <redacted>, they're up with the times. Why aren't we?” From SEOW’s 2024 survey with SCAs, we do know that harm reduction tools are present in every rural county in Pennsylvania. However, our interviews show that many people who recently used opioids and presently use MOUDs are not aware of this.

All participants with living experience believed harm reduction tools should be available in more places, particularly in everyday community institutions. One explained, “It’d be nice to get them somewhere other than a clinic or a medical place.” Another similarly said, “A lot of people aren’t comfortable going to the pharmacy and getting it [naloxone]. There [should be] some way that they could come up with other ways to distribute it.” One participant had seen a harm reduction vending machine in Harrisburg

and remarked “Man, I wish they had one of these in <redacted> County... Instead of having them in cities, it needs to be in these small towns where the epidemic started.”

Participants asserted that people should not have to ask for these tools but should just be able to pick them up. One person explained, “If they're trying to hide it, which most drug addicts are, they don't want people to know that they would need it or want it.” Some MOUD providers told us they have naloxone and testing strips on site, but participants with living experience who go to those clinics were unaware. When we told participants their clinics carry these tools, they were surprised. Similarly, we visited an organization that provides harm reduction services who claimed to have naloxone available, but we did not see it physically out; we learned from another participant that the organization typically keeps it in an office where people must ask to receive it.

Participants appreciated when MOUD providers encouraged them to take naloxone and/or testing strips. A few participants told stories of using naloxone they had originally been reluctant to take but did with a provider’s encouragement. One person recalled, “I just went in probably two weeks ago, and I saw the doctor at the clinic... He was like, ‘Hey, do you have Narcan?’ I told him no. And he's like, ‘Well, let's get you a box. You should take some.’ I turned it down at first because I'm not using, I'm not around anybody that's using, but they said just to take it and hold on to it... We ended up having to use it on somebody. So, I'm glad I did take it... because, if not, he would've definitely died.”

*Harm Reduction Stigma*

Our interviews illuminated two factors that contribute to the invisibility of harm reduction services. First is community stigma towards harm reduction. Both harm reduction providers and people with living experience reported a lack of community support for harm reduction programs. One participant with living experience told us, “Even just with providing Narcan, a lot of people are super uncomfortable with that, and they don't feel like people, addicts, should be brought back or be saved because they're using. A lot of people feel like the addicts should just die.”

Some counties have made greater progress destigmatizing harm reduction than others. According to harm reduction providers, less populous counties tend to be further behind in accepting harm reduction. One provider relayed a story of being run out of a fair in one county: “It was a weeklong tractor fair in <redacted> County. And there I am talking about what we do and promoting Narcan. Those fools kicked us out. Kicked us out. I had somebody come up in my face, ‘How dare you come here? Let them die.’”

Even law enforcement and EMS in these counties still show some resistance to using naloxone. Some providers reported they had to “walk on eggshells” with these entities. SCAs, for example, collaborate with other local government agencies in multiple ways; some worried about jeopardizing other services by pushing harm reduction acceptance too much. One SCA told us bringing in an outside organization to teach harm reduction education could be more successful, as they could be firmer without fears of hurting

relationships. Some providers desired resources outlining best practices for harm reduction education in more conservative rural communities.

Even in those counties that have had success distributing naloxone in many places, there are still specific entities unwilling to participate. This unwillingness often is rooted in individual beliefs. For example, while libraries in one county were willing to host NaloxBoxes, in a similarly sized county not too far away, the library system refused to house them. One provider noted locally-owned businesses tend to be more supportive of hosting NaloxBoxes than chain stores. In multiple counties, providers noted Sheetz is a hotspot for overdoses yet refuses to stock free naloxone.

Providers that have had success with naloxone distributions noted similar support was lacking for testing strips. While stigma towards naloxone is slowly breaking down, it remains high for testing strips. One provider noted, “Hopefully we'll get to a point where any sort of vending machines, distribution devices cannot only just include naloxone but also include the drug checking strips as well without creating sort of panic or overreaction within the community.” While naloxone was becoming more visible across this provider’s county, testing strips were only available in a small number of locations.

Community stigma towards harm reduction can also heighten people’s fears of asking for harm reduction tools. Providers believed in-person tabling events can successfully spread education about harm reduction to the general community but questioned whether such events were effective for reaching the highest-risk individuals. Continued stigma makes it even more important that harm reduction tools are available to people through methods that do not require them to ask, such as NaloxBoxes or vending machines.

*Limited Local Capacity*

The second factor limiting visibility of harm reduction services is limited local capacity of organizations who provide these services. Distributing harm reduction tools is time- and staff-intensive. Providers described sitting for hours at tabling events, approaching businesses door-to-door, and engaging in sustained conversations with businesses and community members to educate them on harm reduction.

SCAs with smaller staff and budgets—those who tend to serve less populous, more remote counties—struggle to keep up with those with larger staff and budgets. While larger SCAs often have designated staff members to conduct community engagement work, smaller SCAs do not. One smaller SCA has been stocking naloxone and testing strips at their location but has not yet started distributing kits across their county. The director told us, “I haven't gotten the kits put together. We're supposed to have a part-time intern, so I'm going to put her in charge of putting them together for me.”

Outside of SCAs, other harm reduction organizations in rural areas also struggle with funding capacity to expand their programs’ reach. One provider told us, “If I had funding, we'd probably travel more in the community. I'd do more outreach. But we are struggling financially. This is probably the lowest our cash has ever been.” She believes

bringing services to the most vulnerable residents requires meeting them where they are at, but she acknowledged this is impossible given the capacity constraints of her organization.

Another drawback of many rural counties' sole reliance on SCAs for harm reduction services is the limitations that SCAs face providing services outside of their scope. When we interviewed participants in 2024 and 2025, some SCAs had received wound care kits to distribute on-site or give to other organizations. Some reported they were still waiting to receive these supplies from DDAP. While SCAs could provide these kits, they said they could not help people use them, as this veered into medical care. One person with living experience told us his girlfriend had developed xylazine wounds and accessed a wound care kit but had to teach herself how to care for them. Non-governmental organizations that hold SCA contracts reported having a bit more leeway than government entities serving as SCAs. It is not clear whether these non-governmental SCAs are helping more with wounds than governmental SCAs, but their greater flexibility may allow them to.

*Lack of Transportation*

In addition to limiting MOUD treatment engagement, lack of transportation also limits access to harm reduction services. While Medicaid transportation can be used for medical appointments—including for MOUD treatment—it cannot be used to pick up harm reduction tools. In counties where people must physically go to an SCA's location, this would be impossible using Medicaid transportation. Participants also noted that Medicaid transportation cannot be used to visit other types of institutions that support people with SUDs and reduce harm—such as drop-in centers and community recovery organizations.

This barrier underscores the importance of having harm reduction tools widely dispersed throughout counties to limit the distance any resident must travel to get to a distribution site. It also illuminates the need to better advertise services that provide harm reduction tools by mail. One participant told us they received a flyer from a local organization advertising naloxone that could be delivered by mail; they were amazed they could place a free order and have it on hand. Even if this delivery service is not offered locally, there are national organizations which can serve anyone anywhere.

## Policy Considerations

Our findings point to an evolving, complex landscape of substance use and substance use services in rural Pennsylvania. There is considerable variability in the availability of MOUD and harm reduction services across rural counties. Participants also noted significant barriers that impede rural residents' ability to engage with these services. In this section, we outline policy recommendations at the state and local levels that could further expand access to MOUD and harm reduction services in rural Pennsylvania.

**Recommendations for Expanding Access to MOUD Treatment**

- *Expanding Mobile Services.* Mobile van services that dispense methadone and/or provide monthly buprenorphine injectables can improve MOUD treatment access in rural areas (Chan et al. 2021; Lofwall and Fanucchi 2021). One mobile unit recently was launched to serve Columbia, Montour, Northumberland, Schuylkill, Snyder, and Union Counties. DDAP could support the licensing of additional mobile units through technical assistance and seed funding. Opioid settlement dollars are one possible source of funds for this purpose.
- *Expanding Integrated Care Models.* Encouraging more primary care providers to prescribe buprenorphine could increase the number of MOUD providers in rural areas (Bridges et al. 2023; Cole et al. 2019; Hser et al. 2024). Agencies such as DOH, DDAP, and DHS could support health care providers interested in providing buprenorphine treatment through technical assistance, education, and seed funding. These providers could also offer monthly buprenorphine injectables through mobile units used for other health care purposes. Opioid settlement dollars are also a possible source of funds for this intervention.
- *Increasing Awareness of Existing Transportation Programs*. Spreading awareness of local transportation assistance options can increase treatment engagement (Chaiyachati et al. 2025). County governments, along with DHS and Department of Transportation (PennDOT), could work with treatment providers to expand knowledge of the Medicaid assistance van program and other county transportation programs.
- *Creating New Transportation Options*. Current transportation systems fall short of adequately supporting individuals in accessing MOUD treatment. DDAP could support treatment providers in implementing their own transportation programs, for example, by providing funds for purchasing vans, as many Centers of Excellence did with COE funding. Opioid settlement dollars are a possible source of funds for this intervention.
- *Providing Training on Telehealth.* Telehealth can also reduce transportation barriers, but its use in rural Pennsylvania remains limited, despite research showing its effectiveness in promoting treatment engagement (Weintraub et al. 2021). DDAP and DOH could support treatment providers and other health care providers in expanding the effective use of telehealth through technical assistance and education. SCAs could help providers build connections with community institutions to serve as digital hubs for patients to access digital devices and the Internet.
- *Expanding Access to SCA Funding*. SCA funding offers a crucial lifeline for individuals without insurance. However, SCA funding can only be used with a limited number of contracted providers and requires a counseling component. DDAP could consider helping SCAs map contracted providers to determine geographic areas where other provider contracts could be established. DDAP could also consider allowing SCAs to fund MOUD treatment that does not require counseling. Other local government

agencies could assist SCAs in spreading awareness of SCA treatment funding as an option for people lacking insurance.

- *Navigating a Changing Medicaid Landscape.* Many people receiving MOUD treatment rely on Medicaid (Mitragotri and Zhu 2025). The federal government in 2025 stands poised to reduce access to Medicaid by imposing national work requirements. Such a move could remove Medicaid coverage from thousands of adults receiving MOUD treatment in Pennsylvania. DDAP and DOH should consider how to ensure continuity of care for those who lose Medicaid coverage if these federal changes take effect.
- *Expanding Public Education on MOUD Treatment.* There is considerable community stigma towards MOUD treatment in rural areas. Both general stigma reduction efforts and targeted stigma reduction trainings for law enforcement, health care providers, EMS, and employers conducted by agencies such as DDAP, DOH, and L&I could include educational materials specific to MOUDs. These agencies could also look to innovative program delivery models to reach new audiences.
- *Creating MOUD-Accepting Recovery Support*. Some rural areas lack recovery support groups that are accepting of MOUD use. SCAs could help establish MOUD-friendly recovery support groups in counties where such groups do not already exist. Some counties have used opioid settlement dollars for this purpose.
- *Expanding Housing Options for People Entering Recovery*. There is inadequate access to stable housing for people entering recovery in rural communities, especially for those with criminal legal involvement. Yet stable housing is important for MOUD treatment engagement (Liu et al. 2025). DDAP, in partnership with SCAs, could assess the need for rural recovery housing programs and assemble appropriate state and local agencies to recruit or establish programs as needed. Opioid settlement dollars could finance the development of such programs.
- *Calling in CYS.* Treatment providers note relationships with the criminal legal system have improved, while relationships with CYS remain adversarial. Local governments could consider inviting CYS to local opioid response coalitions to improve interagency collaboration. DDAP and SCAs could also identify or develop CYS-specific education around MOUD stigma reduction.
- *Supporting OTPs' Uptake of New Recommendations.* Access to take-home medications can improve methadone treatment engagement while not compromising treatment integrity (Hoffman et al. 2022; Levander et al. 2021). Yet, many rural OTPs have not adopted updated state and federal regulations. DDAP could provide technical assistance to support OTPs in adopting these flexibilities. DDAP could also collect data on take-home policies in the OTP licensure process to understand disparities in these practices across the state.
- *Expanding MOUD Access in County Jails.* County jails are a crucial setting where people in need of MOUD treatment can be connected to care. In states that have legislatively mandated MOUD treatment access in county jails, acceptance of these programs grew over time; however, state-provided resources and education were

essential (Pivovarova et al. 2022; Victor et al. 2022). Sharing of best practices across jails also helped program implementation (Evans, Pivovarova, et al. 2022). In accordance with the ADA, the Commonwealth could work towards a legislative mandate for county jails to provide buprenorphine and methadone access. A mandate could consider whether it is an ADA violation to deny treatment to those who test positive for illicit substances upon entry. It could also consider how recent of a prescription people must have to be eligible for MOUD continuation, and it could consider whether it is an ADA violation to remove people from treatment. There must also be state support via both education and funding. House Bill 561, introduced in the 2025-2026 regular session, would allow counties to use Act 80 funds for methadone and buprenorphine provision in county jails (Connery 2015; Wakeman et al. 2020). The prime sponsor of this bill, Rep. Madden, represents a rural county herself (Monroe). Appropriations to this grant program could also increase if expectations for county jails increase. While opioid settlement funds can offset MOUD program costs now, the state could help counties formulate sustainable funding plans. The Pennsylvania Commission on Crime and Delinquency (PCCD) could also coordinate education and technical assistance to increase understanding of MOUD among jail staff and help jail leadership learn best practices.

- *Expanding MOUD Access in Treatment Courts.* Treatment court is also an important setting to connect people in need of MOUD treatment to care. Treatment courts could consider adding a discussion of MOUD treatment to initial and ongoing case management services to assess whether it is desirable and appropriate for the individual. Case management could help connect interested individuals to the MOUD provider most accessible to them.

**Recommendations for Expanding Access to Harm Reduction Services**

- *Expanding the Good Samaritan Law.* Participants expressed fear of law enforcement in cases of overdose, despite the Good Samaritan Law. Other states have more expansive versions of this law that prohibit arrest when calling for overdose-related assistance; these more expansive versions are associated with decreases in overdose deaths (Hamilton et al. 2021). For example, the General Assembly could expand the Good Samaritan Law to prevent arrests of all individuals involved when there is a call for help amid an overdose.
- *Legalizing SSPs.* Participants observed growing risks of HIV and HCV and recognized the need for SSPs in their communities. House Bill 809, introduced in the 2025-2026 regular session, would amend the Controlled Substance, Drug, Device, and Cosmetic Act to legalize SSPs. The prime sponsor of this bill, Rep. Struzzi, represents a rural county himself (Indiana). If passed, SCAs could help identify appropriate organizations in their counties, such as FQHCs, who could host SSPs. Opioid settlement funds could help finance the development of new SSPs in rural counties.

- *Widening Availability of Naloxone and Testing Strips.* Participants wanted harm reduction tools to be more widely available across their communities. SCAs could collaborate with nontraditional settings like churches, food pantries, and libraries to host NaloxBoxes or vending machines where naloxone can be accessed by anyone at any time. NaloxBoxes could also be expanded to offer both fentanyl and xylazine testing strips and strips testing for new and emerging substances like nitazenes. DDAP could advocate with larger companies resistant to stocking harm reduction tools, such as Sheetz, to help achieve greater buy-in. Opioid settlement funds could be used to install NaloxBoxes and/or vending machines across rural counties.
- *Increasing Local Capacity.* Some rural SCAs struggle to distribute harm reduction tools widely due to limited staff capacity. SCAs could establish local harm reduction boards that empower residents to be harm reduction leaders. Board members could table at events, advocate for businesses and organizations to carry harm reduction tools, and spread the word about harm reduction services in their communities. Board members could be recruited to represent diverse communities across the county.
- *Providing In-Person and Virtual Harm Reduction Trainings.* SCAs espoused the importance of being able to distribute naloxone without requiring associated training. However, people with living experience desired the option to receive training on harm reduction tools. SCAs could offer in-person and virtual trainings, especially for group counseling sessions and recovery support groups. If SCAs do not have the capacity to do so, DDAP could offer virtual trainings that SCAs could connect local groups to.
- *Expanding Public Education on Harm Reduction.* Participants perceived high stigma towards harm reduction in their communities. Some participants with living experience themselves lacked understanding of harm reduction. Both general stigma reduction efforts and targeted stigma reduction trainings for law enforcement, health care providers, and EMS conducted by agencies such as DDAP and DOH could include education on all harm reduction tools and services, not just naloxone.
- *Expanding Transportation Services for Harm Reduction Purposes*. While Medicaid transportation can be used to access MOUD treatment, it cannot be used to access other forms of harm reduction services or recovery support. DHS and county transportation offices could expand the Medicaid transportation program to allow travel to other important OUD resources, such as community recovery organizations, drop-in centers, SCA offices, and SSP locations.

## Conclusion

After years of escalating opioid-related harm, 2024 ushered in positive news. The most recent national and state data show opioid overdose deaths have finally started to decline (CDC 2025b). Growing access to MOUDs and harm reduction services have played a significant role in this decline (CDC 2025a). But as this report has shown, considerable barriers to accessing MOUD and harm reduction services remain in rural

Pennsylvania. And, in the face of federal budget cuts to agencies like SAMHSA, which provides significant funding for treatment and harm reduction, Pennsylvania must be prepared to fill growing gaps. Finding ways to get evidence-based tools in the hands of rural residents who use opioids remains an imperative.

In recent years, Pennsylvania has taken significant steps towards making MOUD treatment and harm reduction services more widely available and accessible. Nonetheless, there is room for improvement. There are evidence-based harm reduction services that are still illegal in Pennsylvania. There is a need to encourage health care providers to offer MOUDs and to utilize practices that make MOUD treatment more accessible. There is a need for stigma reduction education and for community-based interventions to support people seeking MOUD treatment. And finally, there is wide disparity in the availability of MOUD treatment across rural criminal legal systems. Pennsylvania is well-positioned to act as a leader among other states and continue to expand access to life-saving treatment and harm reduction services.

## References

Abadie, R., C. Gelpi-Acosta, C. Davila, A. Rivera, M. Welch-Lazoritz, and K. Dombrowski. 2018. "'It Ruined My Life': The Effects of the War on Drugs on People Who Inject Drugs (PWID) in Rural Puerto Rico." *International Journal of Drug Policy* 51:121–27. doi:10.1016/j.drugpo.2017.06.011.

Abdul-Quader, Abu S., Jonathan Feelemyer, Shilpa Modi, Ellen S. Stein, Alya Briceno, Salaam Semaan, Tara Horvath, Gail E. Kennedy, and Don C. Des Jarlais. 2013. "Effectiveness of Structural-Level Needle/Syringe Programs to Reduce HCV and HIV Infection Among People Who Inject Drugs: A Systematic Review." *AIDS and Behavior* 17(9):2878–92. doi:10.1007/s10461-013-0593-y.

Adams, Alison, Sarin Blawatt, Tianna Magel, Scott MacDonald, Julie Lajeunesse, Scott Harrison, David Byres, Martin T. Schechter, and Eugenia Oviedo-Joekes. 2023. "The Impact of Relaxing Restrictions on Take-Home Doses during the COVID-19 Pandemic on Program Effectiveness and Client Experiences in Opioid Agonist Treatment: A Mixed Methods Systematic Review." *Substance Abuse Treatment, Prevention, and Policy* 18(1):56. doi:10.1186/s13011-023-00564-9.

Administrative Offices of the Pennsylvania Courts. 2024. "Problem-Solving Courts Program Coordinators." https://www.pacourts.us/Storage/media/pdfs/20211025/210557-coordinatorscontactlist-updated10.25.21.pdf.

Anderson, Claire, and Susan Kirkpatrick. 2016. "Narrative Interviewing." *International Journal of Clinical Pharmacy* 38(3):631–34. doi:10.1007/s11096-015-0222-0.

Andrews, Christina M., Harold A. Pollack, Amanda J. Abraham, Colleen M. Grogan, Clifford S. Bersamira, Thomas D'Aunno, and Peter D. Friedmann. 2019. "Medicaid Coverage in Substance Use Disorder Treatment after the Affordable Care Act." *Journal of Substance Abuse Treatment* 102:1–7. doi:10.1016/j.jsat.2019.04.002.

Andrilla, C. Holly A., Cynthia Coulthard, and Eric H. Larson. 2017. "Barriers Rural Physicians Face Prescribing Buprenorphine for Opioid Use Disorder." *Annals of Family Medicine* 15(4):359–62. doi:10.1370/afm.2099.

Apsley, Hannah B., Kristina Brant, Sarah Brothers, Eric Harrison, Emma Skogseth, Robert P. Schwartz, and Abenaa A. Jones. 2024. "Pregnancy- and Parenting-Related Barriers to Receiving Medication for Opioid Use Disorder: A Multi-Paneled Qualitative Study of Women in Treatment, Women Who Terminated Treatment, and the Professionals Who Serve Them." *Women's Health* 20:17455057231224181. doi:10.1177/17455057231224181.

Aspinall, Esther J., Dhanya Nambiar, David J. Goldberg, Matthew Hickman, Amanda Weir, Eva Van Velzen, Norah Palmateer, Joseph S. Doyle, Margaret E. Hellard, and Sharon J. Hutchinson. 2014. "Are Needle and Syringe Programmes Associated with a Reduction in HIV Transmission among People Who Inject Drugs: A Systematic Review and Meta-Analysis." *International Journal of Epidemiology* 43(1):235–48. doi:10.1093/ije/dyt243.

Bahji, Anees, Bobby Yanagawa, and Wiplove Lamba. 2020. "Harm Reduction for Injection Drug Users with Infective Endocarditis: A Systematic Review." *Canadian Journal of Addiction* 11(2):13. doi:10.1097/CXA.0000000000000080.

Baker, Logan S., Walter Smith, Tauna Gulley, and Margaret M. Tomann. 2020. "Community Perceptions of Comprehensive Harm Reduction Programs and Stigma towards People Who Inject Drugs in Rural Virginia." *Journal of Community Health* 45(2):239–44. doi:10.1007/s10900-019-00732-8.

Bellos, Sarah. 2024. *Medication for Opioid Use Disorder In Pennsylvania Jails and Prisons*. Pennsylvania Institutional Law Project. https://pilp.org/moud.

Bhai, Moiz, Benjamin J. McMichael, and David T. Mitchell. 2025. "Impact of Fentanyl Test Strips as Harm Reduction for Drug-Related Mortality." *Medical Care Research and Review* 82(3):240–51. doi:10.1177/10775587251316919.

Bielenberg, Jennifer, Gabrielle Swisher, Anna Lembke, and Nancy A. Haug. 2021. "A Systematic Review of Stigma Interventions for Providers Who Treat Patients with Substance Use Disorders." *Journal of Substance Abuse Treatment* 131:108486. doi:10.1016/j.jsat.2021.108486.

Bluthenthal, Ricky N., Rachel Anderson, Neil M. Flynn, and Alex H. Kral. 2007. "Higher Syringe Coverage Is Associated with Lower Odds of HIV Risk and Does Not Increase Unsafe Syringe Disposal among Syringe Exchange Program Clients." *Drug and Alcohol Dependence* 89(2–3):214–22. doi:10.1016/j.drugalcdep.2006.12.035.

Boyd, Jennifer, Martha Carter, and Adam Baus. 2024. "Access to MAT: Participants' Experiences With Transportation, Non-Emergency Transportation, and Telehealth." *Journal of Primary Care and Community Health* 15. https://journals.sagepub.com/doi/full/10.1177/21501319241233198.

Brant, Kristina. 2025. "Avoiding Support, Avoiding Punishment: Fear of the Child Welfare System in the Opioid Era." Pp. 134–53 in *Policing Not Protecting Families: The Child Welfare System as Poverty Governance*. New York, NY: NYU Press.

Bridges, Nora C., Rachel Taber, Abigail L. Foulds, Todd M. Bear, Renee M. Cloutier, Brianna L. McDonough, Adam J. Gordon, Gerald T. Cochran, Julie M. Donohue, Dale Adair, Ellen DiDomenico, Janice L. Pringle, Walid F. Gellad, David Kelley, and Evan S. Cole. 2023. "Medications for Opioid Use Disorder in Rural Primary Care Practices: Patient and Provider Experiences." *Journal of Substance Use and Addiction Treatment* 154:209133. doi:10.1016/j.josat.2023.209133.

Bunting, Amanda M., Carrie B. Oser, Michele Staton, Katherine S. Eddens, and Hannah Knudsen. 2018. "Clinician Identified Barriers to Treatment for Individuals in Appalachia with Opioid Use Disorder Following Release from Prison: A Social Ecological Approach." *Addiction Science & Clinical Practice* 13(1):23. doi:10.1186/s13722-018-0124-2.

Carroll, Jennifer J. 2024. "Xylazine-Associated Wounds and Related Health Concerns Among People Who Use Drugs: Reports From Front-Line Health Workers in 7 US

States." *Substance Use & Addiction Journal* 45(2):222–31. doi:10.1177/29767342231214472.

CDC. 2011. "Vital Signs: Overdoses of Prescription Opioid Pain Relievers --- United States, 1999--2008." *Morbidity and Mortality Weekly Report* 60(43):1487–92.

CDC. 2014. "Increases in Heroin Overdose Deaths — 28 States, 2010 to 2012." *Morbidity and Mortality Weekly Report* 63(39):849.

CDC. 2017. "Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015." *Morbidity and Mortality Weekly Report* 66(26):697–704. doi:10.15585/mmwr.mm6626a4.

CDC. 2024. "Data Summary: Vulnerable Areas for Infectious Diseases in Persons Who Inject Drugs." https://www.cdc.gov/persons-who-inject-drugs/vulnerable/index.html.

CDC. 2025a. "CDC Reports Nearly 24% Decline in U.S. Drug Overdose Deaths." https://www.cdc.gov/media/releases/2025/2025-cdc-reports-decline-in-us-drug-overdose-deaths.html.

CDC. 2025b. "Provisional Drug Overdose Death Counts." https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm.

Center for Rural Pennsylvania. n.d. "Rural Urban Definitions." https://www.rural.pa.gov/data/rural-urban-definitions.

Chaiyachati, Krisda H., Nandita Mitra, David Grande, Sheila Kelley, Kaitlyn Shultz, and Rebecca E. Stewart. 2025. "Text Message Reminders About Free Transportation for Outpatient Substance Use Disorder Treatment: A Pilot Randomized Encouragement Study." *Journal of General Internal Medicine*. doi:10.1007/s11606-025-09508-4.

Chan, Brian, Kim A. Hoffman, Christina Bougatsos, Sara Grusing, Roger Chou, and Dennis McCarty. 2021. "Mobile Methadone Medication Units: A Brief History, Scoping Review and Research Opportunity." *Journal of Substance Abuse Treatment* 129:108483. doi:10.1016/j.jsat.2021.108483.

Choi, Sugy, David Rosenbloom, Michael D. Stein, Julia Raifman, and Jack A. Clark. 2022. "Differential Gateways, Facilitators, and Barriers to Substance Use Disorder Treatment for Pregnant Women and Mothers: A Scoping Systematic Review." *Journal of Addiction Medicine* 16(3):e185. doi:10.1097/ADM.0000000000000909.

Cloud, David H., Umedjon Ibragimov, Nadya Prood, April M. Young, and Hannah L. F. Cooper. 2019. "Rural Risk Environments for Hepatitis c among Young Adults in Appalachian Kentucky." *The International Journal on Drug Policy* 72:47–54. doi:10.1016/j.drugpo.2019.05.006.

Cole, Evan S., Ellen DiDomenico, Gerald Cochran, Adam J. Gordon, Walid F. Gellad, Janice Pringle, Jack Warwick, Chung-Chou H. Chang, Joo Yeon Kim, Julie Kmiec, David Kelley, and Julie M. Donohue. 2019. "The Role of Primary Care in Improving Access to Medication-Assisted Treatment for Rural Medicaid Enrollees with Opioid Use Disorder." *Journal of General Internal Medicine* 34(6):936–43. doi:10.1007/s11606-019-04943-6.

Commonwealth of Pennsylvania. 2025. “Opioid Data Dashboard.” https://data.pa.gov/stories/s/Pennsylvania-Opioids/9q45-nckt/.

Commonwealth of Pennsylvania. n.d. “Centers of Excellence.” https://www.pa.gov/agencies/dhs/resources/mental-health-substance-use-disorder/substance-use-disorder/centers-of-excellence.html.

Connery, Hilary Smith. 2015. “Medication-Assisted Treatment of Opioid Use Disorder: Review of the Evidence and Future Directions.” *Harvard Review of Psychiatry* 23(2):63. doi:10.1097/HRP.0000000000000075.

Cooper, Hannah Lf, David H. Cloud, Patricia R. Freeman, Monica Fadanelli, Travis Green, Connor Van Meter, Stephanie Beane, Umedjon Ibragimov, and April M. Young. 2020. “Buprenorphine Dispensing in an Epicenter of the U.S. Opioid Epidemic: A Case Study of the Rural Risk Environment in Appalachian Kentucky.” *The International Journal on Drug Policy* 85:102701. doi:10.1016/j.drugpo.2020.102701.

County Commissioners Association of Pennsylvania. 2025. “Prison Directory.” https://www.pacounties.org/getmedia/aa6f1e8b-a0da-4dda-b8ac-684b01287af3/PIMCC-Prison-Directory-1-2025.pdf.

Davis, Alissa, Kristi Lynn Stringer, Mari-Lynn Drainoni, Carrie B. Oser, Hannah K. Knudsen, Alison Aldrich, Hilary L. Surratt, Daniel M. Walker, Louisa Gilbert, Dget L. Downey, Sam D. Gardner, Sylvia Tan, Lisa M. Lines, Nathan Vandergrift, Nicole Mack, JaNae Holloway, Karsten Lunze, Ann Scheck McAlearney, Timothy R. Huerta, Dawn A. Goddard-Eckrich, and Nabila El-Bassel. 2023. “Community-Level Determinants of Stakeholder Perceptions of Community Stigma toward People with Opioid Use Disorders, Harm Reduction Services and Treatment in the HEALing Communities Study.” *International Journal of Drug Policy* 122:104241. doi:10.1016/j.drugpo.2023.104241.

Des Jarlais, Don, Ann Nugent, Alisa Solberg, Jonathan Feelemyer, Jonathan Mermin, and Deborah Holtzman. 2015. “Syringe Service Programs for Persons Who Inject Drugs in Urban, Suburban, and Rural Areas — United States, 2013.” *Morbidity and Mortality Weekly Report* 64(48):1337–41.

Dickson-Gomez, Julia, Antoinette Spector, Margaret Weeks, Carol Galletly, Madelyn McDonald, and Helena Danielle Green Montaque. 2022. “‘You’re Not Supposed to Be on It Forever’: Medications to Treat Opioid Use Disorder (MOUD) Related Stigma Among Drug Treatment Providers and People Who Use Opioids.” *Substance Abuse: Research and Treatment* 16:11782218221103859. doi:10.1177/11782218221103859.

Dowell, Deborah, Samantha Brown, Shiromani Gyawali, Jennifer Hoenig, Jean Ko, Christina Mikosz, Emily Ussery, Grant Baldwin, Christopher Jones, Yngvild Olsen, Naomi Tomoyasu, Beth Han, Wilson Compton, and Nora Volkow. 2024. “Treatment for Opioid Use Disorder: Population Estimates — United States, 2022.” *MMWR. Morbidity and Mortality Weekly Report* 73(25):567–74. doi:10.15585/mmwr.mm7325a1.

Evans, Elizabeth A., Ekaterina Pivovarova, Thomas J. Stopka, Claudia Santelices, Warren J. Ferguson, and Peter D. Friedmann. 2022. "Uncommon and Preventable: Perceptions of Diversion of Medication for Opioid Use Disorder in Jail." *Journal of Substance Abuse Treatment* 138:108746. doi:10.1016/j.jsat.2022.108746.

Evans, Elizabeth A., Donna Wilson, and Peter D. Friedmann. 2022. "Recidivism and Mortality after In-Jail Buprenorphine Treatment for Opioid Use Disorder." *Drug and Alcohol Dependence* 231:109254. doi:10.1016/j.drugalcdep.2021.109254.

Fadanelli, Monica, David H. Cloud, Umedjon Ibragimov, April M. Ballard, Nadya Prood, April M. Young, and Hannah L. F. Cooper. 2020. "People, Places, and Stigma: A Qualitative Study Exploring the Overdose Risk Environment in Rural Kentucky." *International Journal of Drug Policy* 85:102588. doi:10.1016/j.drugpo.2019.11.001.

Fischer, Leah S., Alice Asher, Renee Stein, Jeffrey Becasen, Amanda Doreson, Jonathan Mermin, Martin I. Meltzer, and Brian R. Edlin. 2025. "Effectiveness of Naloxone Distribution in Community Settings to Reduce Opioid Overdose Deaths among People Who Use Drugs: A Systematic Review and Meta-Analysis." *BMC Public Health* 25(1):1135. doi:10.1186/s12889-025-22210-8.

Friedman, Sally. 2024. "DOJ Secures Agreement with PA Courts to Resolve MOUD Denial Case." https://www.lac.org/news/doj-secures-agreement-with-pa-courts-to-resolve-moud-denial-case.

Frost, Madeline C., Emily C. Williams, Susan Kingston, and Caleb J. Banta-Green. 2018. "Interest in Getting Help to Reduce or Stop Substance Use among Syringe Exchange Clients Who Use Opioids." *Journal of Addiction Medicine* 12(6):428. doi:10.1097/ADM.0000000000000426.

Fullerton, Catherine Anne, Meelee Kim, Cindy Parks Thomas, D. Russell Lyman, Leslie B. Montejano, Richard H. Dougherty, Allen S. Daniels, Sushmita Shoma Ghose, and Miriam E. Delphin-Rittmon. 2014. "Medication-Assisted Treatment With Methadone: Assessing the Evidence." *Psychiatric Services* 65(2):146–57. doi:10.1176/appi.ps.201300235.

Ganetsky, Valerie S., Noa Krawczyk, and Alene Kennedy-Hendricks. 2025. "Medication for Opioid Use Disorder and Treatment Retention Among Pregnant Individuals." *JAMA Network Open* 8(4):e256069. doi:10.1001/jamanetworkopen.2025.6069.

Garcia, Victor, Lisa McCann, Erick Lauber, Christian Vaccaro, Melissa Swauger, and Alex Daniel Heckert. 2023. "High-Risk Individuals and Naloxone Use: Implications for THN Programs in Rural Appalachian Communities." *Journal of Appalachian Health* 5(3):9–21. doi:10.13023/jah.0503.02.

Garnett, Matthew F. 2024. "Drug Overdose Deaths in the United States, 2003–2023." (522).

Gottfredson, Denise C., Stacy S. Najaka, and Brook Kearley. 2003. "Effectiveness of Drug Treatment Courts: Evidence from a Randomized Trial." *Criminology & Public Policy* 2(2):171–96. doi:10.1111/j.1745-9133.2003.tb00117.x.

Hagan, Holly, James P. McGough, Hanne Thiede, Sharon Hopkins, Jeffrey Duchin, and E. Russell Alexander. 2000. "Reduced Injection Frequency and Increased Entry and Retention in Drug Treatment Associated with Needle-Exchange Participation in Seattle Drug Injectors." *Journal of Substance Abuse Treatment* 19(3):247–52. doi:10.1016/S0740-5472(00)00104-5.

Hamilton, Leah, Corey S. Davis, Nicole Kravitz-Wirtz, William Ponicki, and Magdalena Cerdá. 2021. "Good Samaritan Laws and Overdose Mortality in the United States in the Fentanyl Era." *International Journal of Drug Policy* 97:103294. doi:10.1016/j.drugpo.2021.103294.

Hammerslag, Lindsey R., Aimee Mack, Redonna K. Chandler, Laura C. Fanucchi, Daniel J. Feaster, Marc R. LaRochelle, Michelle R. Lofwall, Michael Nau, Jennifer Villani, Sharon L. Walsh, Philip M. Westgate, Svetla Slavova, and Jeffery C. Talbert. 2023. "Telemedicine Buprenorphine Initiation and Retention in Opioid Use Disorder Treatment for Medicaid Enrollees." *JAMA Network Open* 6(10):e2336914. doi:10.1001/jamanetworkopen.2023.36914.

Hanson, Bridget L., Kari Finley, Jay Otto, Nicholas J. Ward, and Swagata Banik. 2024. "Community Support for Harm Reduction and Treatment of Opioid Use Disorder." *Journal of Community Health* 49(4):724–31. doi:10.1007/s10900-023-01278-6.

Harrison, Eric, Kristina Brant, Sienna Strong-Jones, Emma Skogseth, Carl Latkin, and Abenaa Jones. 2024. "Challenges and Recommendations for Overdose Prevention and Harm Reduction in an Era of Fentanyl and Xylazine: Perspectives of Women with Opioid Use Disorder and Professionals." *Psychology of Addictive Behaviors* 38(8):860–70. doi:10.1037/adb0001021.

Hazlett, Anne C. 2018. "Rural America and the Opioid Crisis: Dimension, Impact, and Response." *Drake Journal of Agricultural Law* 23:45–55.

Hedegaard, Holly. 2017. "Drug Overdose Deaths in the United States, 1999–2016." (294).

Hicks, Lanis. 1990. "Availability and Accessibility of Rural Health Care." *The Journal of Rural Health* 6(4):485–506.

Hoang, Bai Linh, and Daniel Sledge. 2022. "The Association between Medication for Opioid Use Disorder and Employment Outcomes in the U.S.: The Relevance of Race and Ethnicity." *Drug and Alcohol Dependence Reports* 4:100081. doi:10.1016/j.dadr.2022.100081.

Hoffman, Kim A., Canyon Foot, Ximena A. Levander, Ryan Cook, Javier Ponce Terashima, John W. McIlveen, P. Todd Korthuis, and Dennis McCarty. 2022. "Treatment Retention, Return to Use, and Recovery Support Following COVID-19 Relaxation of Methadone Take-Home Dosing in Two Rural Opioid Treatment Programs: A Mixed Methods Analysis." *Journal of Substance Abuse Treatment* 141:108801. doi:10.1016/j.jsat.2022.108801.

Hoover, Daniel B., P. Todd Korthuis, Elizabeth Needham Waddell, Canyon Foot, Caitlin Conway, Heidi M. Crane, Peter D. Friedmann, Vivian F. Go, Robin M. Nance, Mai T. Pho, Milan F. Satcher, Adams Sibley, Ryan P. Westergaard, April M. Young, and Ryan

Cook. 2023. “Recent Incarceration, Substance Use, Overdose, and Service Use Among People Who Use Drugs in Rural Communities.” *JAMA Network Open* 6(11):e2342222. doi:10.1001/jamanetworkopen.2023.42222.

Hser, Yih-Ing, Yuhui Zhu, Laura-Mae Baldwin, Larissa J. Mooney, and Andrew J. Saxon. 2024. “Medication Treatment for Opioid Use Disorder among Rural Primary Care Patients.” *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association* 40(1):195–99. doi:10.1111/jrh.12785.

Ibragimov, Umedjon, Katherine E. Cooper, Evan Batty, April M. Ballard, Monica Fadanelli, Skylar B. Gross, Emma M. Klein, Scott Lockard, April M. Young, and Hannah L. F. Cooper. 2021. “Factors That Influence Enrollment in Syringe Services Programs in Rural Areas: A Qualitative Study among Program Clients in Appalachian Kentucky.” *Harm Reduction Journal* 18(1):68. doi:10.1186/s12954-021-00518-z.

Ibragimov, Umedjon, April M. Young, and Hannah L. F. Cooper. 2020. “Understanding Rural Risk Environments for Drug-Related Harms: Progress, Challenges, and Steps Forward.” *International Journal of Drug Policy* 85:102926. doi:10.1016/j.drugpo.2020.102926.

Jenkins, Richard A. 2021. “The Fourth Wave of the US Opioid Epidemic and Its Implications for the Rural US: A Federal Perspective.” *Preventive Medicine* 152:106541. doi:10.1016/j.ypmed.2021.106541.

Jenkins, Richard A., and Holly Hagan. 2020. “What Is a Rural Opioid Risk and Policy Environment?” *The International Journal on Drug Policy* 85:102606. doi:10.1016/j.drugpo.2019.11.014.

Kawasaki, Sarah S., Rachel Zimmerman, Chan Shen, and Aleksandra E. Zgierska. 2023. “COVID-19-Related Flexibility in Methadone Take-Home Doses Associated with Decreased Attrition: Report from an Opioid Treatment Program in Central Pennsylvania.” *Journal of Substance Use and Addiction Treatment* 155:209164. doi:10.1016/j.josat.2023.209164.

Kaynak, Övgü, Whipple, Christopher R., Bonnevie, Erika, Grossman, Joe A., Saylor, Erica M., Stefanko, Matthew, McKeon, Courtney, Smyser, Joe, and Weston S. and Kensinger. 2022. “The Opioid Epidemic and the State of Stigma: A Pennsylvania Statewide Survey.” *Substance Use & Misuse* 57(7):1120–30. doi:10.1080/10826084.2022.2064506.

Kelley, A. Taylor, Marcela C. Smid, Jacob D. Baylis, Elizabeth Charron, Lori Jo Begaye, Amy Binns-Calvey, Shayla Archer, Saul Weiner, Warren Pettey, and Gerald Cochran. 2022. “Treatment Access for Opioid Use Disorder in Pregnancy among Rural and American Indian Communities.” *Journal of Substance Abuse Treatment* 136:108685. doi:10.1016/j.jsat.2021.108685.

Kerr, Thomas, Will Small, Chris Buchner, Ruth Zhang, Kathy Li, Julio Montaner, and Evan Wood. 2010. “Syringe Sharing and HIV Incidence among Injection Drug Users and

Increased Access to Sterile Syringes." *American Journal of Public Health* 100(8):1449–53. doi:10.2105/AJPH.2009.178467.

Keyes, Katherine M., Magdalena Cerdá, Joanne E. Brady, Jennifer R. Havens, and Sandro Galea. 2014. "Understanding the Rural–Urban Differences in Nonmedical Prescription Opioid Use and Abuse in the United States." *American Journal of Public Health* 104(2):e52–59. doi:10.2105/AJPH.2013.301709.

Kim, Byung Jin, and Debra A. Harley. 2019. "Needle and Syringe Programs in Rural Areas: Addressing the Intravenous Drug Use Epidemic." *Rehabilitation Research, Policy, and Education* 33(1):56–64. doi:10.1891/2168-6653.33.1.56.

Krans, Elizabeth E., Joo Yeon Kim, Qingwen Chen, Scott D. Rothenberger, Alton Everette James III, David Kelley, and Marian P. Jarlenski. 2021. "Outcomes Associated with the Use of Medications for Opioid Use Disorder during Pregnancy." *Addiction* 116(12):3504–14. doi:10.1111/add.15582.

Krawczyk, Noa, Paul J. Joudrey, Rachel Simon, Danielle M. Russel, and David Frank. 2023. "Recent Modifications to the US Methadone Treatment System Are a Band-Aid—Not a Solution—to the Nation's Broken Opioid Use Disorder Treatment System." *Health Affairs Scholar* 1(1):qxad018. doi:10.1093/haschl/qxad018.

Krawczyk, Noa, Bianca D. Rivera, Emily Levin, and Bridget C. E. Dooling. 2023. "Synthesising Evidence of the Effects of COVID-19 Regulatory Changes on Methadone Treatment for Opioid Use Disorder: Implications for Policy." *The Lancet Public Health* 8(3):e238–46. doi:10.1016/S2468-2667(23)00023-3.

Krieger, Maxwell S., William C. Goedel, Jane A. Buxton, Mark Lysyshyn, Edward Bernstein, Susan G. Sherman, Josiah D. Rich, Scott E. Hadland, Traci C. Green, and Brandon D. L. Marshall. 2018. "Use of Rapid Fentanyl Test Strips among Young Adults Who Use Drugs." *International Journal of Drug Policy* 61:52–58. doi:10.1016/j.drugpo.2018.09.009.

Larweh, Henry. 2024. "Emerging Adulterants in the Street Drug Supply." https://opioidprinciples.jhsph.edu/emerging-adulterants/.

Levander, Ximena A., Kim A. Hoffman, John W. McIlveen, Dennis McCarty, Javier Ponce Terashima, and P. Todd Korthuis. 2021. "Rural Opioid Treatment Program Patient Perspectives on Take-Home Methadone Policy Changes during COVID-19: A Qualitative Thematic Analysis." *Addiction Science & Clinical Practice* 16(1):72. doi:10.1186/s13722-021-00281-3.

Lipira, Lauren, Gillian Leichtling, Ryan R. Cook, Judith M. Leahy, E. Roberto Orellana, P. Todd Korthuis, and Timothy W. Menza. 2021. "Predictors of Having Naloxone in Urban and Rural Oregon Findings from NHBS and the OR-HOPE Study." *Drug and Alcohol Dependence* 227:108912. doi:10.1016/j.drugalcdep.2021.108912.

Lister, Jamey J., Addie Weaver, Jennifer D. Ellis, Joseph A. Himle, and David M. Ledgerwood. 2020. "A Systematic Review of Rural-Specific Barriers to Medication Treatment for Opioid Use Disorder in the United States." *The American Journal of Drug and Alcohol Abuse* 46(3):273–88. doi:10.1080/00952990.2019.1694536.

Liu, Ligang, Chen Zhang, Andrea E. Bonny, and Milap C. Nahata. 2025. "Strategies to Improve Access to Care for Patients With Opioid Use Disorder." *Annals of Pharmacotherapy* 59(4):378–89. doi:10.1177/10600280241273258.

Lofwall, Michelle R., and Laura C. Fanucchi. 2021. "Long-Acting Buprenorphine Injectables: Opportunity to Improve Opioid Use Disorder Treatment among Rural Populations." *Preventive Medicine* 152:106756. doi:10.1016/j.ypmed.2021.106756.

MacDonald, Margaret, Matthew Law, John Kaldor, Jim Hales, and Gregory J. Dore. 2003. "Effectiveness of Needle and Syringe Programmes for Preventing HIV Transmission." *International Journal of Drug Policy* 14(5):353–57. doi:10.1016/S0955-3959(03)00133-6.

Martin, Rosemarie A., Nicole Alexander-Scott, Justin Berk, Ryan W. Carpenter, Augustine Kang, Ariel Hoadley, Eliana Kaplowitz, Linda Hurley, Josiah D. Rich, and Jennifer G. Clarke. 2023. "Post-Incarceration Outcomes of a Comprehensive Statewide Correctional MOUD Program: A Retrospective Cohort Study." *The Lancet Regional Health – Americas* 18. doi:10.1016/j.lana.2022.100419.

McCracken, Aden, Kristina Brant, Carl Latkin, and Abenaa Jones. 2024. "'Tethered to This Ball and Chain': Women's Perspectives on Bodily Agency within Opioid Treatment Programs." *International Journal of Drug Policy* 134:104645. doi:10.1016/j.drugpo.2024.104645.

van der Meulen, Emily, and Sandra Ka Hon and Chu. 2022. "'The Law Doesn't Protect Me': Examining the Effectiveness of Good Samaritan Drug Overdose Legislation." *Substance Use & Misuse* 57(9):1392–99. doi:10.1080/10826084.2022.2083173.

Miller, Lisa, Kim Murray, Emma DayBranch, and Kinna Thakarar. 2024. "Use of Syringe Service Programs in Rural vs Urban Maine: A Harm-Reduction Study." *Journal of Maine Medical Center* 6(1). doi:10.46804/2641-2225.1153.

Mitragotri, Suhanee, and David T. Zhu. 2025. "Trump and the Overdose Crisis—the Need for Evidence-Based Policy." *The Lancet Regional Health* 44:101063.

Monnat, Shannon M. 2018. "Factors Associated With County-Level Differences in U.S. Drug-Related Mortality Rates." *American Journal of Preventive Medicine* 54(5):611–19. doi:10.1016/j.amepre.2018.01.040.

Monnat, Shannon M. 2020. "Opioid Crisis in the Rural U.S." Pp. 117–43 in *Rural Families and Communities in the United States: Facing Challenges and Leveraging Opportunities*. Vol. 10, *National Symposium on Family Issues*, edited by J. E. Glick, S. M. McHale, and V. King. Cham: Springer International Publishing.

Monnat, Shannon, and Khary Rigg. 2018. "The Opioid Crisis in Rural and Small Town America." *Carsey School of Public Policy*. doi:https://dx.doi.org/10.34051/p/2020.332.

Morenz, Anna M., Robin M. Nance, L. Sarah Mixson, Judith Feinberg, Gordon Smith, P. Todd Korthuis, Mai T. Pho, Wiley D. Jenkins, Peter D. Friedmann, Thomas J. Stopka, Laura C. Fanucchi, William C. Miller, Vivian F. Go, Ryan Westergaard, David W. Seal, William A. Zule, Heidi M. Crane, Joseph A. Delaney, and Judith I. Tsui. 2025. "Barriers

to Accessing Medications for Opioid Use Disorder among Rural Individuals." *International Journal of Drug Policy* 140:104805. doi:10.1016/j.drugpo.2025.104805.

Murphy, Jennifer. 2012. "The Continuing Expansion of Drug Courts: Is That All There Is?" *Deviant Behavior* 33(7):582–88. doi:10.1080/01639625.2012.678205.

Naumann, Rebecca B., Christine Piette Durrance, Shabbar I. Ranapurwala, Anna E. Austin, Scott Proescholdbell, Robert Childs, Stephen W. Marshall, Susan Kansagra, and Meghan E. Shanahan. 2019. "Impact of a Community-Based Naloxone Distribution Program on Opioid Overdose Death Rates." *Drug and Alcohol Dependence* 204:107536. doi:10.1016/j.drugalcdep.2019.06.038.

Network for Public Health Law. 2024. *Harm Reduction and Overdose Prevention: 50-State Survey*. https://www.networkforphl.org/wp-content/uploads/2024/10/50-State-Survey-Harm-Reduction-Laws-in-the-United-States.pdf.

Nguyen, Binh, Chenyue Zhao, Eric Bailly, and Winnie Chi. 2024. "Telehealth Initiation of Buprenorphine for Opioid Use Disorder: Patient Characteristics and Outcomes." *Journal of General Internal Medicine* 39(1):95–102. doi:10.1007/s11606-023-08383-1.

NIDA. 2021a. "Syringe Services Programs." https://nida.nih.gov/research-topics/syringe-services-programs.

NIDA. 2021b. "Words Matter - Terms to Use and Avoid When Talking About Addiction." https://nida.nih.gov/nidamed-medical-health-professionals/health-professions-education/words-matter-terms-to-use-avoid-when-talking-about-addiction.

NIDA. 2022a. "Harm Reduction." https://nida.nih.gov/research-topics/harm-reduction.

NIDA. 2022b. "Naloxone DrugFacts." https://nida.nih.gov/publications/drugfacts/naloxone.

NIDA. 2022c. "Xylazine." https://nida.nih.gov/research-topics/xylazine.

NIDA. 2023. "Overdose Prevention Centers." https://nida.nih.gov/research-topics/overdose-prevention-centers.

NIDA. 2025. "Medications for Opioid Use Disorder." https://nida.nih.gov/research-topics/medications-opioid-use-disorder.

Noga, Anna A., Sebastian Straube, and Charl Els. 2025. "The Recovery Friendly Workplace: A Multidimensional Solution to the Complex Problem of Workplace Stigma of Mental Disorders." *SN Comprehensive Clinical Medicine* 7(1):135. doi:10.1007/s42399-025-01898-0.

O'Donnell, Julie K., R. Matthew Gladden, and Puja Seth. 2017. "Deaths Involving Fentanyl, Fentanyl Analogs, and U-47700 — 10 States, July–December 2016." *MMWR. Morbidity and Mortality Weekly Report* 66(34):897–903. doi:10.15585/mmwr.mm6643e1.

Office of Public Affairs. 2023. "Justice Department Secures Agreement from Pennsylvania Jail to Provide Medications for Opioid Use Disorder." https://www.justice.gov/archives/opa/pr/justice-department-secures-agreement-pennsylvania-jail-provide-medications-opioid-use.

Office of the Attorney General. 2021. "Exhibit E: List of Opioid Remediation Uses." https://www.attorneygeneral.gov/wp-content/uploads/2021/12/Exhibit-E-Final-Distributor-Settlement-Agreement-8-11-21.pdf.

Olfson, Mark, Melanie Wall, Colleen L. Barry, Christine Mauro, and Ramin Mojtabai. 2018. "Impact Of Medicaid Expansion On Coverage And Treatment Of Low-Income Adults With Substance Use Disorders." *Health Affairs* 37(8):1208–15. doi:10.1377/hlthaff.2018.0124.

PA Opioid Misuse and Addiction Abatement Trust. n.d. "Settlement Information." https://www.paopioidtrust.org/.

PA SEOW. 2024. *Harm Reduction in Pennsylvania: Policies, Needs, and Services*. https://www.pa.gov/content/dam/copapwp-pagov/en/ddap/documents/documents/seow/2024%20harm%20reduction%20in%20pa.pdf.

PA SEOW. 2025. *Harm Reduction Services in Pennsylvania: Examining Urban-Rural Differences*.

PACDAA. n.d. "History of PACDAA." https://www.pacdaa.org/about-us.

Palombi, Laura C., Catherine A. St Hill, Martin S. Lipsky, Michael T. Swanoski, and M. Nawal Lutfiyya. 2018. "A Scoping Review of Opioid Misuse in the Rural United States." *Annals of Epidemiology* 28(9):641–52. doi:10.1016/j.annepidem.2018.05.008.

Pasman, Emily, Rachel Kollin, Michael Broman, Guijin Lee, Elizabeth Agius, Jamey J. Lister, Suzanne Brown, and Stella M. Resko. 2022. "Cumulative Barriers to Retention in Methadone Treatment among Adults from Rural and Small Urban Communities." *Addiction Science & Clinical Practice* 17(1):35. doi:10.1186/s13722-022-00316-3.

Peiper, Nicholas C., Sarah Duhart Clarke, Louise B. Vincent, Dan Ciccarone, Alex H. Kral, and Jon E. Zibbell. 2019. "Fentanyl Test Strips as an Opioid Overdose Prevention Strategy: Findings from a Syringe Services Program in the Southeastern United States." *International Journal of Drug Policy* 63:122–28. doi:10.1016/j.drugpo.2018.08.007.

Pennsylvania Department of Health. 2024. "2023 Data Brief - Fatal and Nonfatal Drug Overdoses in Pennsylvania." https://www.pa.gov/content/dam/copapwp-pagov/en/health/documents/topics/documents/programs/pdmp/Pennsylvania%20Overdose%20Data%20Brief%202023.pdf.

Pivovarova, Ekaterina, Elizabeth A. Evans, Thomas J. Stopka, Claudia Santelices, Warren J. Ferguson, and Peter D. Friedmann. 2022. "Legislatively Mandated Implementation of Medications for Opioid Use Disorders in Jails: A Qualitative Study of Clinical, Correctional, and Jail Administrator Perspectives." *Drug and Alcohol Dependence* 234:109394. doi:10.1016/j.drugalcdep.2022.109394.

Platt, Lucy, Silvia Minozzi, Jennifer Reed, Peter Vickerman, Holly Hagan, Clare French, Ashly Jordan, Louisa Degenhardt, Vivian Hope, Sharon Hutchinson, Lisa Maher, Norah Palmateer, Avril Taylor, Julie Bruneau, and Matthew Hickman. 2017. "Needle Syringe Programmes and Opioid Substitution Therapy for Preventing Hepatitis C Transmission

in People Who Inject Drugs." *The Cochrane Database of Systematic Reviews* 9(9):CD012021. doi:10.1002/14651858.CD012021.pub2.

Poliwoda, Salomon, Nazir Noor, Jack S. Jenkins, Cain W. Stark, Mattie Steib, Jamal Hasoon, Giustino Varrassi, Ivan Urits, Omar Viswanath, Adam M. Kaye, and Alan D. Kaye. 2022. "Buprenorphine and Its Formulations: A Comprehensive Review." *Health Psychology Research* 10(3):37517. doi:10.52965/001c.37517.

Poulsen, Melissa N., William Santoro, Roseanne Scotti, Catherine Henderson, Meaghan Ruddy, and Angela Colistra. 2023. "Implementation of Telemedicine Delivery of Medications for Opioid Use Disorder in Pennsylvania Treatment Programs During COVID-19." *Journal of Addiction Medicine* 17(2):e110–18. doi:10.1097/ADM.0000000000001079.

Reuter, Quentin R., Amanda Dos Santos, Jamie McKinnon, David Gothard, Nicholas Jouriles, and David Seaberg. 2022. "Long-Term Treatment Retention of an Emergency Department Initiated Medication for Opioid Use Disorder Program." *The American Journal of Emergency Medicine* 55:98–102. doi:10.1016/j.ajem.2022.02.041.

Revier, Kevin. 2021. "'Without Drug Court, You'll End Up in Prison or Dead': Therapeutic Surveillance and Addiction Narratives in Treatment Court." *Critical Criminology* 29(4):915–30. doi:10.1007/s10612-021-09592-y.

Rigg, Khary K., Shannon M. Monnat, and Melody N. Chavez. 2018. "Opioid-Related Mortality in Rural America: Geographic Heterogeneity and Intervention Strategies." *The International Journal on Drug Policy* 57:119–29. doi:10.1016/j.drugpo.2018.04.011.

SAMHSA. 2024a. "Fentanyl and Xylazine Test Strips." https://www.samhsa.gov/substance-use/treatment/overdose-prevention/fentanyl-xylazine-test-strips.

SAMHSA. 2024b. "Harm Reduction." https://www.samhsa.gov/substance-use/harm-reduction.

SAMHSA. 2024c. "Methadone Take-Home Flexibilities Extension Guidance." https://www.samhsa.gov/substance-use/treatment/opioid-treatment-program/methadone-guidance.

SAMHSA. 2024d. "Substance Use Disorder Treatment Options." https://www.samhsa.gov/substance-use/treatment/options.

SAMHSA. 2025. "Buprenorphine Telemedicine Prescribing: Questions and Answers." https://www.samhsa.gov/substance-use/treatment/statutes-regulations-guidelines/buprenorphine-telemedicine-prescribing.

SAMHSA. n.d. "Opioid Treatment Program Directory." https://dpt2.samhsa.gov/treatment/.

Schalkoff, Christine A., Emma L. Richard, Hannah M. Piscalko, Adams L. Sibley, Daniel L. Brook, Kathryn E. Lancaster, William C. Miller, and Vivian F. Go. 2021. "'Now We Are Seeing the Tides Wash In': Trauma and the Opioid Epidemic in Rural Appalachian Ohio." *Substance Use & Misuse* 56(5):650–59. doi:10.1080/10826084.2021.1887248.

Shoulders, Angela, Christina M. Andrews, Melissa A. Westlake, Amanda J. Abraham, and Colleen M. Grogan. 2023. "Changes in Medicaid Fee-for-Service Benefit Design for Substance Use Disorder Treatment During the Opioid Crisis, 2014 to 2021." *JAMA Health Forum* 4(8):e232502. doi:10.1001/jamahealthforum.2023.2502.

Skogseth, Emma M., Kristina Brant, Carl Latkin, and Abenaa A. Jones. 2025. "Physical Accessibility Barriers to Medications for Opioid Use Disorder Treatment: A Qualitative Study of Perspectives from Women with Opioid Use Disorder and Health and Criminal Legal Professionals." *Contemporary Drug Problems* 00914509241309110. doi:10.1177/00914509241309110.

Skulberg, Arne Kristian, Ida Tylleskär, Morten Valberg, Anne-Cathrine Braarud, Jostein Dale, Fridtjof Heyerdahl, Tore Skålhegg, Jan Barstein, Sindre Mellesmo, and Ola Dale. 2022. "Comparison of Intranasal and Intramuscular Naloxone in Opioid Overdoses Managed by Ambulance Staff: A Double-Dummy, Randomised, Controlled Trial." *Addiction (Abingdon, England)* 117(6):1658–67. doi:10.1111/add.15806.

Smart, Rosanna, Bryce Pardo, and Corey S. Davis. 2021. "Systematic Review of the Emerging Literature on the Effectiveness of Naloxone Access Laws in the United States." *Addiction* 116(1):6–17. doi:10.1111/add.15163.

Smith, Kreseda. 2022. "Interviewing in Rural Areas." Pp. 156–67 in *Research Methods for Rural Criminologists*. Routledge.

Snell-Rood, Claire, Emily Hauenstein, Carl Leukefeld, Frances Feltner, Amber Marcum, and Nancy Schoenberg. 2017. "Mental Health Treatment Seeking Patterns and Preferences of Appalachian Women with Depression." *American Journal of Orthopsychiatry* 87(3):233–41. doi:10.1037/ort0000193.

St. Louis, Joshua, Tyler Barreto, Melina Taylor, Claire Kane, Emma Worringer, and Aimee R. Eden. 2022. "Barriers to Care for Perinatal Patients with Opioid Use Disorder: Family Physician Perspectives." *Family Practice* 39(2):249–56. doi:10.1093/fampra/cmab154.

Staton, Michele, Erika Pike, Martha Tillson, and Michelle R. Lofwall. 2024. "Facilitating Factors and Barriers for Use of Medications to Treat Opioid Use Disorder (MOUD) among Justice-Involved Individuals in Rural Appalachia." *Journal of Community Psychology* 52(8):997–1014. doi:10.1002/jcop.23029.

Stopka, T. J., A. T. Estadt, G. Leichtling, J. C. Schleicher, L. S. Mixson, J. Bresett, E. Romo, P. Dowd, S. M. Walters, A. M. Young, W. Zule, P. D. Friedmann, V. F. Go, R. Baker, and R. J. Fredericksen. 2024. "Barriers to Opioid Use Disorder Treatment among People Who Use Drugs in the Rural United States: A Qualitative, Multi-Site Study." *Social Science & Medicine (1982)* 346:116660. doi:10.1016/j.socscimed.2024.116660.

Strong-Jones, Sienna, Kristina Brant, Derek Kreager, Eric Harrison, and Abenaa Jones. 2024. "Adverse Effects of Criminal Legal System Involvement: A Qualitative Study Examining the Role of Incarceration and Reentry on Substance Use Trajectories among Women with Opioid Use Disorders." *BMC Global and Public Health* 2(1):26. doi:10.1186/s44263-024-00058-1.

Sun, Tianyu, Natallia Katenka, Stephen Kogut, Jeffrey Bratberg, Josiah Rich, and Ashley Buchanan. 2022. "Evaluation of the Effectiveness of Buprenorphine-Naloxone on Opioid Overdose and Death among Insured Patients with Opioid Use Disorder in the United States." *Pharmacoepidemiology* 1(3):101–12. doi:10.3390/pharma1030010.

Surratt, Hilary L., Janet K. Otachi, Timothy Williams, Jennifer Gulley, A. Scott Lockard, and Rebecca Rains. 2020. "Motivation to Change and Treatment Participation Among Syringe Service Program Utilizers in Rural Kentucky." *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association* 36(2):224–33. doi:10.1111/jrh.12388.

Thomas, Natalie, Katinka van de Ven, and Kyle J. D. Mulrooney. 2020. "The Impact of Rurality on Opioid-Related Harms: A Systematic Review of Qualitative Research." *International Journal of Drug Policy* 85:102607. doi:10.1016/j.drugpo.2019.11.015.

Tookes, Hansel E., Alex H. Kral, Lynn D. Wenger, Gabriel A. Cardenas, Alexis N. Martinez, Recinda L. Sherman, Margaret Pereyra, David W. Forrest, Marlene LaLota, and Lisa R. Metsch. 2012. "A Comparison of Syringe Disposal Practices among Injection Drug Users in a City with versus a City without Needle and Syringe Programs." *Drug and Alcohol Dependence* 123(1–3):255–59. doi:10.1016/j.drugalcdep.2011.12.001.

Tzenios, Nikolaos. 2019. "The Determinants of Access to Healthcare: A Review of Individual, Structural, and Systemic Factors." *Journal of Humanities and Applied Science Research* 2(1):1–14.

Vaismoradi, Mojtaba, Jacqueline Jones, Hannele Turunen, and Sherrill Snelgrove. 2016. "Theme Development in Qualitative Content Analysis and Thematic Analysis." *Journal of Nursing Education and Practice* 6(5):100–110. doi:10.5430/jnep.v6n5p100.

Victor, Grant, Guijin Lee, Brandon del Pozo, Sydney Silverstein, Catherine Zettner, Rahni Cason, and Bradley Ray. 2022. "Medications for Opioid Use Disorder in the Criminal/Legal System: Knowledge, Beliefs, and Attitudes Among Rural Community-Based Stakeholders." *Journal of Drug Issues* 52(3):389–405. doi:10.1177/00220426221076800.

Wakeman, Sarah E., Marc R. Larochelle, Omid Ameli, Christine E. Chaisson, Jeffrey Thomas McPheeters, William H. Crown, Francisca Azocar, and Darshak M. Sanghavi. 2020. "Comparative Effectiveness of Different Treatment Pathways for Opioid Use Disorder." *JAMA Network Open* 3(2):e1920622. doi:10.1001/jamanetworkopen.2019.20622.

Weger, Rachel, Nathan Weinstock, Raagini Jawa, and J. Deanna Wilson. 2024. "'We're Not Gonna Aid You in Shooting Up': Stigma's Relationship to Harm Reduction in People Who Inject Drugs." *Journal of General Internal Medicine*. doi:10.1007/s11606-024-09129-3.

Weintraub, Eric, Chamindi Seneviratne, Jessica Anane, Kelly Coble, Jessica Magidson, Sarah Kattakuzhy, Aaron Greenblatt, Christopher Welsh, Alexander Pappas, Terri L. Ross, and Annabelle M. Belcher. 2021. "Mobile Telemedicine for Buprenorphine

Treatment in Rural Populations With Opioid Use Disorder." *JAMA Network Open* 4(8):e2118487. doi:10.1001/jamanetworkopen.2021.18487.

Whipple, Christopher R., Övgü Kaynak, Nathan E. Kruis, Erica Saylor, Erika Bonnevie, and Weston S. Kensinger. 2023. "Opioid Use Disorder Stigma and Support for Harm Reduction in Rural Counties." *Substance Use & Misuse* 58(14):1818–28. doi:10.1080/10826084.2023.2250434.

Whipple, Christopher R., Övgü Kaynak, Nathan E. Kruis, Melissa D. Silesky, Erika Bonnevie, Joe Smyser, Erica Saylor, Paul M. Christopher, and Weston S. Kensinger. 2024. "Challenging Public Stigma: The Impact of a Statewide Social Media Campaign to Reduce Opioid Use Disorder Stigma." *Drugs: Education, Prevention and Policy* 1–10. doi:10.1080/09687637.2024.2416583.

Winstanley, Erin L., James J. Mahoney, Felipe Castillo, and Sandra D. Comer. 2021. "Neurocognitive Impairments and Brain Abnormalities Resulting from Opioid-Related Overdoses: A Systematic Review." *Drug and Alcohol Dependence* 226:108838. doi:10.1016/j.drugalcdep.2021.108838.

Winstanley, Erin L., Emily P. Thacker, Lyn Yuen Choo, Laura R. Lander, James H. Berry, and Babak Tofighi. 2022. "Patient-Reported Problems Filling Buprenorphine Prescriptions and Motivations for Illicit Use." *Drug and Alcohol Dependence Reports* 5:100091. doi:10.1016/j.dadr.2022.100091.

## Appendix 1: Data Collection Tools

**Single County Authority (SCA) Survey**

Note: These questions are asked for each rural county served by each SCA.

1) What types of MOUD do you pay for with SCA funding?
2) Do you have a cap on funding provided per individual?
    a. What is the dollar amount of that funding cap?
    b. Is this funding cap annual, lifetime, or something else?
3) How many providers do you contract with to prescribe buprenorphine in *<county name>*?
4) Does *<county name>*'s jail offer naltrexone?
    a. Continuation and/or inductions?
    b. What criteria must people meet to receive continuation?
    c. What criteria must people meet to be induced?
5) Does *<county name>*'s jail offer buprenorphine?
    a. Sublingual and/or extended-release injection?
    b. Continuation and/or inductions?
    c. What criteria must people meet to receive continuation?
    d. What criteria must people meet to be induced?
6) Does *<county name>*'s jail offer methadone?
    a. Continuation and/or inductions?
    b. What criteria must people meet to receive continuation?
    c. What criteria must people meet to be induced?
7) What could lead an individual to be removed from an MOUD program in *<county name>*'s jail?
8) Does *<county name>*'s jail require a treatment plan where the individual must gradually step down their MOUD dosage level?
9) Does *<county name>*'s jail offer discharge or reentry planning for individuals to continue MOUD use after release?
10) Does *<county name>* have a treatment court?
11) Does *<county name>*'s treatment court facilitate MOUD inductions?
    a. For MOUD inductions, must the participant ask for a referral to an MOUD provider, or does the court offer up referrals to participants who might benefit?
    b. Does the court offer up referrals for MOUD induction to all participants with OUD or only to select participants?
12) Does *<county name>*'s treatment court require a treatment plan where the participant must gradually step down their MOUD dosage level or eventually come off of their MOUD?

13) Do participants at <*county name*>'s treatment court sign a waiver to allow for communication between providers and the court?
14) For participants who use MOUDs at <*county name*>'s treatment court, are there any other special court requirements compared to those who have zero MOUD involvement?

**MOUD Provider Interview Guide**

1) Can you tell me what clinic or organization you work for and what services it provides?
    a. Probe for how their MOUD program works and whether they provide other harm reduction tools or services.
2) What is your role there, and what are your duties in that role?
3) How have you seen <*county name*> impacted by the ongoing overdose crisis?
    a. Probe for what the local drug supply is like and how that affects what the best treatment options and harm reduction options are for folks who use drugs.
4) Have you seen different parts of the county impacted differently? How so?
5) Are there specific populations or geographies (like those that are more rural / "removed") that you find to be underserved when it comes to substance use services, especially regarding MOUD access?
6) How do you think the community perceives MOUDs?
    a. Probe for differences by type of MOUD (i.e., between buprenorphine and methadone).
    b. What about the local health care system specifically?
        i. What is communication like between the clinic / organization you work for with the local health care system?
    c. What about the local criminal justice system specifically?
        i. What is communication like between the clinic / organization you work for with the local criminal justice system?
    d. What about the local child welfare system specifically?
        i. What is communication like between the clinic / organization you work for with the local criminal justice system?
    e. What about local employers?
        i. What is communication like between the clinic / organization you work for with local employers?
7) Can you tell me about any challenges you see people face in trying to access the types of MOUD that are available here in <*county name*>?
    a. Probe for differences by type of MOUD.
    b. Probe for differences based on people's situation—justice-impacted, low-income, racial/ethnic minority, etc.

8) Can you tell me about any other challenges people face in remaining engaged with MOUD treatment?
    a. Probe for access to recovery capital—like employment, housing, social support.
9) Have you all tried any interventions to address these challenges that have been successful? What are they?
    a. Probe for the use of telehealth and strengths/weaknesses of this approach.
10) How has the removal of the x-waiver requirement impacted provision of buprenorphine in your county?
11) For OTPs only: Can you tell us about your policies around take-homes?
    a. What is the maximum number of take-home doses you provide?
    b. How long does it take for a patient to receive 7-day, 14-day, or 28-day take-homes? Roughly what percentage of patients receive take-homes?
    c. What criteria are used to determine if a patient can receive take-homes?
    d. Are counseling and urine screenings required for patients? How often?
    e. What are the grounds for administrative discharge, if any?
12) The purpose of this study is to produce a report with policy recommendations—these can be recommendations at the federal, state, or local level. What would be some of your recommendations for how to expand access to MOUD in rural communities in Pennsylvania?

**Harm Reduction Provider Interview Guide**

1) Can you tell me what clinic or organization you work for and what services it provides?
    a. Probe for the types of harm reduction tools or services they provide (e.g., naloxone, testing strips, education, syringe exchange).
2) What is your role there, and what are your duties in that role?
3) How have you seen <*county name*> impacted by the ongoing overdose crisis?
    a. Probe for what the local drug supply is like and how that affects what the best treatment options and harm reduction options are for folks who use drugs.
4) Have you seen different parts of the county impacted differently? How so?
5) Are there specific populations or geographies (like those that are more rural / “removed”) that you find to be underserved when it comes to substance use services, especially regarding access to harm reduction services?
6) How do you think the community perceives harm reduction services?
    a. Probe for differences by type of harm reduction services.
    b. What about the local health care system specifically?
    c. What about the local criminal justice system specifically?
    d. What about the local child welfare system specifically?

   e. What about local employers?
   f. What about the local recovery community?
7) Can you tell me about any challenges you see people face in trying to access the types of harm reduction tools and services that are available here in <*county name*>?
   a. Probe for differences by type of harm reduction tool or service.
   b. Probe for differences based on people's situation—justice-impacted, low-income, racial/ethnic minority, etc.
8) Can you tell me about any other challenges people face in reducing the harms associated with substance use?
   a. Probe for access to recovery capital—like employment, housing, social support.
9) What have been successful strategies you have used to get harm reduction tools into people's hands?
10) What have been barriers that you all are continuing to face to get harm reduction tools out?
11) Can you tell me about the biggest remaining needs you see in trying to reduce the harm associated with the ongoing overdose crisis?
12) The purpose of this study is to produce a report with policy recommendations—these can be recommendations at the federal, state, or local level. What would be some of your recommendations for how to expand access to MOUD and/or harm reduction services in rural communities in Pennsylvania?

**Criminal Legal Professional Interview Guide**

1) Can you tell me what your role is in <*county name*>, and what your duties are in that role?
2) How have you seen <*county name*> impacted by the ongoing overdose crisis?
3) Have you seen different parts of the county impacted differently? How so?
4) How do you personally feel about the use of MOUDs?
   a. How do you think others in the criminal justice system perceive it?
   b. How about the general community?
   c. Probe for differences by type of MOUD.
5) In your jail or treatment court, what are the general protocols around clients' use of MOUDs?
   a. Probe how MOUD is provided.
   b. Probe who receives MOUDs and how that is determined.
   c. Probe whether there are any additional requirements for people using MOUD (e.g., counseling).
   d. Probe for differences by type of MOUD.
*6)* Do you have any successful strategies or tips you use in your MOUD program that you would recommend to other jails or treatment courts?

*7)* Do you have any ongoing concerns about MOUD use in your jail or treatment court?
*8)* What are reasons why someone would be removed from an MOUD program?
*9)* Does the jail or court facilitate any kind of reentry/post-program planning to ensure clients can access MOUD after release or graduation? What does that planning look like?
10) What has it been like getting buy-in from all of the stakeholders in the criminal justice system in <*county name*> to support this program?
    a. Probe for strategies finding support.
11) What kind of successes have you seen that assisting with MOUD access allows?
12) Can you tell me about any challenges you see people face in trying to access the types of MOUD that are available here in <*county name*>?
13) Can you tell me about any other challenges people face in reducing the harms associated with substance use (after reentry)?
    a. Probe for access to recovery capital—like employment, housing, social support.
14) Can you tell me about the biggest remaining needs you see in trying to reduce the harm associated with the ongoing overdose crisis, especially in rural places?
15) The purpose of this study is to produce a report with policy recommendations—these can be recommendations at the federal, state, or local level. What would be some of your recommendations for how to expand access to MOUD and/or harm reduction services in rural communities in Pennsylvania?

**People with Living Experience Interview Guide**

1) What is your race or ethnicity?
2) What is your gender?
3) What is your age?
4) Do you have children under age 18? *(How many? Do they live with you?*)
5) What's the highest level of education you completed?
6) What's your current employment status? (*Include type of job.*)
7) Can you tell me how you have seen your community impacted by the ongoing overdose crisis?
8) How has the local community responded to the overdose crisis?
9) How do you personally feel about the use of MOUDs?
    a. Probe for differences by type of MOUD.
10) How do you think the general community perceives MOUDs?
    a. Probe for perceptions by local health care system, criminal justice system, local recovery community.
11) Have you had any experiences using MOUDs? Where did you access them?
    a. Probe for types of MOUDs used and the periods they used it for.
    b. Probe for why they used the specific type(s) that they did.

   c. Probe why they stopped if they've used MOUDs for multiple different periods.
   d. Probe for positives and negatives about the different venues where they accessed MOUD.
12) How do you feel about the accessibility of MOUD services or providers in your county?
   a. Do you wish more MOUD services or providers were available? Why or why not?
13) What challenges have you or others you know faced in accessing MOUDs in your county?
   a. Probe for challenges related to MOUD provider, health care system, criminal justice system, child welfare system, employers.
14) *For methadone patients only*: What has been your experience receiving take-homes?
   a. Have you heard about the recently expanded take-home flexibilities? How do you feel about this? Would it have a positive or negative impact on yours or others' experiences using methadone?
   b. Have you heard about the federal bill MOTAA—a bill that would allow addiction specialists to prescribe methadone out of their offices and for pharmacy pick-up? How do you feel about this? Would it have a positive or negative impact on yours or others' experiences using methadone?
15) If you had a magic wand, what would you want to see happen around MOUD access? Are there any changes you would make to make it easier for you or those you know to benefit from the use of MOUDs?
16) Can you tell me what harm reduction means to you? When you think about what harm reduction is, what tools or practices come to mind?
17) In general, how do you feel about "harm reduction" and the use of these harm reduction tools and services?
   a. Probe for differences by type of harm reduction tool or service.
18) How do you think the general community feels about "harm reduction"?
   a. Probe for perceptions by local health care system, criminal justice system, local recovery community.
19) Do you have naloxone?
   a. *If so:* Did you receive training on how to use it?
      i. *If so*: Who trained you? What was the training like? Was it useful?
      ii. *If not:* How did you figure out how to use it? What (or who) was helpful in learning how? Were the instructions that came with it clear? Do you think some kind of training could be useful?
   b. *If so:* Where have you accessed naloxone? Is it relatively easy or hard to get? Are you limited to how many you can get?
   c. *If not:* Can you tell me why you don't carry it / have it?
   d. *If not:* Do you know where you could get naloxone if you wanted it?
20) Have you ever used naloxone?

   a. *If so:* If you're comfortable, can you tell me about that experience? How did you feel about using it?
   b. *If not:* Can you tell me why you've never used it?

21) Do you have fentanyl testing strips? What about xylazine testing strips?
   a. *If so:* Did you receive training on how to use them?
      i. *If so*: Who trained you? What was the training like? Was it useful?
      ii. *If not:* How did you figure out how to use them? What (or who) was helpful in learning how? Were the instructions that came with them clear? Do you think some kind of training could be useful?
   b. *If so:* Where have you accessed fentanyl testing strips? Are they relatively easy or hard to get? Are you limited to how many you can get?
   c. *If not:* Can you tell me why you don't have them?
   d. *If not:* Do you know where you could get testing strips if you wanted them?
22) Have you ever used fentanyl testing strips? What about xylazine testing strips?
   a. *If so:* Did you find them useful? Why or why not?
   b. *If not:* Why have you never used them?
23) Have you ever been to a syringe exchange program?
   a. *If so:* Did you find it useful? Why or why not? What was your experience like?
   b. *If not:* Do you know where you could go to a syringe exchange program if you wanted to, or if a friend or neighbor needed such a service?
24) Are there any other local harm reduction services that you are aware of in your area?
   a. *Probe for details on these services.*
25) How do you feel about the accessibility of naloxone, testing strips, and other harm reduction services or tools in your county?
   a. Do you wish more harm reduction services or programs were available? Why or why not?
26) What challenges have you or others you know faced in accessing these tools and services in your county?
27) Can you tell me about the biggest remaining needs you see in trying to reduce the harm associated with the ongoing overdose crisis? If you could wave a magic wand, what would you want to see happen?

## Appendix 2: Participant Characteristics

**Table 1: Characteristics of MOUD Providers (N=14)**

| Characteristic | Number of Providers (N) | Percent of Providers |
|---|---|---|
| **Type of Organization** | | |
| Opioid Treatment Program | 8 | 57% |
| Federally Qualified Health Center | 2 | 14% |
| Substance use treatment provider | 2 | 14% |
| Integrated health system | 2 | 14% |
| **Participant Role** | | |
| Program director | 9 | 64% |
| Clinical supervisor | 4 | 29% |
| Physician | 1 | 7% |
| **Types of MOUD Offered** | | |
| Buprenorphine only | 6 | 43% |
| Methadone only | 4 | 29% |
| Buprenorphine and methadone | 4 | 29% |
| **County Overdose Death Rate**[16] | | |
| Low (below state average) | 11 | 79% |
| High (above state average) | 3 | 21% |

**Table 2: Characteristics of Harm Reduction Providers (N=12)**

| Characteristic | Number of Providers (N) | Percent of Providers |
|---|---|---|
| **Type of Organization** | | |
| Community-based organization | 5 | 42% |
| Single County Authority | 7 | 58% |
| **Participant Role** | | |
| Executive director | 6 | 50% |
| Prevention program coordinator | 2 | 17% |
| Recovery program coordinator | 2 | 17% |
| Other program coordinator | 2 | 17% |
| **Types of Services Offered** | | |
| Naloxone | 2 | 17% |
| Naloxone and test strips | 9 | 75% |
| SSP, Naloxone, and test strips | 1 | 8% |

[16] This classification draws on a data brief which uses 2023 county overdose death rate data (Pennsylvania Department of Health 2024).

| | | |
|---|---|---|
| **County Overdose Death Rate** | | |
| Low (below state average) | 7 | 58% |
| High (above state average) | 5 | 42% |

**Table 3: Characteristics of County Jail Professionals (N=10)**

| Characteristic | Number of Professionals (N) | Percent of Professionals |
|---|---|---|
| **Participant Role** | | |
| Jail warden or deputy warden | 6 | 60% |
| Medical provider or counselor | 1 | 10% |
| Warden and provider/counselor | 3 | 30% |
| **MOUD Offered by Jail** | | |
| Continuation only | 7 | 70% |
| Induction and continuation | 3 | 30% |
| **County Overdose Death Rate** | | |
| Low (below state average) | 9 | 90% |
| High (above state average) | 1 | 10% |

**Table 4: Characteristics of Treatment Court Professionals (N=6)**

| Characteristic | Number of Professionals (N) | Percent of Professionals |
|---|---|---|
| **Participant Role** | | |
| Judge | 1 | 17% |
| Treatment court coordinator | 5 | 83% |
| **MOUD Offered by Treatment Court** | | |
| Continuation only | 0 | 0% |
| Induction and continuation | 6 | 100% |
| **County Overdose Death Rate** | | |
| Low (below state average) | 6 | 100% |
| High (above state average) | 0 | 0% |

**Table 5: Characteristics of Residents with Living Experience (N=20)**

| Characteristic | Number of Residents (N) | Percent of Residents |
|---|---|---|
| **Gender** | | |
| Male | 6 | 30% |
| Female | 14 | 70% |
| **Race/Ethnicity** | | |
| American Indian or Alaska Native | 1 | 5% |
| Asian | 0 | 0% |

| | | |
|---|---|---|
| Black or African American | 2 | 10% |
| Hispanic or Latino | 0 | 0% |
| Native Hawaiian or Pacific Islander | 0 | 0% |
| White | 16 | 80% |
| Multi-racial | 1 | 5% |
| **Age** | | |
| 18-30 | 3 | 15% |
| 31-40 | 13 | 65% |
| 41-50 | 2 | 10% |
| 51-60 | 2 | 10% |
| 61+ | 0 | 0% |
| **Parenting Status** | | |
| Yes | 10 | 50% |
| No | 10 | 50% |
| **Educational Attainment** | | |
| Less than high school | 4 | 20% |
| High school diploma/GED | 10 | 50% |
| Some college | 5 | 25% |
| Associate's | 0 | 0% |
| Bachelor's | 1 | 5% |
| Graduate or professional degree | 0 | 0% |
| **Employment Status** | | |
| Yes | 9 | 45% |
| No | 11 | 55% |
| **Types of MOUD Used** | | |
| Buprenorphine only | 4 | 20% |
| Methadone only | 9 | 45% |
| Both | 7 | 35% |

## Center for Rural Pennsylvania Board of Directors

**Senator Gene Yaw**, Chairman
**Representative Eddie Day Pashinski**, Vice Chairman
**Dr. Nancy Falvo**, Pennsylvania Western University Clarion, Secretary
**Stephen M. Brame**, Governor's Representative, Treasurer
**Senator Judy Schwank**
**Representative Dan Moul**
**Dr. David Abler**, Pennsylvania State University
**Richard Esch**, University of Pittsburgh
**Dr. Jeffrey Hyde,** Penn State Extension
**Shannon M. Munro**, Pennsylvania College of Technology
**Dr. Charles Patterson**, Shippensburg University of Pennsylvania
**Susan Snelick**, Northern Pennsylvania Regional College
**Darrin Youker**, Governor's Representative

## Center for Rural Pennsylvania Staff

Laura R. Dimino, Ph.D., Interim Executive Director
Michaela Miller, Quantitative Data Analyst
Katie Park, Communications Manager
Kaitlyn Goode, Data Visualization Specialist
Linda Hinson, Office Manager



625 Forster St., Room 902, Harrisburg, PA 17120
717-787-9555 | www.rural.pa.gov