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Implementation of Mobile Medication Units: Findings from a Qualitative Study

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Office of the Assistant Secretary for Planning and Evaluation

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IMPLEMENTATION OF MOBILE MEDICATION UNITS: FINDINGS FROM A QUALITATIVE STUDY

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I. Introduction

The United States has seen a rapid increase in the number of overdoses, with deaths involving an opioid rising from 49,860 in 2019 to 81,806 in 2022 (NIDA 2024). As of June 2024, the predicted number of opioid-related deaths in the previous 12 months had decreased slightly but remained high, at 70,655 (CDC 2024). The growth of opioid-related deaths has emphasized the importance of expanding access to medications for opioid use disorder (MOUD) to people who need it. Methadone is one of three medications (along with buprenorphine and naltrexone) that the U.S. Food and Drug Administration has approved to treat opioid use disorder (OUD). The most highly regulated of the three medications, methadone, can only be dispensed or administered by opioid treatment programs (OTPs) (NASEM 2022). This means that many patients on methadone therapy for opioid use disorder must make daily trips to an OTP to receive their medication and be observed taking it. The distance that patients must travel to an OTP is generally longer than the distance they must travel to access office-based treatment for other medications for opioid use disorder (Amiri et al. 2021).

Medication units are additional locations for opioid treatment programs and provide similar services to OTPs, such as dispensing medication. While they are still part of the OTP, they are in different geographic locations and can be mobile or fixed sites. A mobile medication unit (MMU) travels between the fixed-site OTP and another site in the community. MMUs can provide the same services as an OTP, including methadone services and are often a re-purposed van or recreational vehicle (SAMHSA 2023; Chan et al. 2021). In 1988, the U.S. Drug Enforcement Administration (DEA) approved the first MMU with the intention of increasing access to methadone treatment in rural areas and in urban areas without a brick-and-mortar OTP (Chan et al. 2021). DEA continued to approve MMUs until 2007, when it issued a moratorium on such approvals because of concerns about potential methadone diversion (Chan et al. 2021). In July 2021, DEA lifted the moratorium on approvals of new MMUs to increase access to OTPs in light of the continuing opioid epidemic in the United States (DEA 2020, 2021). The new DEA guidance also authorized OTPs to add a "mobile component" to their existing narcotic treatment program registration, eliminating the separate registration requirement for MMUs (SAMHSA 2021). As of September 2024, 54 MMUs operate across 17 states (DEA 2024).[1] This represents substantial growth from the eight MMUs in six states that were operational as of August 2022 (DEA does not have available data before this date) (DEA 2024).

This new rule allowing approval of MMUs to resume occurred in the context of other related policy changes. In April 2024, the Substance Abuse and Mental Health Services Administration (SAMHSA) finalized a modification to 42 CFR Part 8, allowing additional telehealth and take-home methadone dose flexibilities (SAMHSA 2024). For OTPs, these flexibilities allow the use of audio-visual telehealth for initiation of treatment with methadone (SAMHSA 2024). OTPs may also provide up to 28 days of take-home medication to stable patients and 14 days of take-home medication to less-stable patients

[1] These states are Arizona (1 unit), California (4 units), Colorado (1 unit), Delaware (2 units), Illinois (3 units), Kansas (1 unit), Massachusetts (5 units), Maryland (2 units), Michigan (2 units), New Jersey (3 units), New York (2 units), Oregon (4 units), Pennsylvania (1 unit), Rhode Island (2 units), Utah (2 units), Washington (8 units), and Wisconsin (3 units).

(SAMHSA 2024). DEA has announced a separate proposed rule to permanently extend some telemedicine flexibilities introduced during the pandemic (DEA 2023).

To better understand the current state of MMU implementation since the end of the DEA moratorium, the Office of the Assistance Secretary for Planning and Evaluation commissioned this study, which included an environmental scan and key informant interviews with policy experts and people with first-hand experience implementing MMUs. The study considered the following research questions:

1. How have MMUs been implemented?
    a. In what geographies (for example, urban, rural) do MMUs operate?
    b. What special populations or settings (for example, correctional facilities) do MMUs serve?
2. What barriers exist to providing MMU services?
    a. What federal actions could help increase access to MMU services in underserved communities?

Study highlights

- In July 2021, the DEA lifted a 2007 moratorium on new mobile medication units (MMUs) to increase access to methadone amidst the opioid epidemic. This report describes findings from a study of the current state of MMU implementation through an environmental scan and key informant interviews with policy experts and people involved with MMU implementation.
- MMUs typically offer methadone initiation and maintenance as well as counseling and some wraparound services. The quality of these services is similar to those offered by brick-and-mortar opioid treatment programs (OTPs), though in-person offerings are limited by MMUs' space.
- To establish MMUs, OTPs typically rely on state and federal grant funding, philanthropy, and opioid settlement funds. Common barriers include community resistance to hosting the MMU and the up-front cost of purchasing and outfitting the unit; prohibitive or confusing zoning requirements that limit where the units operate; and DEA regulations related to vehicle security and safekeeping of methadone.
- Respondents note that MMUs rely on Medicaid payments that are often insufficient to cover the costs of operating the units. Other barriers to MMU operation include the ongoing costs and out-of-service time associated with vehicle maintenance; vehicle space constraints that limit the number of patients they can serve; difficultly maneuvering the vehicles in urban areas; and disruptions from weather or staffing challenges. A requirement that MMUs return to the home OTP each day also limits their range and ability to serve rural areas.
- Respondents believe MMUs have improved access to methadone services but see an ongoing need for MMUs among people who are incarcerated, tribal populations, and people living in rural areas. Technical assistance and peer learning opportunities, new or expanded grant funding, increased Medicaid reimbursement rates, and public awareness campaigns could help address barriers that OTPs face in establishing and operating MMUs. Policy changes (for example, streamlining the DEA approval process or adjusting the return-to-home OTP requirement) might also be needed to further expand MMU reach. ◢

II. Methodology

A. Environmental scan

We conducted an environmental scan of government, peer-reviewed, and gray literature on the implementation of MMUs following the DEA's recent change.[2] We used findings from the environmental scan to summarize existing research on common challenges that OTPs experienced in implementing MMUs and policy efforts at the state and federal levels to overcome these challenges and to ensure topics covered in the interviews complemented existing literature.

B. Key informant interviews

We conducted 18 semi-structured interviews with two groups of key informants: nine people with direct experience implementing MMUs, including people who oversee MMUs at their organization or work for an OTP that has established MMUs (implementers),[3] and nine people from academia, national organizations, or state authorities able to provide a policy perspective and reflect on the status of MMU implementation more broadly. Tables II.1 and II.2 summarize the characteristics of the MMUs operated by implementers and types of policy experts, respectively. The study team developed two interview protocols and asked each group different questions related to the implementation of MMUs. To systematically identify themes and synthesize findings from the key informant interviews, the study team used NVivo, a qualitative data analysis software, to code interview transcripts and complete our analysis using a deductive, iterative approach. The study team summarized coded data segments and compared summaries across respondents to identify common themes and develop findings.

Table II.1. Characteristics of MMUs operated by implementers

MMU characteristics	Number of implementers representing MMUs with characteristic
Ownership model	
For profit	3
Nonprofit or public	5
N/A[a]	1
Geography[b]	
Urban[c]	4
Rural[c]	4
Suburban	1
N/A	1
Region	
Northeast	4
West	2

[2] The environmental scan included sources published in the last five years, prioritizing literature published after the July 2021 action authorizing OTPs to operate MMUs under their existing registration.

[3] Throughout this report, we refer to eight direct MMU implementers (those with direct experience implementing or overseeing MMUs). Although we conducted nine interviews with this group, one respondent was from a national organization overseeing the needs of implementers and spoke to MMU implementation experience more broadly.

MMU characteristics	Number of implementers representing MMUs with characteristic
Midwest	1
South	1
N/A	1

[a] N/A (not applicable) indicates that the respondent provided a national perspective on the needs and experiences of all MMU implementers and thus does not fit into any of the designated categories.
[b] We used respondents' self-report of whether their MMUs were located in urban, rural, or suburban areas to develop these counts.
[c] One of the implementers oversees two rural MMUs and one urban MMU; we included this implementer in both the rural and urban categories.
MMU = mobile medication unit.

Table II.2. Types of policy experts

Respondent type	Number of respondents
State Opioid Treatment Authority[a]	4
Academic affiliation	2
National organization	1
Other policy expert	2

[a] A State Opioid Treatment Authority is a state government position responsible for overseeing OTPs in their state (NASADAD 2023).

C. Study limitations

Policy experts and implementers interviewed for this study are not a representative sample. In addition, interview themes reflect only the implementation experiences and knowledge of those who were recruited and participated. Therefore, these findings may have limited generalizability. Also, due to the semi-structured nature of these interviews and time constraints during the interviews, not all respondents were asked every question in the interview guide.

In addition, the study does not address when key informants established their MMUs; some implementers established their MMUs before the moratorium and others after the moratorium ended. In addition, although the study sought to better understand the barriers and facilitators to implementation in the context of new flexibilities for telehealth and methadone take-home doses, not all states with MMUs have adopted these flexibilities. For these reasons, study findings could reflect barriers and facilitators to MMU implementation more broadly rather than in the context of specific policy changes.

Finally, the study team interviewed implementers who have successfully established MMUs or are in the process of doing so and did not speak with implementers who tried to establish an MMU but failed. This means the barriers identified may not reflect those that preclude successful implementation. Additionally, one implementer who has experience overseeing the needs of MMU implementers at the national level provided insights on policy-related topics rather than feedback on direct experiences with MMU implementation. While we included insights from this respondent in our findings on barriers and opportunities for MMU implementation (Sections III.B and III.C), many of our findings from implementers in Section III.A only reflect findings from the other eight implementers with direct experience overseeing MMUs (referred to as "direct MMU implementers").

III. Findings

In this section, we present a summary of findings from our interviews with MMU implementers and policy experts. When applicable, we summarize findings from the environmental scan to provide context or additional examples. We begin by describing the current state of MMUs, including the populations and geographic areas they serve and how they are funded and staffed. Next, we describe barriers that affect each phase of MMU implementation: (1) establishing MMUs, (2) sustaining and operating MMUs over time, and (3) expanding MMUs by adding units or stops to serve more areas. Finally, we present respondents' feedback on opportunities for action to reduce barriers to MMU implementation. Appendix A details the number of respondents who spoke to each theme mentioned in the report. Unless specified as implementers or policy experts, the number of respondents mentioned in the text refers to the number of total respondents who mentioned a theme.

A. Overview of MMU implementation

Populations and geographic areas served by MMUs. Policy experts interviewed for this study described several special populations that experience disparities in access to opioid use disorder treatment and might benefit from MMU services (see callout box). Although most direct MMU implementers reported that their MMUs serve the general population (n = 6), others aim to reach some of these special populations, including people experiencing homelessness (n = 3), people in residential treatment facilities (n = 1), or people in correctional facilities (n = 1). Two implementers mentioned plans to begin serving correctional facilities in the future and a third plans to begin serving a nursing home. Although federal rules that limit access to Medicaid services among incarcerated people can present a barrier to serving justice-involved populations, one MMU implementer noted that its state was in the process of applying for a waiver to continue Medicaid services for patients who are incarcerated for short durations.[4]

Populations with the greatest need for MMU services

- People in rural areas (n = 9)
- People in urban areas with limited access to methadone treatment (n = 6)
- People experiencing homelessness (n = 6)
- People with limited access to transportation (n = 4)
- People with mobility issues (n = 3)
- People who are incarcerated (n = 3)
- People in residential programs or nursing homes (n = 2)

Note: Numbers shown in parentheses are the number of policy experts who reported each population.

Of the eight implementers with direct experience overseeing MMUs, half oversee MMUs operating in rural (n = 4) or and half oversee MMUs operating in urban areas (n = 4), and one serves a suburban area but transports people from an urban area to this MMU.[5] Policy experts reported that some states focused initial MMU efforts in urban areas but plan to expand to more rural areas. Several MMU implementers

[4] At the time of our interviews, four states had Medicaid 1115 demonstration waivers in place to provide Medicaid services, including substance use disorder treatment services, to people transitioning out of incarceration. In July 2024, five additional states received approvals for such waivers (CMS 2024).

[5] Counts total to nine because some implementers oversee multiple MMUs; one respondent oversees two MMUs in a rural area and one in an urban area. We used respondents' descriptions of whether they serve an urban or rural area to develop these counts.

interviewed for this study (n = 4) described how, when deciding where to locate new MMUs, their OTPs considered areas in which people do not otherwise have easy access to methadone treatment because of barriers such as limited public transportation. Respondents added that transportation can be a barrier even in urban areas that are geographically close to an OTP. For example, one implementer noted that patients may need to take two buses to access the brick-and-mortar OTP even though they are only a couple miles away; this OTP established an MMU to address this barrier to access. Implementers use data sources such as state data on overdose "hotspots" (n = 2) and a state needs assessment identifying areas with high need for methadone services (n = 1) when deciding where to locate their MMUs. OTPs may also decide to serve locations where community partners provide other substance use disorder-related services. For example, one implementer with three MMUs noted that it uses the parking lots of community partners offering recovery services while another MMU partners with residential substance use disorder treatment facilities that cannot dispense methadone.

> "If you're looking at a map, it's hard [not] to just assume this heavily populated urban area is only a mile or two from this OTP, so that market is saturated. That's not really how it is because people don't have transportation or maybe they're living unhoused and have a lot of difficulty getting to another place." —Implementer

Services offered by MMUs. Generally, the services offered by MMUs are similar to those provided by their brick-and-mortar OTP. All MMUs represented in this study provide methadone maintenance services for people who have already initiated treatment and six also offer methadone initiation. Although seven MMUs dispense or prescribe multiple forms of MOUD, respondents noted that methadone is the most requested form among their patients. Most respondents (n = 11) reported that telehealth helps facilitate visits with OTP medical providers, who typically do not travel on the vehicle daily but can offer dose adjustments and methadone initiation via telehealth.

Impact of recent policy changes

Respondents were asked how SAMHSA's April 2024 modification to 42 CFR Part 8 allowing additional flexibilities, including take-home methadone doses and initiation of methadone treatment via telehealth, has affected MMU services. Three of the eight implementers with direct experience overseeing MMUs use telehealth for methadone initiation since the recent rule modification to 42 CFR Part 8; others are considering using telehealth for methadone initiation in the future. Among these implementers , the percentage of patients qualifying for take-home doses ranged from 40 percent of patients at one MMU to 90 percent of patients at another MMU. Five respondents mentioned that the ability to offer take-home doses might allow MMUs to serve additional sites on different days of the week. Two respondents thought that take-home doses might reduce the need for MMUs because there would be fewer barriers to accessing methadone regularly. Others were unsure of the effect on need for MMUs because some patients not eligible for take-home doses would still need daily access to the MMU.

In addition to methadone initiation and maintenance services, OTPs must provide counseling to patients as clinically necessary; in 23 states, OTP patients must participate in a set counseling schedule (Medication Assisted Treatment For Opioid Use Disorders 2001; Pew Charitable Trusts 2022). If the MMU is not able to provide all required OTP services, such as counseling or other assessments, these must be conducted at the OTP (SAMHSA 2023). Of the eight implementers with direct experience implementing MMUs

interviewed, five oversee MMUs that offer both in-person and telehealth counseling options, and the others oversee MMUs that offer either in-person counseling or telehealth counseling only. Although counseling can be difficult to offer onboard the MMU because of space constraints and lack of soundproofing, most MMUs have a small, dedicated space to provide counseling on the vehicle or use a nearby outside space. For example, three implementers reported using nearby spaces to host their counseling sessions, including a health department, a community health center, and rented office space. Most respondents cited telehealth as a facilitator in offering counseling services (n = 11). By using telehealth to provide counseling services at least some of the time, MMUs can rotate the days on which counselors are on board the vehicle. Telehealth also allows MMU patients to access group counseling sessions, which are typically not available via the MMU.

OTPs may also offer other health and social services to support patients in their recovery. Most MMU implementers (n = 7) reported offering some of these services, including case management, vocational counseling (including via telehealth), hepatitis C treatment, wound care, naloxone kits, contraception, communicable disease testing, and housing support. In general, MMUs with larger care teams are able to offer more comprehensive services than those with smaller staffing arrangements. Two MMUs have companion vehicles that provide transportation to patients seeking to access the MMU.

Unique funding mechanisms for MMUs

- Similar to the Medicare **bundled payment rate** that OTPs can use to cover provision of methadone treatment and associated counseling services, some states are exploring Medicaid bundled payment rates for use in OTP and MMU settings. Five respondents reported that states are exploring or have implemented Medicaid bundled payment rates for MMU services; one policy expert clarified that use of bundled payments can incentivize use of take-home doses. Since bundled payments reimburse providers for the totality of care, providers will be paid for services even when a patient is given take-home doses and does not come for their methadone doses in-person. Thus, MMUs receiving bundled payments will receive revenue even when they allow take-home doses.
- When permitted by a state's Medicaid program, providers can use a designated **place of service modifier** when billing for MMU services to indicate that the service was delivered in the community and is thus eligible for higher reimbursement to cover the full cost of care. One state recently implemented a 40 percent higher rate for services delivered in the community, which respondents from that state felt has been helpful. These respondents noted, however, that the in-community rate does not apply to the state's bundled rate for weekly methadone doses, so the ability to stack the in-community modifier with the bundled rate would be even more helpful to offset the cost of delivering methadone via MMUs.

Funding to establish and operate MMUs. SAMHSA's letter to states in August 2021 clarified that states may award contracts (but not grants) to for-profit organizations such as OTPs to implement MMUs. It also clarified that Substance Use Prevention, Treatment, and Recovery Services Block Grant[6] funds may be used to purchase vehicles to serve as MMUs (SAMHSA 2021). This funding stream is critical given the high cost of purchasing these vehicles and making needed vehicle modifications to comply with DEA regulations (NASEM 2022). Nearly all respondents in this study (n = 17) mentioned that OTPs use some form of grant funding to cover the one-time costs of establishing an MMU. This includes funds from the SAMHSA's

[6] This grant was formerly called the Substance Abuse Prevention and Treatment Block Grant.

State Opioid Response grant program, other state-specific funding that OTPs receive by responding to request for proposals, or philanthropic funding. Although some State Opioid Response funds may be available for MMUs to put toward the cost of operating the unit, most grant money is spent to purchase the vehicle and hire staff to start. Six respondents reported that state funds from opioid-related litigation settlements have been or may be used to establish MMUs. In one state that has disbursed opioid settlement funds to establish MMUs, OTPs have used these funds to purchase and outfit MMU vehicles. Another state plans to use opioid settlement funds to help OTPs establish MMUs and will distribute funds through a procurement process. One implementer at a for-profit OTP reported establishing its first MMU using company revenue, though grants financed subsequent MMUs.

All implementers who directly oversee MMUs reported that once established, MMUs predominately rely on Medicaid reimbursement to cover ongoing cost of operations (n = 8). MMU implementers interviewed for this study reported that most of their patients have Medicaid coverage; several of these implementers reported that Medicaid covered upwards of 90% of their patient population. Although some MMUs reported accepting Medicare (n = 6) or commercial insurance (n = 7), these payers cover a much smaller proportion of their overall patient population, and only three implementers reported serving patients who are not covered by an insurance plan and instead pay out of pocket. Four respondents reported using grant or philanthropic funds to offset low insurance reimbursement rates; these funds are used to cover staff salaries, additional services, and MMU operating expenses, such as security detail.

MMU staffing. Several implementers and policy experts reported that MMUs typically have three to four staff members on the unit on a given day (n = 7). Five respondents further explained that their MMUs rotate staff, and types of staff, day to day. Types of staff on the unit typically include a driver, nurse, counselor or peer support, security guard, and medical provider, but respondents noted that nurses and counselors are essential to staffing the MMU. Five respondents reported that medical providers are only physically present on certain days of the week or as needed, such as when initiations are scheduled. Two implementers stated that their driver doubles as a security guard.

Impact of MMUs on quality of and access to care

- All nine policy experts agreed that the **quality of methadone treatment** provided by MMUs is equal to that provided by OTPs, with one noting that patients may spend less time waiting at the MMU than at the home OTP. Two respondents added that MMU services can reduce the amount of time patients must travel to access methadone services and thus help them maintain employment.
- Seven direct implementers agreed that their MMUs have improved or greatly improved **access to methadone services** in their area. Three implementers felt that the MMUs motivated people not previously engaged in treatment because of transportation or other barriers to access treatment, and two shared that the MMUs had seemed to have helped decrease rates of overdose in their areas. The implementer that felt the MMU did not improve access noted that methadone access already existed in the area and explained that they were not able to place their MMU in an area of higher need because of local ordinances limiting where the MMU could go.

B. Barriers to providing MMU services

In this section, we describe barriers to establishing, operating, and expanding MMU services based on responses from MMU implementers and policy experts interviewed for this study.

1. Establishing MMUs

OTPs seeking to establish MMUs face significant challenges, including community resistance to MMUs operating in their neighborhoods because of stigma associated with opioid use disorder and methadone treatment; high start-up costs to purchase and outfit the vehicle in compliance with DEA regulations; and strict federal, state, and local statutes and zoning regulations that make it difficult for OTPs to identify service locations.

Community resistance. In some communities, residents or businesses resist MMUs operating in their neighborhoods, making it more challenging for MMUs to find space to operate. In all, 12 respondents reported that OTPs may encounter community resistance when seeking to establish an MMU because of stigma around opioid use disorder and MOUD, or lack of awareness of the need for opioid treatment in their community. Among these respondents, nine identified community resistance as the biggest challenge to establishing an MMU. This resistance can make it difficult for OTPs to identify and secure an operating site. Community resistance can also present barriers to serving certain populations; two respondents noted that some tribal nations have not been open to hosting MMUs because of stigma around methadone services and a preference for other forms of MOUD, although these attitudes are slowly changing.

Start-up costs. A total of 10 respondents identified start-up costs, particularly the purchase of the vehicle, as a challenge to establishing MMU services; among these respondents, five cited financing as the biggest barrier to establishing an MMU. Vehicle costs range from $300,000 to nearly $500,000, depending on the configuration of the unit and whether the unit came from a company that guarantees the vehicle's design will comply with DEA regulations (see below). One respondent mentioned that even though they expected to receive a grant to fund the purchase of their MMU, their OTP had to make the upfront purchase and was reimbursed later, which required sufficient available funds.

Regulatory requirements. DEA regulations require MMU units to outfit a suitable vehicle with a secure safe to store the methadone, appropriate security measures, a system for record keeping, adequate workspace for clinicians, and Wi-Fi access for computers. The MMUs must also have a detailed system to track dispensing and properly dispose of unused medication (Breve et al. 2022). In addition, MMUs must return to their affiliated brick-and-mortar OTP at the end of each business day for storage (Bureau of Justice Assistance 2021). These regulations can limit the geographic range and operating hours of the MMU and contribute to wear-and-tear on vehicles (DEA 2021).

In all, 13 respondents identified some type of challenge related to obtaining DEA approval, though most did not view this as the primary barrier to establishing an MMU. Three respondents said there is insufficient available guidance on these requirements, and two said that inspections were challenging to pass. Respondents also described wide variation in the interpretation of requirements across local DEA offices; this meant some implementers reported limited challenges obtaining DEA approval and others noted substantial challenges. Four respondents reported that it can take a long time to secure DEA or state regulatory approvals. For example, it took an OTP in Massachusetts two years to obtain the needed regulatory approvals and to outfit a recreational vehicle to comply with DEA requirements (Serres 2023). One policy expert added that some states require a certificate of need to establish an MMU, which means the OTP must prove the MMU is necessary to address unmet need in an area.

> "Literally, the DEA should be handing out blueprints. If they really have a specific look they want these things to look like, then hand out the blueprint and tell them how to build them. And don't waste our time and our money by having us build them the wrong way and then you coming in later and telling us we did a bad job. Because that's how it feels.
>
> —Implementer

Zoning regulations. State statutes and zoning regulations can make it difficult for OTPs to identify service locations and create administrative or financial barriers to operating a unit. For example, zoning regulations might prohibit MMUs from operating within a certain distance of public spaces (El-Sabawi et al. 2021). In addition, some state statutes and local policies related to zoning and vehicle licensure may require MMUs to obtain expensive permits in order to operate (Gibbons et al. 2022). Three respondents said that prohibitive zoning regulations can present barriers to identifying a service location. In other cases, there may be a lack of zoning regulations. For example, a policy expert said that zoning laws often do not have a section that addresses mobile medication units. This might prevent local officials from allowing the units because there is no clear guidance on their approval.

> "We ran into a variety of issues with [zoning], where we would contact the city and say, hey, we'd like to put a mobile unit here. Here's who we are. Here's what we do. Provide them with hundreds of pages of this is all the information you need. And then they would try to zone us like a food truck and like a taco truck. And then we would have to still follow the medical zoning and the food truck zoning at once."
>
> —Implementer

2. Sustaining MMUs

Barriers related to sustaining MMUs over time include low Medicaid reimbursement rates for methadone treatment, operational expenses to staff and maintain the vehicle, and logistical difficulties related to the need to drive to a service location.

Insufficient insurance reimbursement rates. MMUs require staffing for care delivery, security personnel, and administrative support for billing, which presents substantial ongoing costs (Gibbons et al. 2022).

OTPs must also anticipate costs associated with repairs and gas for the vehicle, which can be difficult to plan. Nine respondents noted that MMUs rely on Medicaid payments to cover the costs of operating the MMU, though several respondents said reimbursement rates for Medicaid are inadequate (n = 6), especially when compared with the Medicare rate. One implementer said that, without grant funding to supplement Medicaid reimbursement, the MMU would have to reduce service offerings. Even with adequate reimbursement rates, many respondents (n = 9) emphasized that MMUs require a sufficiently large patient population to generate enough revenue to cover the cost of traveling to and delivering care in an area. Four implementers estimated that the number of patients needed to sustain an MMU range from at least 100 patients to upward of 200.

Vehicle maintenance. In all, 10 respondents identified vehicle operation and maintenance expenses as substantial ongoing costs that OTPs face when providing MMU services. Vehicles' mechanical and electrical components wear down and need replacement, which takes the MMU out of service and costs the OTP time and money because it cannot generate revenue during this time along with the need to pay for the cost of upkeep and repair. Vehicle breakdowns also affect patients' access to services. For these reasons, OTPs must have contingencies in place to ensure service continuity when MMUs break down or need repairs.

> "And then the upkeep on the units. They're big. Envision an MRI or mammogram bus. They're big like that. They have generators, propane tanks. They need new tires quite often. They need a lot of maintenance. I think something that would be helpful if there's grant funds for the operational expenses after maybe the first year a mobile unit is out in operation."
>
> —Implementer

Physical limitations of vehicle. Eight respondents reported that limited space in the MMU constrains the number of staff and patients who can be onboard at any given time. This means that MMUs must maintain a sufficiently small care team that can also provide all the services that patients need. Some implementers use creative approaches to addressing these limitations, including additional support vehicles to transport all necessary staff to each site (n = 2) or tables and tents outside the MMU to serve patients when space on the van is tight (n = 2). Several implementers (n = 3) noted that physically accessing the MMU van to receive services can be difficult for people with mobility issues, although certain MMU models may be equipped with wheelchair lifts. Finally, four respondents mentioned concerns that, because MMUs cannot provide private waiting rooms, patients who need to wait outside the vehicle may be deterred from accessing services. One implementer addressed this concern by moving its MMU to an area that has less public visibility but is still easily accessible (a local fairgrounds).

At the same time, the size of the MMU is a barrier in urban settings. Five respondents reported that MMUs, which are typically longer than 30 feet and between eight and 10 feet wide, can be difficult to navigate and park on congested and narrow urban streets.

> "In particular, the vans that we were looking at…and I would say this would probably be typical for any urban area, it's impossible to take a full-size, RV-size van, trailer. We could never get it through [our city's] streets. It was simply [the fact that] there were too many traffic ordinances, that they could only be so wide, they could only be so long, you would be blocking city streets.
>
> - Policy expert

Securing staff. Although MMUs may share staff with their home OTP, five respondents said that it can be difficult to hire staff for MMUs because of the tight working quarters, travel time, and potential need to work in inclement weather. The ongoing behavioral health workforce shortage intensifies this challenge. Two respondents also mentioned that staffing disruptions can be more difficult for MMUs to handle relative to brick-and-mortar OTPs because there is typically not staff able to substitute for the positions required in the unit; when someone calls out sick, a replacement is not readily available.

3. Expanding MMUs

OTPs may seek to expand MMUs' reach by adding vehicles that will service new areas or adding stops to an existing route. Many of the challenges associated with expansion overlap with the barriers that OTPs face when establishing their initial MMU (for example, expenses associated with purchasing the new vehicle and securing its regulatory approval). In addition, patient volume remains a concern when expanding; there is no guarantee that there will be enough patients in a new area to make the unit financially feasible. Ten respondents cited particular challenges associated with expansion, including inadequate time to add a second stop to existing MMUs and inability to travel longer distances from the home OTP because of regulatory requirements.[7] Two policy experts said that, because MMUs remain relatively novel, OTPs may need more time to learn about successes and best practices before feeling confident in expanding.

[7] Interview protocols for implementers and policy experts are not uniform and implementers were not asked about MMU expansion. Therefore, the findings related to expanding MMU services come primarily from policy experts.

Operational logistics. Three policy experts raised concerns about the increased travel and preparation time associated with adding another stop to an MMU's route. A second stop means that set-up and breakdown must happen twice in an eight-hour window, further reducing the time available for dosing and patient care. Adding a stop also increases the amount of time the unit is not generating revenue while in operation. MMUs are therefore limited in their abilities to accommodate multiple geographical needs in a given day.

> "They've had times [when] they haven't been operational. They've needed repairs or different things. So, I think to expand to different localities, let's say somebody's going to go 20 miles further in distance, if you can't have a reliable unit, then how are you going to initiate that service?"
>
> —Policy expert

Regulatory requirement that MMU must return to the home OTP each day. This DEA requirement limits the reach of MMUs because the units must travel to the home OTP and store the methadone at the end of each day. One policy expert and one implementer noted that to ensure sufficient time to dispense medication, MMUs can realistically only travel so far from the home OTP. Two policy experts mentioned that DEA's overnight exemption, which allows units to park in a gated area instead of returning home, are only granted in emergency situations rather than on a routine basis.

C. Opportunities to increase access to methadone in underserved communities

Opportunities to overcome some of the barriers associated with establishing and sustaining MMUs include expanded peer-learning opportunities and technical assistance; additional funding for both start-up and ongoing operational expenses; modifications to burdensome regulatory requirements; and public awareness campaigns to reduce stigma around MMUs.

Opportunities for peer learning and technical assistance. Nearly all respondents (n = 16) cited the need for increased peer-learning opportunities and technical assistance to help those establishing MMUs navigate the process. Because many of the implementers interviewed were among the first to establish MMUs after the end of the DEA moratorium, they did not have other MMUs to reach out to with questions or for guidance. Several early adopters mentioned that they have been contacted by other OTPs seeking to establish an MMU. They noted that having a more formal peer-learning network would help them share information. Respondents expressed that peer-learning opportunities would allow them to ask questions to move forward with implementation, such as staffing or outfitting the unit. One respondent believed that peer-learning opportunities would be more effective for OTPs than top-down education from a government entity or provider association. Two respondents that had received technical assistance from other states noted that operational challenges are sometimes state-specific, such as weather-related issues or the way that local DEA offices interpret MMU requirements.

> "I think that reports from some of these first adopters at conferences to share some of the anecdotal and larger parts of the success story and the implementation success…would go a long way to having other providers be willing [to establish MMUs]."
>
> —Policy expert

Although respondents mentioned that some technical assistance is already available from national organizations such as the American Association for the Treatment of

Opioid Dependence and the National Association of State Alcohol and Drug Abuse Directors, they consistently mentioned the need for additional resources from federal, state, or local governments. For example, SAMHSA and other federal agencies could create technical assistance resources on navigating the regulatory process, and OTPs with existing MMUs could develop technical toolkits and resources on best practices. One implementer suggested that the DEA share contingency plans—such as what to do during a vehicle breakdown—that have been approved in the past so that implementers could learn from them. Similarly, other respondents thought a checklist of steps for MMU approval, including on how to outfit a vehicle to comply with DEA regulation, would be helpful.

> "[OTPs need] answers to technical questions and support about [practical questions like], 'What do you do when your van breaks down, what do you do when your nurse is sick, when do you do when your van needs to be serviced? How do you work out relationships in the communities that you're travelling to so that you can park safely and have security?'"
>
> —Policy expert

Additional grant funding. In all, 10 respondents mentioned increased federal or state grant funds—particularly multiyear opportunities—as an important area for further action. In addition to supporting the significant cost of establishing an MMU, these grants could fund ongoing expenses such as maintenance costs for the vehicles and help bridge the gap between establishing an MMU and obtaining enough clients to become financially sustainable. Implementers described ways in which funding could be used, including supplementing staff salaries to better retain workers and funding maintenance on vehicles and associated supplies such as generators and propane tanks. Other potential approaches, as noted in literature, could include using funds from litigation settlements with opioid manufacturers to create grants or establishing a funding source through the U.S. Department of Agriculture that could potentially assist with purchasing mobile vans if the OTPs meet the department's criteria for serving rural communities (Gibbons et al. 2022; DEA 2021). The federal government could also encourage state agencies to collaborate and pool resources to operationalize these units (El-Sabawi et al. 2021). In addition to the funding sources available for start-up costs, SAMHSA could clarify the long-term funding sources available to OTPs for implementation and evaluation of MMUs (Suen et al. 2023).

Enhanced Medicaid reimbursement. Eight respondents cited a need for higher Medicaid reimbursement rates to account for the ongoing costs of vehicle maintenance as well as the higher staff salaries that may be needed to attract and retain staff to work on the vehicles. These changes could be accomplished by identifying the rate threshold needed for an MMU to break even using OTP cost data and establishing billing code modifiers to indicate services delivered in MMU settings. As mentioned earlier, one state has already implemented such a place of services code modifier. Additional states are also exploring or using Medicaid bundled payment rates for MMU services, which can help incentivize MMUs' use of methadone take-home doses.

Policy changes. Most respondents (n = 13) recommended at least one policy change that could help remove barriers to establishing and operating MMUs. These include the following:

- **Streamlining DEA approvals.** Four respondents felt that, because of the urgency of the opioid crisis, DEA should streamline requirements for licensure and approvals of MMUs and standardize guidance across regional DEA offices. One respondent said that local DEA offices interpret the guidance around MMUs differently, so it would help to have the national DEA office standardize expectations so that rules are applied consistently across regions.

Other opportunities to expand methadone access

All six policy experts who were asked whether MMUs were sufficient to meaningfully expand access to methadone services felt that, although MMUs are helpful to expand methadone access, they should be viewed as one tool in a broader array of strategies to increase access to MOUD. Other tools could include the following:

- Pharmacy-based methadone (n = 3)
- Methadone dispensing in comprehensive outpatient clinics (n = 1)
- Provision of more methadone take-home doses (n = 1)
- Fixed-site medication units associated with a home OTP (as opposed to mobile units) (n = 1)

Note: Numbers shown in parentheses are the number of policy experts who reported each strategy.

- **Adjusting home OTP requirement.** As noted previously, several respondents (n = 4) believe DEA's requirement that MMUs return to the home OTP overnight is a barrier to expanding MMUs into rural areas most in need of methadone services, such as large rural areas in the West. Respondents suggested that DEA be more explicit about the requirements for an "exceptional circumstance" exemption to park an MMU somewhere else overnight. Other recommendations included allowing MMUs to park at a safe space under surveillance overnight (such as at a rural sheriff's department, police station, or hospital) or allowing units to connect with a more local primary care office as their base rather than the parent OTP. In addition, DEA could consider allowing MMUs to enter into DEA-approved agreements with state or local law enforcement to secure controlled substances (Suen et al. 2023; Johns Hopkins 2022; Gibbons et al. 2022; DEA 2021).
- **Pre-approving contingency plans or backup vehicles.** Two respondents suggested it would be helpful for their state to maintain a back-up vehicle that MMUs can borrow if they experience a breakdown or have planned maintenance. One of these respondents said that they have a backup MMU but have not yet received approval to use it, so having explicit regulations around approval requirements would be helpful. Another respondent explained that DEA will not pre-approve contingency plans for events such as inclement weather or flat tires, which presents a challenge because the DEA office does not open until several hours after MMU services are scheduled to begin each day. Having pre-approved plans that the OTP could use in such circumstances could eliminate this barrier.

Other policy recommendations included federal support to address zoning challenges, such as a regulation that designates OTPs and MMUs as providing essential services, which may make it easier for MMUs to find a site; one implementer noted that a state has issued that type of regulation. State and local governments could aid in identifying locations that could benefit from MMU services, and workforce programs such as loan forgiveness for employees of OTPs.

Public awareness campaigns. Given the stigma surrounding MOUD and the difficulty of gaining community buy-in to host MMUs, five respondents suggested that community education on the purpose and benefits of MMUs would be helpful. Suggestions from these respondents included federal public education campaigns, state communication to local government officials about the importance of MMUs, and education for local governmental officials and community organizations.

IV. Discussion

This study addresses existing gaps in knowledge regarding the implementation of MMUs after the DEA moratorium. In this discussion, we present key takeaways from this work and identify areas for future research.

Challenges related to financing MMUs are pervasive and affect all stages of MMU implementation. Financing is a key area of concern for implementers and policy experts; MMUs are expensive to purchase, operate, and maintain. This finding suggests that policy action at the state or federal level, such as longer-term grants or Medicaid reimbursement mechanisms that offer higher rates, may be critical to expanding MMU access and reach. Easing the financial burden faced by MMUs may also free up resources for furthering implementation success or even supporting expansion. For example, if fewer resources are needed to operate and maintain MMUs, their home OTPs may be able to fund education or awareness campaigns to reduce stigma in the communities they serve or hope to serve in the future.

Strategies to address environmental barriers to MMU implementation such as stigma, zoning, or other regulations likely require targeted solutions. Findings related to such barriers varied widely across respondents, suggesting that, in many cases, they are localized challenges that do have not one-size-fits-all solutions. For example, zoning regulations are developed at the local level, making it difficult to enact larger-scale changes. Similarly, resistance to opioid treatment programs may relate to broader contextual and political characteristics of a community or region. Therefore, successfully addressing these challenges will require a nuanced understanding of local and state factors.

Modifications to DEA regulatory processes could have a meaningful impact. Respondents understood that DEA has a mandate to ensure methadone is not diverted, but they generally felt that, because of the urgency of the opioid crisis, DEA could streamline its requirements to remove some of the barriers that MMUs face in getting regulatory approval. Providing clearer guidance on how to meet DEA requirements for MMU vehicles (and applying those requirements consistently across regions), pre-approving contingency plans, and reconsidering or removing the requirement that MMUs return to their home OTP each night would substantially reduce regulatory barriers that MMU implementers face in establishing and operating MMUs. Easing these regulatory burdens would also allow OTPs to focus their energies on addressing more localized challenges, such as developing community partnerships to increase awareness of MMUs and address stigma.

There is a critical need for peer-learning opportunities and technical assistance. Respondents cited this need even more often than the need for increased funding, suggesting that knowledge on how to address practical issues in establishing and sustaining MMUs could be a key facilitator to more widespread adoption of MMUs. Now that the first cohort of MMUs following the end of the DEA moratorium is operational, there is an opportunity to begin sharing early lessons learned through a more formal peer-learning network. Such networks could also include affinity groups for MMUs in certain geographic areas (for example, urban, rural) or serving certain special populations (for example, people experiencing homelessness or justice-involved populations). This also represents an opportunity to build on technical assistance efforts underway among national groups such as the American Association for the Treatment of Opioid Dependence and the National Association of State Alcohol and Drug Abuse Directors to ensure that tailored resources are available to OTPs seeking to implement MMUs in specific contexts.

MMUs can play an important role in serving special populations. Implementers interviewed for this study consistently expressed interest in serving populations who are incarcerated, who are experiencing homelessness, who are living in residential facilities, or with disabilities. Some respondents are already serving these or other special populations, and others hope to do so in the future. Because these populations face particular barriers to accessing methadone treatment, future MMU funding opportunities or technical assistance/peer-learning opportunities could focus on strategies to help improve access to and quality of methadone treatment for special populations.

Without policy changes, MMUs may continue to face barriers to serving rural areas. Although MMUs might be able to serve rural areas within an hour drive of an OTP, they are generally unable to serve locations further from an OTP because of the requirement to return home at the end of each day. Unless this requirement changes or exemptions are more easily granted, MMUs have limited utility in expanding methadone access in extremely large, rural states with very limited OTPs. For example, Wyoming currently has no OTPs, and therefore does not benefit from access to methadone services from MMUs. Without changes to this requirement, other policy solutions might be necessary to expand methadone access in these settings.

Further research is needed to fully understand how MMUs can be leveraged to increase access to methadone treatment. Because this study was relatively wide in scope—the aim was to understand implementation of MMUs broadly—we identified several areas in which further research could help elucidate specific aspects of MMU implementation and service delivery.

- **Understanding MMU implementation from other perspectives.** Future research could explore the experience of OTPs that sought to establish MMUs but were unable to do so, which would provide a clearer idea of barriers that prevent successful implementation. In addition, it is important to explore the policies and regulations in states that do not have MMUs to better understand the structural factors that might be prohibitive to methadone access.
- **Exploring challenges and facilitators to serving special populations.** These populations include rural and tribal populations or nontraditional populations, such as people who are incarcerated, in institutional settings, or are without shelter. Although respondents in this study provided important insight on these populations, much remains unknown because MMU implementation is still new in many areas and the focus of this study was broader in scope and thus did not explore challenges to and facilitators of serving these populations in great depth. There may be opportunities for targeted studies to learn more about how MMUs may best serve these or other special populations.
- **Considering patient experience.** Finally, there may be benefit to research exploring patients' experience with MMUs, especially relative to services at a fixed-site OTP. Respondents in this study were able to speak to their impression of patients' perceptions of the MMU, but hearing from patients themselves may contribute to the discourse in the field and identify best practices and opportunities for improvement.

Additional research on methadone access more broadly could explore use of unique or novel reimbursement models, alternative service delivery models for dispensing methadone, or holistic review of state policies that may make methadone access prohibitive.

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Appendix A. Table of Themes

Table A.1. Number of respondents reporting each theme

	Policy experts reporting	Implementers reporting	Total respondents
Populations and geographic areas that benefit from MMUs			
Populations MMUs serve or plan to serve			
Serve the general population	n/a[a]	6	6
Serve people experiencing homelessness	n/a	3	3
Currently serves or plans to serve correctional facilities in future	n/a	3	3
Serve rural areas	n/a	4	4
Serve urban or suburban areas	n/a	5	5
Focused initial efforts on urban areas but plan to expand to rural areas	2	n/a	2
Serve areas with limited public transportation	n/a	4	4
Serve areas with high rates of overdose or limited access to methadone services based on needs assessment	n/a	3	3
Serve locations with existing community partners	n/a	2	2
Populations with greatest need for MMU services			
Rural areas	9	n/a	9
Urban areas with limited access to methadone services	6	n/a	6
People experiencing homelessness	6	n/a	6
People without transportation	4	n/a	4
People who are incarcerated	3	n/a	3
People with limited mobility	3	n/a	3
People in residential facilities or nursing homes	2	n/a	2
MMU service provision and quality			
Medications			
MMU offers methadone initiation via MMU	n/a	6	6
MMU uses telehealth for methadone initiation	n/a	3	3
MMU dispenses or prescribes multiple forms of MOUD	n/a	7	7
Telehealth facilitates visits with OTP medical providers	4	7	11
Counseling			
MMU offers in-person and telehealth counseling	n/a	5	5
MMU offers in-person counseling only	n/a	2	2
MMU uses nearby space to host counseling sessions	n/a	3	3
Telehealth facilitates offering counseling services	5	6	11

	Policy experts reporting	Implementers reporting	Total respondents
Wraparound services			
MMU offers at least one type of wraparound service	n/a	7	7
MMU transports patients to MMU using companion vehicle	n/a	2	2
Quality of care			
MMUs provide methadone treatment of equal quality to that provided by OTPs	9	n/a	9
MMU services can help patients maintain employment	n/a	2	2
MMU has improved or greatly improved access to methadone services in the area	n/a	7	7
MMU engages people not previously engaged in treatment	n/a	2	3
MMU has helped decrease rates of overdose in area	n/a	2	2
Funding			
OTPs use grant funding to establish MMUs	9	8	17
Opioid settlement funds have been used or may be used to establish MMUs	5	1	6
MMU relies on Medicaid reimbursement	n/a	8	8
MMU accepts Medicare	n/a	6	6
MMU accepts commercial insurance	n/a	7	7
MMU has self-pay patients	n/a	3	3
MMUs use other funding to offset low insurance reimbursement	2	2	4
MMUs can use place-of-service modifier codes to enhance reimbursement	4	1[b]	5
Bundled payment rates can support MMUs	5	n/a	5
Staffing			
MMUs typically have three or four staff on vehicle at a time	2	5	7
MMUs rotate staff day to day	1	3	4
Medical provider is physically present on MMU as needed	1	4	5
Driver doubles as security guard	n/a	2	2
Impact of recent policy changes			
Increased methadone take-home doses could allow MMUs to serve additional sites in the future	3	2	5
Increased methadone take-home doses might reduce the need for MMUs	1	1	2

Appendix A: Table of Themes

	Policy experts reporting	Implementers reporting	Total respondents
Barriers to establishing MMUs			
Community resistance and stigma regarding MMUs	7	5	12
Expense of purchasing MMU vehicle	4	6	10
Challenges obtaining DEA approval	7	6	13
Insufficient guidance on meeting regulatory requirements	1	2	3
Difficulties with DEA inspection process	n/a	2	2
Length of time to get regulatory approval	2	2	4
Prohibitive zoning regulations	1	2	3
Barriers to sustaining or operating MMUs			
Insufficient Medicaid reimbursement rates	1	5	6
Developing adequate patient volume to make MMU financially sustainable	3	6	9
Patient volume of 100 to 200 patients is needed to sustain MMUs	n/a	4	4
Vehicle operation and maintenance expenses	5	5	10
Space limitations constrain the number of staff and patients that can be in the vehicle	4	4	8
Need for additional support vehicles to transport staff	n/a	2	2
Need to use tents or tables outside MMU	n/a	2	2
Limited access for people with mobility issues	n/a	3	3
Lack of waiting rooms to ensure patient privacy	2	2	4
Difficulty navigating large MMU in urban settings	3	2	5
Difficulty hiring staff for MMUs	3	2	5
Consequential effects of staffing disruptions	1	1	2
Barriers to expanding MMUs			
Similar barriers to establishing MMUs	4	n/a	4
Similar barriers to sustaining MMUs	3	1	4
Increased travel and preparation time associated with adding another stop	3	n/a	3
Travel time to return to home OTP each night	1	1	2
Inability to secure an overnight exemption from DEA on a routine basis	2	n/a	2
Lack of information on existing MMUs' successes and best practices	2	n/a	2
Opportunities to expand access to methadone services			
Increased peer-learning opportunities and technical assistance	7	9	16
Operational challenges are sometimes state-specific	0	2	2

	Policy experts reporting	Implementers reporting	Total respondents
Additional grant funding	6	4	10
Enhanced Medicaid reimbursement	3	5	8
Streamlining the DEA approval process	2	2	4
Adjusting home OTP requirement	1	3	4
Pre-approving contingency plans or backup vehicles	1	2	3
Other policy changes	3	3	6
Public awareness campaigns around purpose and benefits of MMUs	3	2	5
Other non-MMU policy changes to expand methadone access	6	n/a	6
Pharmacy-based methadone	3	n/a	3

Source: Qualitative interviews with respondents experienced in or with expertise on implementing MMUs.

Notes: Themes, which we list here in the order they appear in the report, are included in this table only if two or more respondents reported the theme.

[a] In this exhibit, n/a indicates that respondents in this category were not asked specifically about this topic.

[b] One additional implementer stated that there are discussions with state about potentially using modified billing codes for MMUs as a different place-of-service.

DEA = U.S. Drug Enforcement Administration; MMU = mobile medication unit; MOUD = medication for opioid use disorder; OTP = opioid treatment program.