

# Methadone Matters: What the United States Can Learn from the Global Effort to Treat Opioid Addiction

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In the midst of an opioid epidemic, mortality related to opioid overdose continues to rise in the US. Medications to treat opioid use disorder, including methadone and buprenorphine, are highly effective in reducing the morbidity and mortality related to illicit opioid use. Despite the efficacy of these life-saving medications, the majority of people with an opioid use disorder lack access to treatment. This paper briefly reviews the evidence to support the use of medications to treat opioid use disorder with a specific focus on methadone. We discuss the current state of methadone therapy for the treatment of opioid use disorder in the US and present logistical barriers that limit its use. Next, we examine three international pharmacy-based models in which methadone dispensing to treat opioid use disorder occurs outside of an opioid treatment facility. We discuss current challenges and opportunities to incorporate similar methods of methadone dispensing for the treatment of opioid use disorder in the US. Finally, we present our vision to integrate pharmacy-based methadone dispensing into routine opioid use disorder treatment through collaboration between clinicians and pharmacies to improve local access to this life-saving medication.

**KEY WORDS:** methadone; opioid use disorder; opioids.

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Expanding access to medications for opioid use disorder (MOUDs) is a critical piece in a comprehensive plan for addressing the opioid epidemic. In 2017 in the United States (US), 72,000 overdose deaths occurred and 2.1 million Americans (≈1%), aged 12 years and older, were estimated to meet criteria for the diagnosis of opioid use disorder (OUD).<sup>1,2</sup> These

realities exist despite having effective treatments for OUD. MOUDs, including methadone and buprenorphine, are associated with increased treatment retention, reduced use of illicit opioids, reduction in mortality, and better overall outcomes compared to non-pharmacological therapies alone.<sup>3–6</sup> However, only about 20% of Americans with an OUD receive MOUDs.<sup>7</sup> This treatment gap highlights the need to utilize both novel and proven means to initiate and engage affected individuals in treatment with MOUDs. Opportunities to do so with methadone exist and merit attention of policymakers, physicians, other clinicians, and communities.

Methadone is a proven and effective opioid medication used to treat OUD.<sup>8,9</sup> It has been shown to reduce overdose death<sup>4,10</sup> and reduce the consequences of injection drug use, including HIV and hepatitis C transmission.<sup>11,12</sup> In spite of this, methadone can be challenging to access in the US, especially in rural areas burdened by the opioid epidemic.<sup>13</sup> Unlike buprenorphine<sup>14</sup> and injectable naltrexone<sup>15</sup>, which have been available in office-based settings since 2000 and 2010, respectively, methadone can only be dispensed in Opioid Treatment Programs (OTPs). The number of OTPs in the US has remained fairly constant since 2003,<sup>16,17</sup> and these clinics are primarily located in urban areas (96%), limiting the availability of methadone treatment to people living in rural parts of the country.<sup>18</sup>

People living in nonmetropolitan areas have been greatly affected by the opioid epidemic.<sup>19–21</sup> According to National Vital Statistics System data, the percentage increase in drug overdose deaths in nonmetropolitan areas increased 325% from 1999 to 2015, surpassing the 198% increase in the number of deaths in metropolitan areas.<sup>22</sup> Accessing OUD treatment in rural areas is particularly challenging where clients may wait more than a year before an appointment becomes available.<sup>23</sup> Once they have made their appointment, people living in rural areas often travel between 50 and 200 miles, or even cross a state border, to get to the OPT.<sup>13</sup> Reaching a critical mass of a sufficient number of individuals with OUD who may benefit from methadone is just one reason that makes the creation of OTPs challenging in sparsely populated regions. The situation is further complicated by the

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observation that proximity to treatment is associated with increased treatment retention, presenting further unique challenges to patients in rural areas who wish to access this MOUD.<sup>24</sup>

In 2016, there were approximately 1500 OTPs in the US that provided methadone to over 356,000 clients.<sup>25</sup> The number of people who could benefit from treatment far exceeds the availability of these treatment facilities.<sup>17</sup> Currently, the provision of methadone to treat OUD in the US is highly regulated by the federal government.<sup>26</sup> Patients treated with methadone are evaluated by a physician at the OTP and methadone doses are dispensed by nurses at the program. This requires daily travel to the OTP, unless patients earn “take home” doses, which are offered if strict conditions are met.<sup>27</sup> These logistical challenges limit access to methadone for many Americans who live in areas where the nearest OTP may be hours away.<sup>28</sup>

This standard of care, access to methadone for OUD only delivered via an OTP, should be changed to meet our current medical and public health crisis. Alternative strategies that provide greater flexibility to access methadone treatment are used in other parts of the world.<sup>29</sup> Specifically, dispensing of methadone at a pharmacy after a physician prescribes the medication in an outpatient clinic is a viable solution to the lack of access in rural communities. Unfortunately, this rational approach is currently prohibited under US federal law. To address barriers limiting access to methadone in our country, the US can learn from different models with years of experience in other countries.

### INTERNATIONAL PERSPECTIVES

Various models for the diagnosis, management, and delivery of MOUDs exist internationally:

**Canada**<sup>30</sup>. In Canada, pharmacists in accredited pharmacies are permitted to dispense methadone in daily doses for the treatment of OUD after obtaining a prescription from a physician.<sup>31</sup> Methadone can also be dispensed in a clinic, by a physician, or their delegate. The patient’s identity must always be confirmed, and if dispensed at a pharmacy, the pharmacist directly observes the ingestion of methadone. Similar to US federal regulations, patients are authorized “take home” doses as their treatment course successfully progresses. All services are covered by the Canadian public health insurance system.

**Australia**<sup>32, 33</sup>. Methadone is dispensed from specialty clinics and community pharmacies after an authorized physician writes a prescription. Publicly funded specialty clinics provide methadone to patients without co-payment, whereas pharmacy-based services charge a co-payment for the dispensing service, a barrier for some patients.<sup>32</sup> The availability of methadone is limited by capacity within both public specialist clinics and

community pharmacies providing the service. The use of community pharmacies relieves workload at specialty clinics, reduces costs, and increases treatment capacity, especially in rural areas where access to specialty clinics may be limited.<sup>32</sup>

**UK**. Methadone maintenance therapy is initiated by substance misuse specialist prescribers who titrate to an effective dose. Once a patient has been stabilized, the prescribing can be taken over by a general practitioner (GP). Methadone is then dispensed in a pharmacy under pharmacist supervision, who monitor daily doses and ensure there is no diversion. The National Health Service covers the cost of methadone and psychosocial treatment resources.

### CHALLENGES AND OPPORTUNITIES IN THE US

Lack of training among physicians, nurses, and pharmacists, and negative attitudes and beliefs about patients with OUD, may limit these healthcare professionals from taking on the challenge of pharmacy-dispensed methadone. Nonetheless, a greater number of physicians are receiving training in addiction medicine and addiction psychiatry, and increasingly, primary care physicians are incorporating addiction treatment into their practice.<sup>34, 35</sup> New educational guidelines and curricula are being developed, presenting an opportunity to teach medical, nursing, and pharmacy trainees about MOUDs. The nursing role in the treatment of OUDs is becoming central and training is appropriately increasing. Pharmacists need to be summoned in this era where all professional “hands on deck” should be utilized. While pharmacists would require extra training to dispense methadone, this would be in keeping with their increasing importance in managing other chronic conditions.<sup>36</sup> Pharmacists would be trained to dispense methadone, monitor for adverse effects, and look for signs of diversion. Pharmacists are accustomed to identifying drug-drug interactions, advising on side effects, and monitoring for medication safety issues. Thus, pharmacists are well-positioned, not only to ensure safe delivery of methadone, but also to help identify and prevent relapse.

In addition to addressing the needs for increased training and education, at least four key systemic barriers would need to be addressed:

First, are pharmacies sufficiently located in rural areas to provide methadone to a broad range of people? According to data from the National Council for Prescription Drug Programs, the number of community pharmacies in the US increased from 63,752 pharmacies in 2007 to 67,753 pharmacies in 2015.<sup>37</sup> OTP availability is far more limited. The Substance Abuse and Mental Health Services Administration (SAMHSA) Opioid Treatment Program Directory lists 1613 active OTPs in the US.<sup>38</sup> Pharmacy-dispensed methadone would allow for increased availability of OUD treatment for people living in rural, suburban, and urban areas in the US.

Second, how can pharmacies be best equipped to dispense methadone in a private and safe manner? We anticipate that the existing infrastructure could support methadone dispensing with modest modification. Privacy is offered to all patients who come to a pharmacy to pick up medications, and this practice need not undergo major changes for patients who require methadone. Furthermore, many pharmacies offer a privacy wall<sup>39</sup> where people receive vaccinations, an area which could be used to dispense methadone. There is also the additional benefit that many pharmacies remain open 12 hours or more a day, giving patients added flexibility compared to OTPs with narrow treatment windows.

Third, how can meaningful pharmacist and prescribing provider communication be ensured? Promoting patient safety in the distribution of other potentially dangerous medications such as prescription of opioids and benzodiazepines is an ongoing area of discussion, particularly in situations when the prescriber and pharmacist operate in two different health systems. Strategies such as prescription drug monitoring programs are being implemented to build stronger bridges between physicians and pharmacists, and other approaches to improving this communication may be adapted from countries who have been using this system safely for many years.

Finally, how will insurance companies compensate for pharmacy-dispensed methadone? Reimbursement structures would need to be negotiated, with high, upfront costs of implementation mitigated by a new revenue source for pharmacies. If, and how, state and federally funded or private insurers would support these costs requires further consideration. Nonetheless, state and federal funding is increasing for treatment and addiction research, opening the door to effective possibilities and innovations.

## OUR VISION

Turning the tide on the opioid crisis will require significant changes in the approach to addiction treatment. Policymakers should take heed that the current approach is not reaching enough affected individuals, and that those from rural communities are disproportionately disadvantaged.<sup>13, 24</sup> Other countries have demonstrated that alternative strategies for methadone distribution can be safe, effective, and economical. We propose that increasing the ability for patients to access methadone needs to be done and can be achieved with close collaboration between clinicians, pharmacies, and policymakers. As we can see from successful examples in several countries, a clear precedent for a pharmacy-based distribution model could take advantage of existing infrastructure to markedly increase our ability to distribute this life-saving medication.

One potential system could blend elements of the Canadian approach with innovative American models of care. The primary care provider would prescribe methadone, while monitoring could be accomplished in collaboration with a clinic

nurse and a specialty-trained pharmacist, who would dispense the methadone at a local pharmacy. This model has been shown to be an effective treatment method for patients with OUD prescribed buprenorphine.<sup>40</sup> The effectiveness of this methadone treatment system in Canada suggests that with the appropriate structure put in place, physicians are willing to provide methadone prescriptions for OUD from their own offices. With adequate training, participating pharmacists are capable of supervising the daily observed ingestion of the medication, and monitoring patients for signs of toxicity. This training could be adapted from that of Canadian colleges (or from those of other countries with similar systems, such as the UK or Australia). Finally, government agencies and private insurance companies would be tasked with designing a remuneration strategy for those participating in the program. The cost-effective nature of this form of distribution, compared to supporting dedicated methadone clinics and/or caring for the consequences of patients with untreated OUD, would merit review.

A pharmacy-based approach would not replace existing OTPs but could build off of them in a number of ways (e.g., as a hub for a “hub-and-spoke” model or referral to a higher level of care when needed for an office-based addiction treatment program).<sup>40, 41</sup> Complex or unstable patients who require a higher level of resources could still attend designated OTPs, where they would be able to access more comprehensive care (similar to the Australia and UK models). At an appropriate time, they could be stepped down to their primary care provider, who could continue to treat them closer to home. At any time, they could be referred to a “hub”, should they require more intensive services.

Improving access to life-saving medications for patients in proximity to where they live is crucial to address the opioid crisis. While we support research into strategies to combat this rising epidemic, implementing effective strategies supported by the best current evidence is the low hanging fruit upon which we can begin building a solution to the greatest North American public health crisis of the twenty-first century.

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