Opioid Addiction Treatment in Wisconsin: An Assessment of Need and Options for Expanding Access

Prepared for the
Wisconsin Legislative Council

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Workshop in Public Affairs
Spring 2015

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Foreword

This report is the result of collaboration between the Robert M. La Follette School of Public Affairs at the University of Wisconsin-Madison and the Wisconsin Legislative Council, a state agency. The objective of this project is to provide graduate students at the La Follette School the opportunity to improve their policy analysis skills while contributing to the capacity of partner organizations.

The La Follette School provides students with a rigorous two-year graduate program leading to a master's degree in public affairs. Students study policy analysis and public management, as well as concentrating study in at least one policy area. The authors of this report are all in their final semester of their degree program and are enrolled in the Public Affairs 869 Workshop in Public Affairs at the University of Wisconsin–Madison. Although studying policy analysis is important, there is no substitute for engaging actively in applied policy analysis as a means of developing policy analysis skills. The Public Affairs 869 Workshop gives graduate students that opportunity.

The nonpartisan Wisconsin Legislative Council provides support to legislators and committees of the Wisconsin Legislature by convening study committees and drafting special reports. The issue of opioid addiction and treatment is of growing concern nationally and in Wisconsin. The Legislative Council is attempting to better understand treatment alternatives, and how legislative and regulatory actions might enhance public access to opioid addiction treatment for patients in the greatest need of help. This report summarizes current treatment access using public and administrative data and then uses this analysis to inform a range of policy options for expanding access to treatment. Given the harm imposed on families and communities by opioid addiction, this issue is critical for policymakers to better understand.

I am grateful to the Legislative Council for partnering with the La Follette School on this project. The staff of the council have been generous with their support for the students, and the students have collectively contributed hundreds of hours to this report. The La Follette School is grateful for their efforts and hopes that this report proves valuable for the development of policies that can improve the welfare of families and communities struggling with the hardships of addiction.

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May 2015
Madison, Wisconsin

Acknowledgments

Our team owes a debt of gratitude to everyone who assisted us during the production of this report. We would like to thank:

- Representative John Nygren and Jennifer Malcore, without whom this endeavor would not have been possible
- Mary Matthias and Melissa Schmidt at the Wisconsin Legislative Council for soliciting this report and advising us throughout the project
- Louis Oppor and others at the Wisconsin Department of Health Services for granting us access to their data and expertise
- Dr. Aleksandra Zgierska and Kevin Meighan for providing their expert advice
- Karen Faster for helping this project reach its full potential
- Professors Michael Collins and Don Moynihan for their guidance and mentorship, which have immensely enriched our educational experience

Executive Summary

Drug abuse is now the leading cause of accidental death in the United States. An alarming number of these deaths can be attributed to a group of drugs known as opioids. Opioids include the illicit drug heroin in addition to pain-relieving drugs such as hydrocodone, oxycodone, morphine, methadone, and buprenorphine. In Wisconsin alone, opioid-related deaths nearly doubled from 2005 to 2012, indicating that opioid abuse is a serious threat to the well-being of Wisconsin residents.

Addressing opioid abuse and addiction requires a multifaceted approach. Ensuring accessible and effective opioid addiction treatment is a key part of any strategic plan to address the problem. This report examines several aspects of opioid treatment necessary for designing policy interventions to combat the growing danger posed by opioid addiction.

Wisconsin must supply opioid addiction treatment services that are accessible and clinically effective. Medication-Assisted Therapy (MAT) is the treatment process officially recommended by the Federal Government. However, individuals seeking opioid addiction treatment may experience difficulty in obtaining MAT due to geographic limitations and lifestyle impact.

MAT requires pharmacological and counseling therapies, and a significant investment of time and determination on the parts of the individual with the opioid addiction and the physicians and therapists who must collaborate to make recovery a reality. Individuals can obtain MAT from a variety of sources. Many individuals seek treatment from state and federally certified treatment centers known as opioid treatment programs (OTPs), commonly known as methadone clinics. Others obtain services from hospitals and mental health care centers, but each treatment setting comes with unique strengths and limitations.

As addiction is a disease for which there is no cure, treatment focuses on managing the negative effects of addiction. This report examines the current supply of opioid addiction treatment services in Wisconsin and identifies barriers to accessing treatment services.

An individual seeking treatment for opioid addiction ideally will progress through a four-phase treatment process. First, treatment providers assess the individual and diagnose their condition. Next, the individual undergo detoxification with the assistance of treatment opioids like methadone and buprenorphine or other medications that ease the side effects of withdrawal. The patient begins MAT with or after detoxification. This phase can last years or, in extreme cases, a lifetime. When the patient is physically and psychologically ready, s/he begins tapering off the treatment drugs and shifting to continuing care. The continuing care phase involves planning for lifetime addiction management and therapeutic support.

A complex web of state and federal regulation governs OTPs. In addition to federal regulations, Wisconsin has its own regulations that affect patient access to MAT and create administrative burdens. Some of these regulations impair access by requiring individuals to reside within a specific distance of the facility and by setting directives that govern where and from whom an individual seeking treatment may obtain these services. Regulation is important for ensuring ethical behavior and the delivery of clinically effective services, but some of Wisconsin's

regulations needlessly restrict the delivery of clinically effective and accessible treatment services.

This report examines five policy options that can increase access to treatment services and ensure clinically effective treatment. For example, Wisconsin regulates the treatment of opioid dependence more stringently than the federal government requires. Creating a more favorable regulatory environment could increase accessibility to treatment for many of those in need. The State could add training to the medical school curriculum to increase the number of physicians qualified to prescribe treatment drugs, or it could create comprehensive care facilities that utilize MAT. Wisconsin could also increase access to MAT by expanding a pilot program of county collaboration. This program encourages counties to collaborate and share services. Finally, the State could begin collecting more data specific to opioid use. Data regarding this issue are often missing, unreliable, or limited. Improving data collection and reporting would help the State quantify unmet need and better develop programs to address opioid abuse.

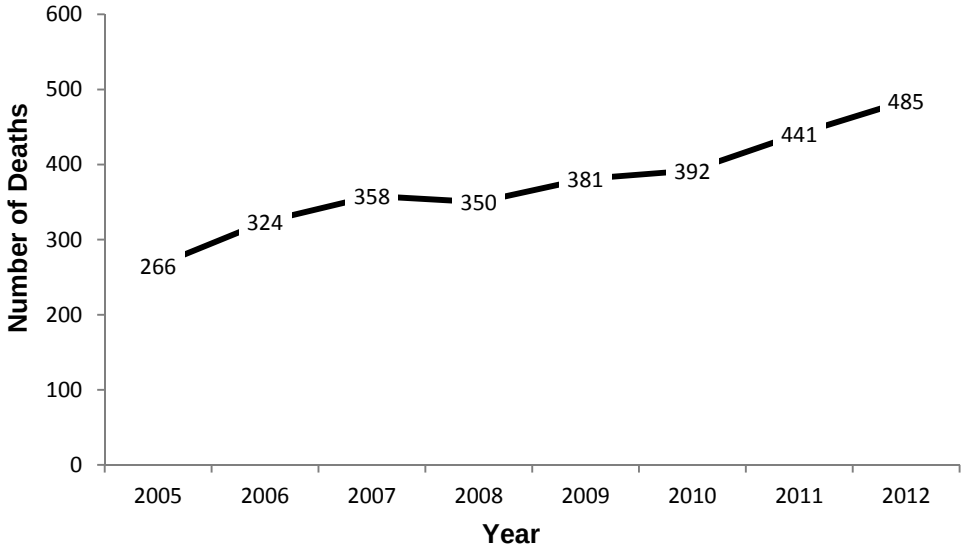
This analysis does not judge which policy option is best. Instead, the options are individually evaluated against criteria that include access, accountability, implementation cost, and ability to address gaps in treatment that could lead to relapse or treatment failure. None of the policy options provided are mutually exclusive; this flexibility allows for policy-maker discretion in determining the best approach for addressing opioid addiction treatment needs for Wisconsinites.

Introduction

Drug overdose is reaching epidemic proportions in the United States, having surpassed traffic accidents as the leading cause of injury death (Office of Food and Drug Administration Commissioner Margaret A. Hamburg 2014). A specific group of drugs known as opioids are one of the primary causes of overdose death. Opioids include the illicit drug heroin and pain relieving drugs like hydrocodone, oxycodone, morphine, methadone, and buprenorphine. States across the nation are looking for solutions to stem the surge of opioid abuse.

Statistical data from the State of Wisconsin Department of Health Services (DHS) indicates that the opioid abuse epidemic has hit home. Since 2005, the number of deaths attributable to opioid use in Wisconsin has nearly doubled (see Figure 1; more data are available in Appendix A: Data). Accordingly, Wisconsin needs to take action to address this issue, starting with improving access to clinically appropriate treatment services.

Figure 1. Wisconsin Opioid-Related Deaths, 2005-2012



Source: Wisconsin Death Records; Department of Health Services, Division of Public Health, Office of Health Informatics
Note: Opioid deaths include diagnosis codes indicating the underlying cause of death due to opioid use.

Increasing access to treatment begins with a comprehensive understanding of the characteristics and locations of appropriate treatment options. We have reviewed clinical recommendations, examined barriers to accessing treatment, and evaluated the supply of and demand for treatment in Wisconsin. Our sources include contemporary research, distinguished addiction treatment experts, and data from state and federal agencies.

Scope

Our report focuses on opioid addiction treatment as a voluntary choice, even though all aspects of opioid addiction treatment affect involuntarily treated individuals as well. For example, the

phases of the clinically recommended treatment process are the same for both classifications of opioid dependent.[1] Jails, prisons, hospitals, and mental health care centers all may need to treat individuals who are involuntarily experiencing opioid withdrawal, thereby beginning the treatment process. Many communities have expressed concern that they are ill-equipped to provide detoxification services and continuing care in appropriate and safe settings. Our goal is to provide communities with the clinical and availability information they need to develop and refine opioid addiction treatment practices.

Other populations in the state may have specific treatment needs that are not addressed in this report. For example, incarcerated dependents, groups with specific cultural needs, and youth may require unique treatment services. Many of our policy options will have positive overall effects for these groups, but more research is needed to address whether there are specific treatment needs for these groups and others.

Our research is also limited regarding the evaluation of costs of treatment for dependents. The number of treatment provider options and phases in the treatment process preclude a one-size fits all cost analysis. To determine cost barriers in greater detail, the scope of this analysis would have to be limited to one payment system and a standardized treatment plan. In reality, though, every treatment sequence is unique from the reason for treatment to the medications used to the duration of treatment.

Understanding and Treating Addiction

Providing treatment requires basic knowledge about addiction and the challenges dependents face. First, addiction is a disease with no cure. Second, a disease with no cure requires a lifelong commitment to recovery and the prevention of relapse. The recovery process for opioid addiction remains the same whether or not the problem opioid[2] is illicit (such as heroin) or legally prescribed for pain relief or other therapeutic purposes.

Opioid addiction recovery has multiple phases with the following goals and processes:

- Detoxify from the problem opioid, with our without the aid of a treatment opioid.[3]
- Begin recovery. This phase includes treatment opioid adjustment, replacing unhealthy behaviors with healthy behaviors (often through counseling or group therapy), repairing relationships, learning to recognize and avoid triggers, developing skills to prevent relapse, managing at-home usage of treatment opioids, and random drug testing.
- Stay in recovery. This phase requires maintaining a routine schedule, attending follow-up care with physicians and counselors, continuing to avoid triggers, and random drug testing.
- Live free of addiction. This phase involves a continued commitment to healthy behaviors and routines, regularly scheduled visits with the treatment provider, and participation in counseling (SAMHSA 2014a).

[1] For purposes of this paper, opioid dependent refers to any individual suffering from opioid addiction.
[2] A problem opioid is the specific drug or drugs to which the individual is addicted.
[3] Treatment opioids include methadone and buprenorphine.

The lifelong recovery process requires a comprehensive treatment model. Our research indicates that Medication-Assisted Therapy (MAT) is the preferred clinical model for successfully treating addiction. On March 26, 2015, the U.S. Department of Health and Human Services announced a Federal Opioid Initiative that includes three strategies to address opioid abuse and calls for the expansion of MAT as the preferred treatment modality. The recommendation to utilize MAT is based on rigorous research that has found MAT to provide the greatest likelihood of "clinically meaningful outcomes" for dependents (ASPE 2015).

The Substance Abuse and Mental Health Service Administration (SAMHSA) likewise views MAT as the most effective method for treating opioid dependence (2005). Treatment programs that do not utilize treatment drugs[4] are often associated with relapse (NDCP 2012). Relapse can be dangerous for the patient because opioid tolerance fades very quickly, and even one relapse can be life-threatening. MAT thus favors a "phased approach" that does not always emphasize complete detoxification (NDCP 2012).

Opioid Addiction Treatment in Wisconsin

MAT is a comprehensive opioid addiction treatment model that provides treatment opioids and counseling services. Treatment opioids and counseling services as part of MAT are generally administered by an opioid treatment program (OTP), which is any setting in which both treatment opioids and counseling services are offered.[5] Designation as an OTP requires state and federal certification. DHS lists 15 OTPs in Wisconsin as of 2014, shown in Figure 2.

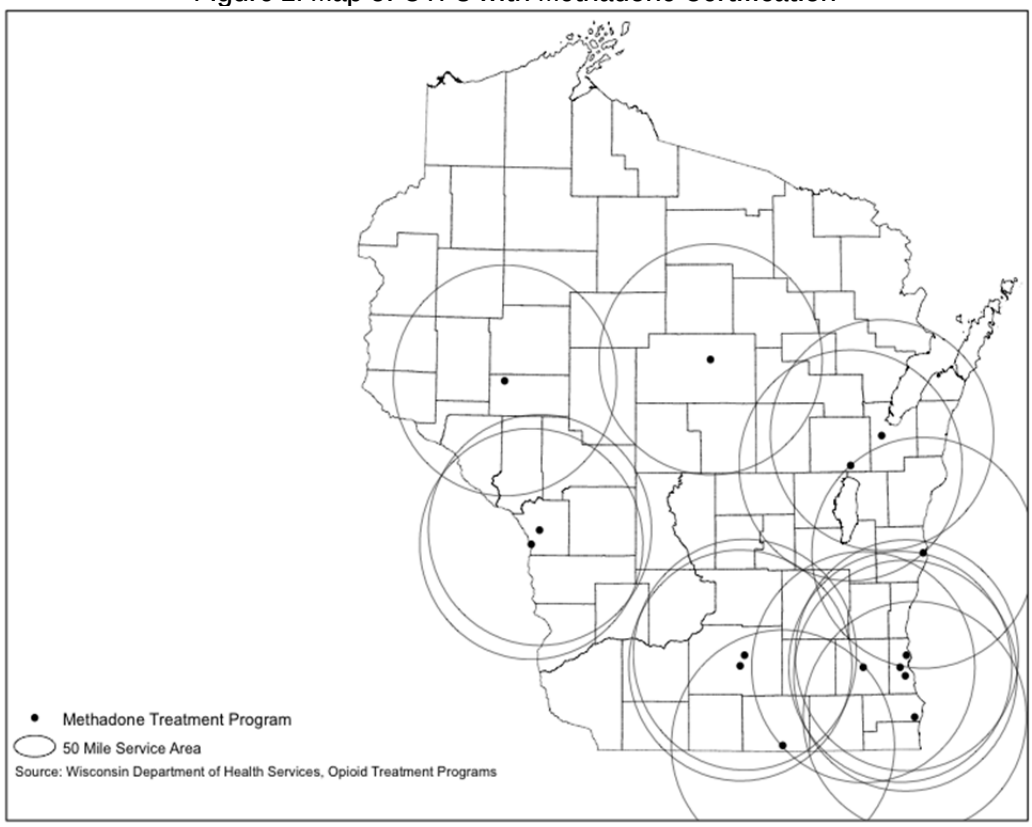
According to the Wisconsin Opioid Treatment Program Patient Reference Handbook (2014), all patients must meet a set of five criteria to be accepted into an OTP. The basis of these criteria is a combination of state and federal regulations. The criteria are as follows:

1. Be 18 years of age or older
2. Must meet the substance dependence criteria in the DSM-IV-TR[6]
3. Must be medically able to tolerate treatment
4. Must possess a State of Wisconsin issued photo ID to prove Wisconsin residency
5. Must reside within 50 miles of the treatment clinic

There are many treatment settings outside of certified OTPs. The treatment process and services offered might vary from what is offered at an OTP because treatment service providers include non-certified clinical settings, physicians licensed to dispense treatment opioids, and counseling centers. Some of these providers may offer MAT, but they also might only offer singular components of opioid addiction treatment, such as treatment opioids without counseling. Non-certified providers are an important part of the opioid addiction treatment landscape because they are often more accessible than OTPs.

[4] Treatment drugs include treatment opioids and also include non-opioids drugs such as naltrexone.
[5] OTPs are often more commonly known as methadone clinics, but can include other clinical settings. The defining feature of an OTP is program certification.
[6] The DSM-IV-TR is the manual used by U.S. mental health professionals for classification and treatment recommendations for mental disorders.

Figure 2. Map of OTPs with Methadone Certification

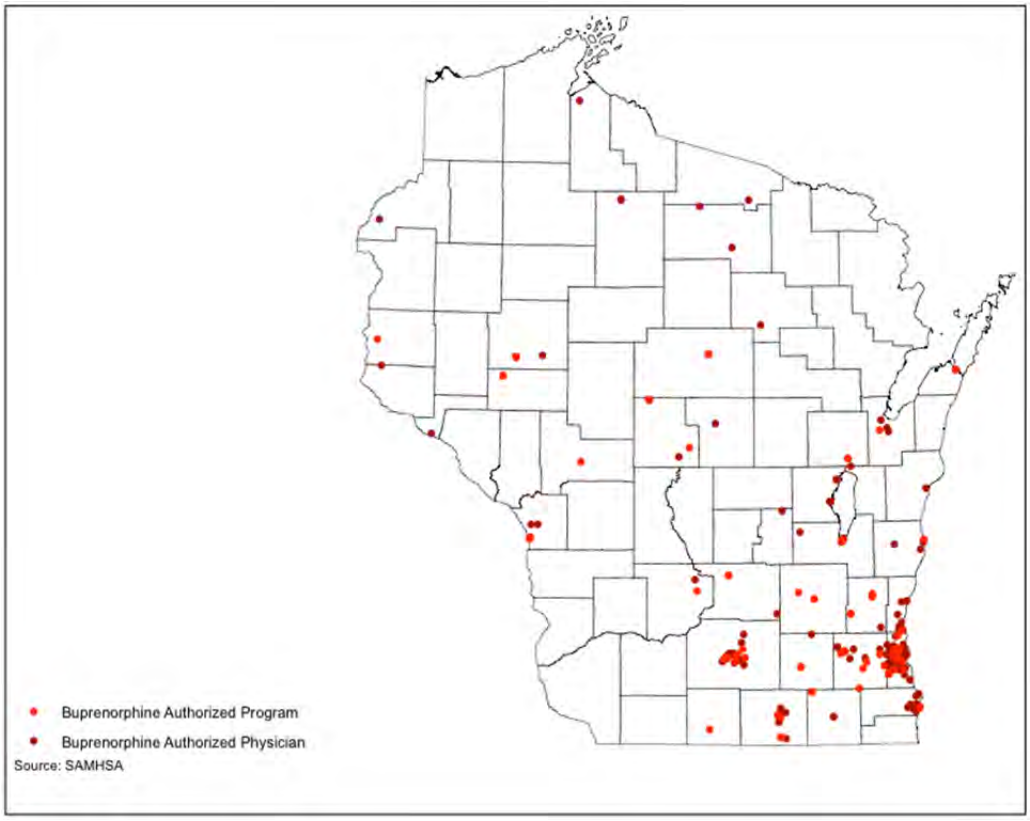


Treatment providers may be in private hospitals, substance abuse clinics, and county public health departments. Private hospitals provide a wide array of services, including inpatient detoxification and rehabilitation, residential services, hospitalization, intensive outpatient programming, and recovery groups. Hospitals also provide emergency room services to stabilize dependents. Substance abuse clinics are private or non-profit clinics that may be associated with hospitals, churches, or other non-profit organizations. They specialize in providing mental health and substance abuse services. County services may provide case management, day treatment services, detoxification, outpatient services, and residential treatment.

As of April 11, 2015, the SAMHSA Physician and Treatment Program Locator listed 60 non-certified treatment programs and 187 physicians licensed to dispense the opioid addiction treatment buprenorphine in Wisconsin, shown in Figure 3. These programs and physicians can dispense treatment opioids, and they make up the group of non-certified providers in Wisconsin who could offer MAT.

Six counties collaborate to provide regional services through the Mental Health and Substance Abuse Collaborative Pilot sponsored by DHS. In this pilot, a lead county partners with two nearby counties to provide approximately 30 mental health and substance abuse services (DHS 2015). These services are listed in Appendix B: County Pilot Benefits.

Figure 3. Map of Buprenorphine Authorized Programs and Physicians



Not all Wisconsin residents have equal access to opioid addiction treatment services. Geographic proximity to an OTP or provider, inadequate number of qualified treatment providers, limited support for ensuring transition between treatment phases, and the inability to integrate treatment with family and employment commitments all create access issues for individuals seeking opioid addiction treatment. Providers themselves can be limited by state and federal regulation, training requirements, structural support at the clinic and community level, and personal attitudes about opioid-addicted patients (Woods and Josephs 2012).

Problem Definition

In Wisconsin, there is an unmet need for opioid addiction treatment. As discussed, Wisconsinites face access barriers due to geography and lack of providers. Several gaps in the treatment process may allow dependents to relapse or abandon treatment. Finally, due to the rapid increase in opioid addiction, supply has not kept up with estimated demand.

Physical Access Barriers

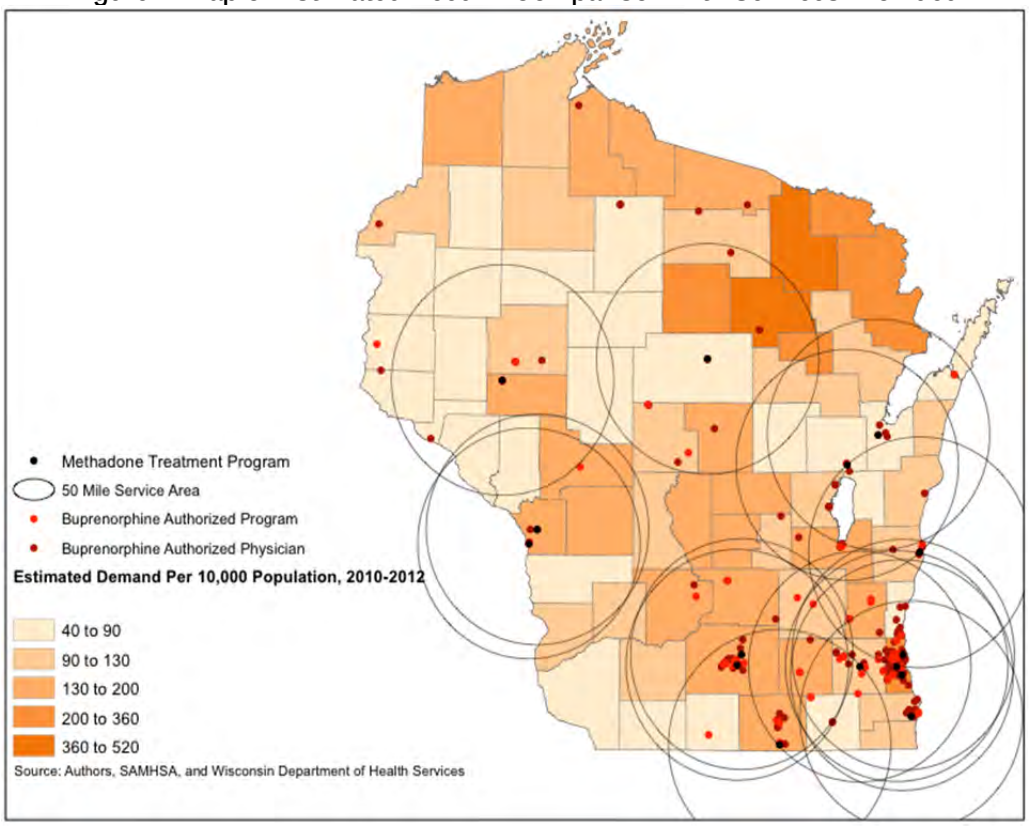
Physical access to treatment, or the ability to enter a treatment facility and obtain treatment, is essential to beginning the opioid addiction recovery process. As noted, Wisconsin has a variety of opioid addiction treatment services available, but not every geographic region is home to an OTP. Limited treatment availability in areas of the state is exacerbated by regulatory

requirements that limit distance between the patient and an OTP or provider as well as restrictions on take-home options for treatment opioids.

As seen in Figures 2 and 3 above, particular areas of the state lack an OTP or sufficient buprenorphine certified physicians. These areas include the northwest, near Bayfield and Ashland counties, the northeast, including Florence, Forest, and Marinette counties; the middle, including Juneau and Adams counties; and finally the southwest, around Grant County. These areas are again highlighted in Figure 4, which shows the estimated need in each county overlaid with the 15 OTPs and all physicians certified to prescribe buprenorphine. Based on this map, the northeast region of Florence, Forest, and Marinette counties represents a high estimated need area that lacks treatment providers. In other words, residents of this area are unable to access treatment simply due to where they live.

Physical access to an OTP or provider is hard to obtain for the dependent seeking treatment because they need 1) available, affordable, and reliable transportation; 2) flexibility in employment and family schedules that make travel possible; and 3) a strong will to frequently travel long distances to receive treatment.

Figure 4. Map of Estimated Need in Comparison with Services Provided



Treatment Gaps

Once a dependent is able to physically access treatment, he or she is vulnerable to relapse when there is a break in the treatment process. There are three specific points of vulnerability: initial access to treatment services, transfer between phases of the treatment process, and continuing recovery care. Initial access to treatment can be inhibited if an individual attempts to secure treatment at a facility or through a doctor, or the individual is waitlisted or turned away due to lack of space. Figures 5 and 6 show information culled from county programs, which represent only a small subset of treatment programs available to the patient. However, data from privately held facilities on this topic is unavailable.

Fifteen of 72 counties reported having waiting lists for county programs in 2012, and, of these 15 counties, six reported having turned people away. One county reported turning people away but did not report waitlist data. Counties turning people away from service or waitlisting individuals indicates a gap in treatment. We do not know the extent of the problem in private clinics or with buprenorphine doctors at this time.

Figure 5. Map of Number of People Waitlisted from County Programs, 2012

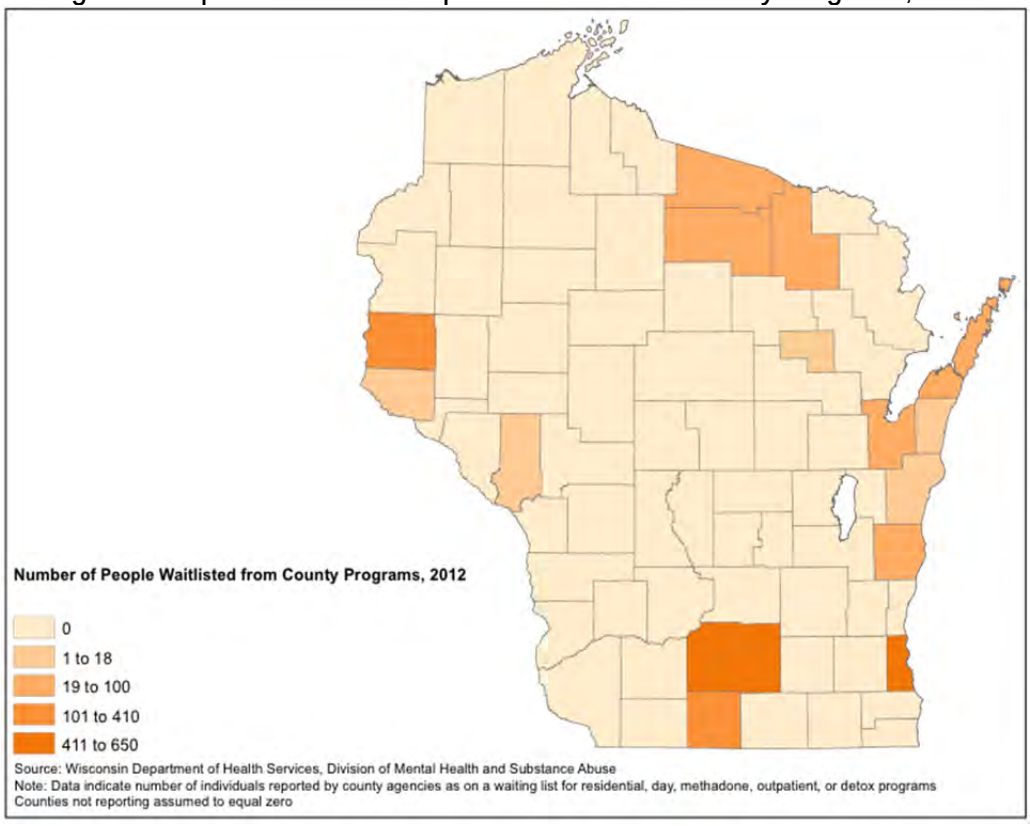
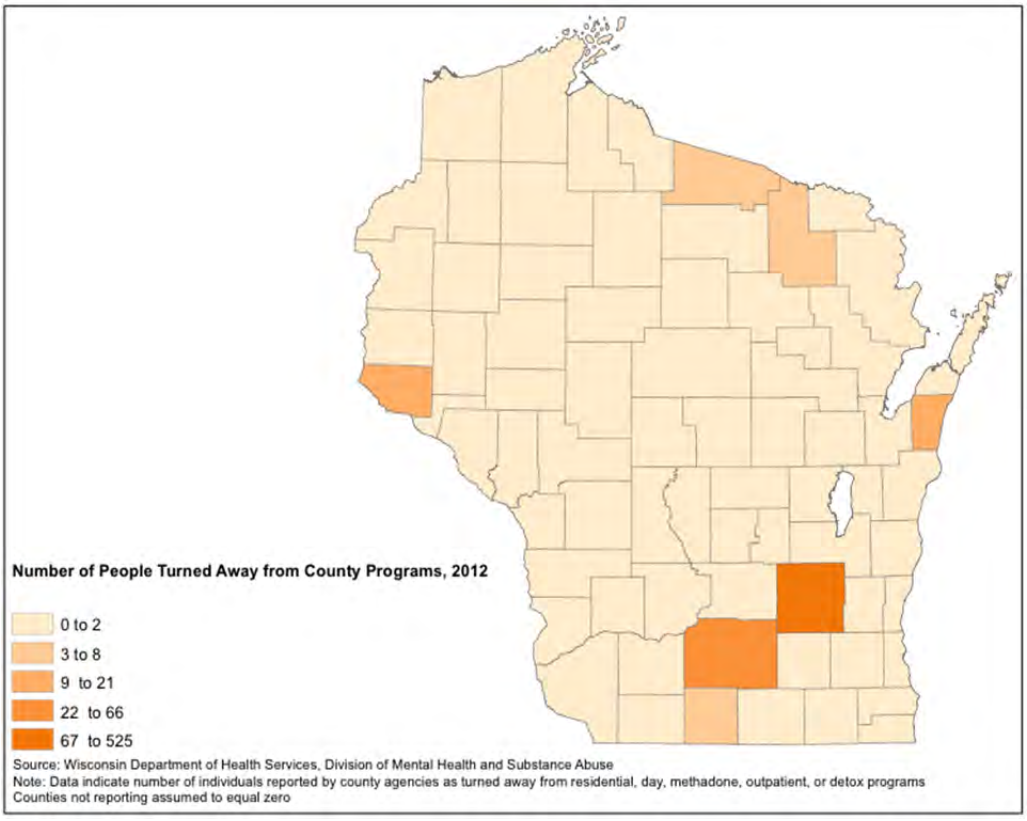


Figure 6. Map of Number of People Turned Away from County Programs, 2012



The transition between services, such as from pharmacological treatment to counseling, marks a second potential gap in addiction treatment. While no data on the magnitude of this gap exist, physicians have anecdotally remarked that patients interested in counseling are simply given a business card and that patients rarely follow up on the referral. The burden is on the patient to navigate the admission process for an OTP or to find and schedule individual appointments with a therapist who is unknown to them. This gap is of particular concern when therapy is administered outside of an OTP. Even if an individual receives treatment medication, their treatment may fail because the drug is not supplemented with the necessary counseling. Connecting patients receiving treatment drugs to appropriate counseling is essential to their long-term recovery.

Finally, the patient may have difficulty entering the long-term maintenance phase of treatment if a solid treatment plan is not in place and treatment resources are unavailable or inconvenient to obtain. Again, no specific data for Wisconsin exists on failure rates at this point in treatment, but as we will discuss, the retention rates of various treatment drugs differ. Methadone has been shown to have the highest retention rate, which could, in part, be due to the well-regulated treatment plans of patients in OTPs that dispense this drug. Buprenorphine, while also highly effective, has lower retention rates. This disparity could stem from the lack of connection between medication and counseling, which can result from receiving the drug outside of a comprehensive clinic setting.

If a patient encounters any of the three treatment gaps, the recovery process may be jeopardized. Access, guided transitions, and long-term follow-up care must be available to ensure a successful

recovery. OTPs and providers in Wisconsin must be administered in ways that address access barriers, minimize the possibility for relapse stemming from treatment gaps, and utilize the best practice model of MAT.

Estimating Demand for Treatment Programs

To establish the desire to access treatment of dependents within the state, we estimate the demand for treatment programs across Wisconsin. Unmet need for opioid treatment services can be viewed as a supply and demand model where patients demand services and OTPs and providers supply services. Opioid-related deaths and survey data from the DHS provide some insight into potential demand for treatment throughout the state. However, there is no reliable way to estimate motivation for treatment; instead, we estimate the total number of individuals who likely have an opioid addiction at this time. See the Appendix A: Data for supplemental data on arrests, hospitalizations, and emergency room visits, which are also indicators of demand.

In 2005, Wisconsin had 266 opioid-related deaths, meaning that about one in 20,000 Wisconsinites died from opioid-related causes. By 2012, the number of opioid-related deaths had steadily increased to 485, representing about one in 12,000 Wisconsinite deaths, as outlined in Table 1. Opioid-related deaths varied significantly by county, ranging from zero deaths to 146 deaths, as shown in Figure 7. Similarly, opioid-related hospitalizations, emergency room visits, Medicaid admissions, and county-reported admissions varied significantly across the state. Based on these data, Wisconsin's opioid problem is growing.

Table 1. Wisconsin Opioid-Related Deaths, 2005-2012

	2005	2006	2007	2008	2009	2010	2011	2012
Total Wisconsin Deaths	266	324	358	350	381	392	441	485
Mean County Deaths	3.69	4.50	4.97	4.86	5.29	5.44	6.13	6.74
Wisconsin per Capita Deaths	0.48	0.58	0.64	0.63	0.68	0.70	0.79	0.87
Mean County per Capita Deaths	0.32	0.39	0.41	0.38	0.49	0.45	0.47	0.57

Source: Wisconsin Death Records; Department of Health Services, Division of Public Health, Office of Health Informatics

Note: Opioid deaths include ICD-9 diagnosis codes indicating that the underlying cause of death was due to opiate use; total opiate deaths is derived by summing the number of opioid deaths in each Wisconsin county; mean values are derived from opioid death values for each Wisconsin county.

Further estimating client demand for treatment services is challenging given data limitations. Based on available data and surveys, need for treatment services can be established by estimating the number of dependents and applying observed proportions of those who seek treatment. A full description of the calculation methodology can be found in the Appendix A: Data. Figure 8 displays these calculations on a per-capita basis, showing both the regional disparity in estimated demand for treatment services and the overall demand for treatment programs.

Figure 7. Map of Opioid-Related Deaths per 10,000 Population, 2010-2012

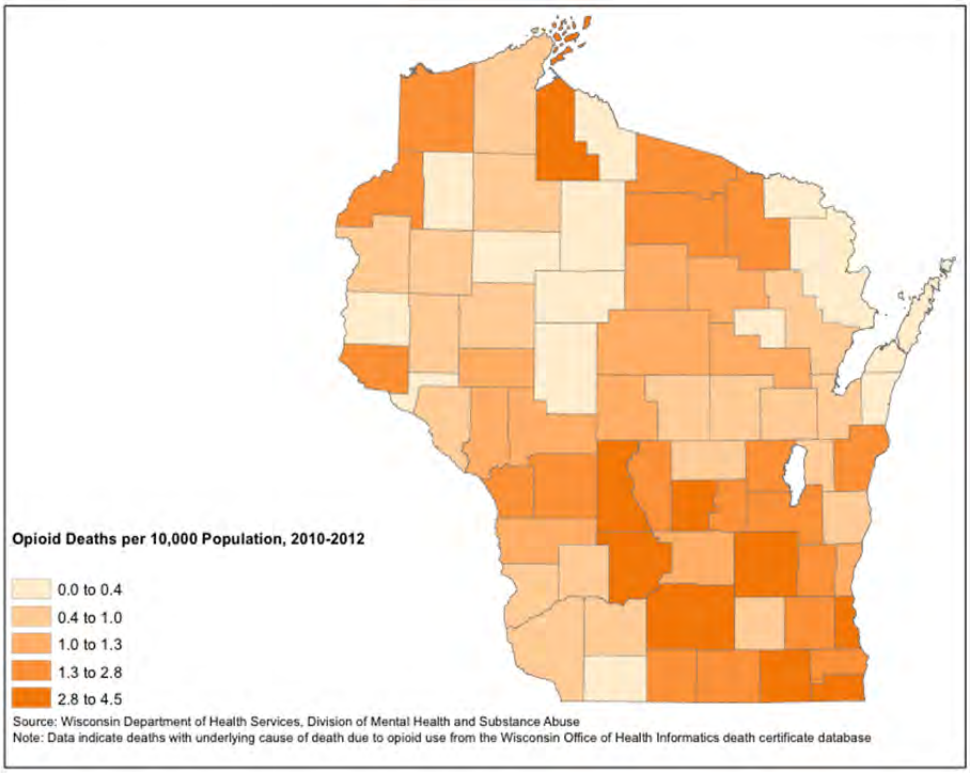
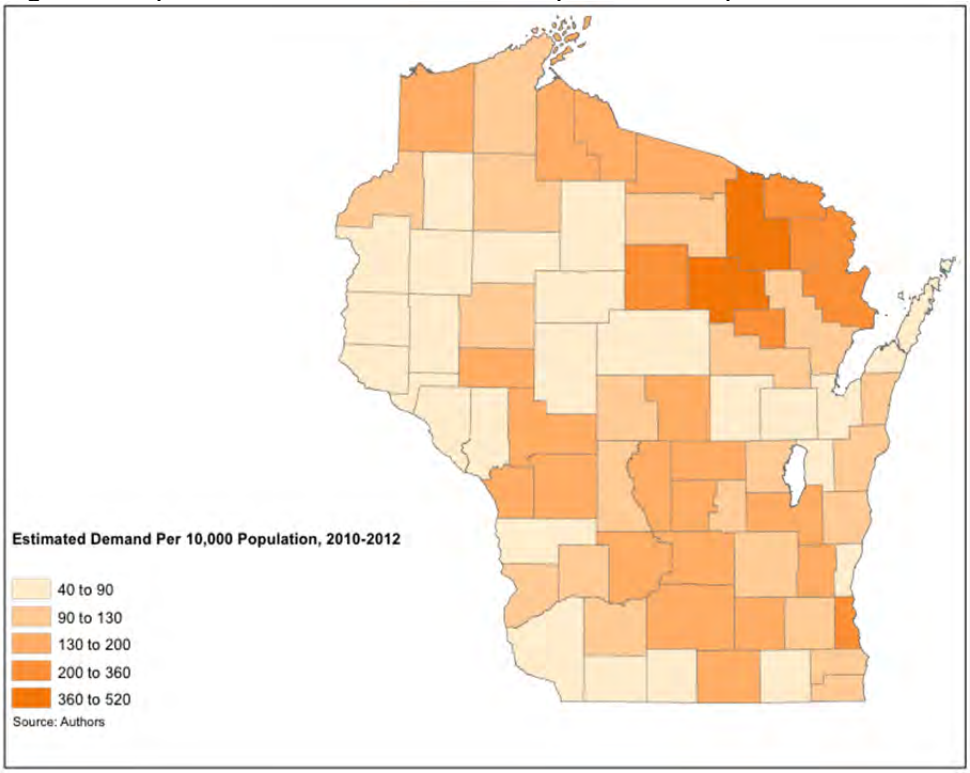


Figure 8. Map of Estimated Service Demand per 10,000 Population, 2010-2012



Alternatively, the National Survey on Drug Use and Health shows that 4.5 percent of Wisconsin adults have recently used opioids for non-medical purposes. Applying this survey result to Wisconsin's 2013 adult population yields an estimated demand as high as 200,000 or 350 per 10,000 population (DHS 2013b). Given the data limitations, these two survey-derived estimates of demand in Wisconsin may be the best possible way to estimate need in the state.

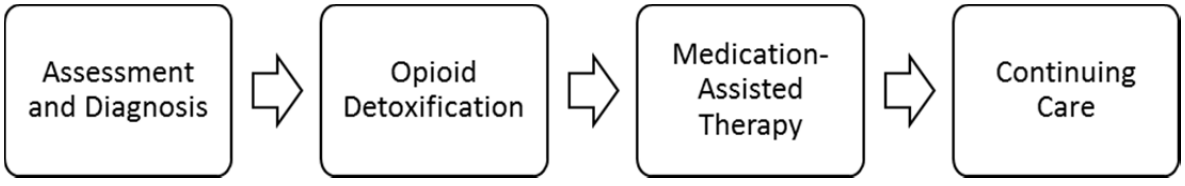
Estimating demand demonstrates the potential for a large unmet need, but the lack of data on providers hinders quantifying the supply of treatment services. The mere geographic locations of treatment providers do not indicate whether adequate capacity exists. Overall, locations of OTPs and other treatment providers offer some indication of geographic access across Wisconsin, just as the aforementioned waitlist and turned away data provide some insight into capacity. More information is available in Appendix A: Data.

The Treatment Process

Since the discovery of replacement opioids some 50 years ago, providers and researchers have been honing the treatment process for opioid addiction. While the phases of treatment outlined below are generally accepted, questions remain about best treatment practices. For example, we do not know precisely how long therapy should last. Likewise, we do not yet know when treatment can be safely discontinued, nor do we know the most effective way to handle individuals who exit treatment prematurely. Familiarity with the treatment process is necessary both to recognize the flaws inherent in the system and to understand potential solutions for addressing those shortcomings.

There are four phases in the treatment process for opioid addiction. Treatment begins with assessment and diagnosis, continues through opioid detoxification and MAT, and closes with continuing care management. Figure 9 illustrates the treatment process from the perspective of the individual seeking treatment.

Figure 9. Treatment Process Map



Source: Adapted from ASAM 2014

Assessment and Diagnosis

Treatment begins with a comprehensive assessment and diagnosis process. At a minimum, assessments should include the following components:

- Physical examination
- Mental status examination
- Medical, psychiatric, and social history
- Detailed substance use history, including withdrawal potential
- History of addictive behaviors, such as gambling
- Family medical, psychiatric, substance use, addictive behavior, and addiction treatment history
- Current medications and allergies
- Summary of the patient's readiness to engage in treatment and recovery environment
- Identification of facilitators of and barriers to treatment engagement

Once the assessment is complete, providers can make the diagnosis that will guide their patient's treatment process, which begins with opioid detoxification (ASAM 2014).

Opioid Detoxification

Detoxification, also referred to as withdrawal management, features several components. The process of opioid detoxification can occur in one of three settings: an inpatient or residential setting, an outpatient or community setting, or without any supervision. Treatment opioids and other treatment drugs are introduced to help with the side effects of withdrawal. Detoxification can be attempted without treatment opioids, but they are recommended to "suppress withdrawal symptoms and curb cravings" (Chalk et al. 2013).

Whether a patient undergoes detoxification in an inpatient or community setting affects the length, choice of treatment drugs, and treatment process. Clinical evidence indicates that detoxification in an inpatient setting can be completed in four weeks. When detoxification is attempted in a community setting, the recommended duration is 12 weeks (NCCMH 2008).

MAT

After detoxification, the MAT begins when the dependent has been stabilized. MAT combines treatment drugs, counseling, and behavioral therapies that provide a whole-patient approach to treatment (Mann et al. 2014). Rather than favoring complete opioid detoxification, MAT treats addiction with clinically prescribed, Food and Drug Administration approved opioids.

Medications for Detoxification and MAT

The primary goal of these medications is to prevent the effects of withdrawal, such as anxiety, restlessness, nausea, and vomiting (Health Canada 2002). The three most commonly prescribed treatments for opioid addiction are methadone, buprenorphine, and naltrexone (SAMHSA 2005). Methadone and buprenorphine are treatment opioids that activate opioid receptors in the brain, tricking the body into believing it has opioids in its system. Naltrexone is a treatment drug that prevent opioids from binding to their receptors in the brain. As a result, the dependent is not able to feel any pleasurable effects from opioids (NAABT 2015).

Methadone

Methadone is a treatment opioid that blocks the euphoric effect of opioids while preventing or reversing symptoms associated with opioid withdrawal. Because methadone is an opioid, patients may develop a dependence upon it (CDC 2002). Overall, methadone has been found to discourage illicit drug use and enables dependents to engage in other aspects of the recovery process (Mattick et al. 2009).

Methadone needs to be taken once daily, as a tablet or liquid (AHFS 2014). Tolerance to the effects of methadone develops very slowly, allowing patients to be tapered off of the drug over the course of many years (Health Canada 2002). Studies have shown that 12 months is the ideal minimum length for methadone treatment (CDC 2002).

Moreover, studies have consistently demonstrated that methadone maintenance therapy is more effective for treating opioid addiction than non-medicated approaches. In particular, methadone treatment has been shown to improve treatment retention rates and to reduce use of problem opioids. Methadone is only available through tightly regulated OTPs (NIH 2014).

Buprenorphine

Like methadone, buprenorphine[7] is treatment opioid that relieves drug cravings without producing the euphoric effect or dangerous side effects of other opioids. Thus, dependents who are treated with buprenorphine also present a risk for developing dependency (NIH 2014). Buprenorphine-containing medications[8] are taken daily or semi-daily and are orally ingested or absorbed under the tongue (AHFS 2012).

Physicians must undergo eight hours of training to prescribe buprenorphine. Physicians who prescribe methadone are not required to attend training, but methadone is dispensed only at certified OTPs. Buprenorphine prescribing physicians are federally restricted in the number of patients they may treat. They may only treat 30 patients at a time, unless they apply to SAMHSA after their first year to increase their limit to 100 patients (NAABT 2015).

Research shows that flexible dose buprenorphine was less effective than methadone in retaining participants. Methadone is more effective at retaining patients than buprenorphine at low fixed doses, but no difference between methadone and buprenorphine has been found at medium and high fixed doses regarding retention or suppression of opioid use (Mattick et al. 2014).

Naltrexone

In contrast to methadone and buprenorphine, naltrexone[9] acts as an opioid antagonist and blocks the euphoric effect of opioids. It also does not present a risk for dependency. These features make naltrexone a good candidate for preventing relapse. However, patients often have difficulty complying with naltrexone treatment compared to its opioid-based peers, which leads to limited effectiveness (NIH 2014). Naltrexone is available in a daily oral dose or as a monthly injection.

[7] Buprenorphine is also known as Suboxone or Subutex.
[8] Buprenorphine comes in two formulations: only buprenorphine and a combination of buprenorphine and naloxone; naloxone blocks the effects of opioids and causes intense withdrawal symptoms if abused intravenously.
[9] Naltrexone in its injectable form is known as Vivitrol.

Unlike methadone and buprenorphine, naltrexone is not restricted by regulations or training requirements. While naltrexone is accessible, there exists minimal research on its efficacy or inefficacy for treating opioid addiction. Studies have not shown that oral naltrexone is effective in treating opioid addiction (Minozzi et al. 2011), but studies of injectable naltrexone show more promising results. Comer et al. (2006) and Krupitsky et al. (2011) demonstrated that injectable naltrexone is a tolerable treatment for opioid addiction. Comer et al. (2006) also found that treatment retention increased with higher doses of naltrexone.

Overall, methadone and buprenorphine are highly effective, but they present a risk of dependency. Methadone has a higher rate of overdose than buprenorphine, but fewer dependents maintain treatment on buprenorphine. Both treatment opioids are more effective than naltrexone, but naltrexone is the most widely available treatment. Table 2 provides an overview of the differences between the medications.

Table 2. Overview of Medications Used to Treat Patients with Opioid Dependence

Prescribing Considerations	Methadone	Buprenorphine	Naltrexone
Frequency of Administration	Daily	Daily	Monthly
Route of Administration	Oral (liquid) consumption usually witnessed by an OTP, until the patient receives take-home doses.	Oral tablet or film is dissolved under the tongue. Can be taken at a physician's office or at home.	Intramuscular injection in the gluteal muscle by a health care professional.
Restrictions on Prescribing or Dispensing	Only licensed physicians who are registered with the U.S. Drug Enforcement Administration and who work at an OTP can order methadone for dispensing at the program.	Only licensed physicians who are DEA registered and work at an OTP or have obtained a waiver may prescribe buprenorphine.	Any individual who is licensed to prescribe medicine may prescribe and order administration by qualified staff.
Abuse and Diversion Potential	Yes	Yes	No
Additional Requirements	Methadone can only be purchased by and dispensed at certified OTPs or hospitals.	Physicians must complete special training to qualify for the DEA prescribing waiver. Any pharmacist can fill the prescription.	None; any pharmacy can fill the prescription.

Source: SAMHSA 2012

Counseling and Behavioral Therapy

Treatment drugs are only one part of the MAT model. Counseling and behavioral therapies are equally important parts of this phase of treatment. Research has shown that treatment is most effective when treatment drugs are paired with counseling and behavioral therapies. Individual therapy, group counseling, and family behavior therapy each provide different types of support to individuals recovering from addiction:

- Individual therapy can help dependents learn new skills to maintain a substance-free life, address co-occurring mental health issues, address the benefits of treatment drugs, and support the pursuit of meaningful work, school, and family goals.

- Group counseling can help reduce a dependent's sense of isolation, provide peer support and feedback, and develop social and problem-solving skills.
- Family behavior therapy provides education and allows family members to participate in the process of rebuilding relationships and supporting the dependent's commitment to recovery.
- Cognitive-behavioral therapy seeks to help patients recognize and avoid situations in which they may encounter triggers for drug abuse.
- Motivational enhancement capitalizes on the readiness of dependents to change their behavior and enter treatment.
- Motivational incentives use positive reinforcement to encourage abstinence from drugs (Mann et al. 2014).

Despite being a recommended portion of the recovery process, many dependents never receive behavioral therapy. While a physician may make a referral to a therapist, there rarely is any follow-up between the referrer and the referred to ensure participation. This disconnect increases the chances of relapse and limits the effectiveness of treatment. In our discussion of policy options, we explore the implementation of health homes as a solution to this treatment gap.

Tapering

Some dependents or their providers choose to end treatment early for a variety of reasons, including unmanageable adverse effects, illegal behaviors, non-adherence to treatment plans, and unmet treatment goals. Whenever possible, patients should be tapered off of their treatment drugs rather than quitting abruptly. Tapering is more important for medications than for counseling due to the potentially severe withdrawal effects experienced when ceasing treatment. In general, patients are tapered by 20-50 percent per week, but the longer a patient has been on treatment opioids, the slower their taper should be (US-DVA 2013).

Patients who are suitable for tapering generally are abstinent from the use of opioids and other drugs while committing themselves to recovery principles. Moreover, they should enjoy a stable home and family life and receive a reliable income. Suitable patients should also demonstrate a lengthy history of complying with maintenance treatment and are prepared to return to the maintenance treatment in the event of a relapse (DHS 2014).

Continuing Care

MAT may last for years, if not an entire lifetime. Providers must coordinate quality care and confidentiality across years and even decades. When treatment comes to an end, patients must be carefully tapered off of treatment. Additionally, the treatment provider is responsible for supplying referrals to continuing care and/or self-management services in the community (ASAM 2014).

Clear communication is especially important during transitions between levels of care. Providers must ensure that transitions are informed by a biopsychosocial evaluation, patient preferences, and the patient's treatment history. Whenever possible, providers must communicate their patients' health status, current treatment plan, treatment adherence, and treatment progress to the new providers. Providers should take an active role during transitions to make sure that their

patients are comfortable and that proper authorizations for release of information have been obtained (ASAM 2014).

OTP Regulation

Access to opioid addiction treatment drugs, particularly methadone, is limited by federal and state regulations. All opioids are Schedule II controlled substances under federal law and are thus subject to numerous restrictions (21 CFR 1308.12(b)). Wisconsin also has regulations for treatment programs that surpass the federal requirements.

This section details the various regulations by which treatment programs must abide to continue providing services to dependents. In many cases, Wisconsin has more stringent regulations than the federal government requires. These extra restrictions make accessing treatment more difficult for dependents. In our policy options section, we discuss how changes to state regulations could improve access to treatment services.

OTP Clinic Certification

OTPs are certified and registered under Title 42 of the Code of Federal Regulations and Chapter DHS 75 of the Wisconsin Administrative Code. Federal certification of OTPs lasts for three years, and clinics must reapply by explaining the organizational structure of the program, listing the names of those responsible for the program, providing the location of the facilities used in the program, and agreeing to comply with other federal regulations (42 CFR 8.11(b)). Programs must also have a quality control plan to assess the progress of patients under their care (42 CFR 8.12(c)) and a division control plan to prevent methadone from reaching the street market (42 CFR 8.12(d)).

Clinics operating in Wisconsin must meet the federal standards for OTPs (42 CFR 8.11(a)(2)). Under federal law, treatment programs are required to provide “medical, counseling, vocational, educations, and other assessment and treatment services” at the facility or through a formally contracted organization. Additionally, programs must require a full physical evaluation upon admittance to the program, provide prenatal care or a referral to appropriate providers, and assess patients throughout their treatment (42 CFR 8.12(f)). Each patient must also be submitted to at least eight random drug tests (42 CFR 8.12(f)(6)). Finally, programs are required to maintain records and to keep those records confidential. Further, these records should seek to determine if the patient is enrolled in any other programs (42 CFR 8.12(g)).

The State of Wisconsin has additional requirements for OTP certification. Programs must submit copies of their federal application, a description of treatment services provided, documentation of the need for such programs, criteria for admittance, a policy and procedures manual, documentation of adequate physical facilities to provide services, and documentation that the service has access to a range of medical services (Wis. Admin. Code DHS 75.15(20)). Treatment programs are required to participate in a registry of patients designed to prevent enrollment in multiple services (Wis. Admin. Code DHS 75.15 (5)(i)). Certification by the State is active for up to two years (Wis. Admin. Code DHS 75.03(2)(d)). Services must include an initial

assessment of alcohol and drug history, current mental and physical health, and information regarding family, relationships, and financial status. (Wis. Admin. Code DHS 75.03(10)(c)).

Requirements for Staffing the OTP

Federal law mandates staffing requirements for certified clinics. OTPs are required at minimum to designate a program sponsor who is responsible for federal code compliance and a medical director who is responsible for all medical services (42 CFR 8.12(b)). Wisconsin Administrative Code Chapter DHS 75.15 adds that narcotic treatment services require a physician who can respond in person within 45 minutes (4)(a), a registered nurse to supervise the dosing process (4)(b), and substance abuse counselors. These counselors must be employed at a rate of at least one counselor for every 50 patients (Wis. Admin. Code DHS 75.15(4)(d)). All staff providing substance abuse counseling must be certified by the State in accordance with Wisconsin Administrative Code SPS 160-169 (Wis. Admin. Code DHS 75.03(4)(d)).

Restrictions on Treatment Drugs

Treatment drugs must be taken in a clinical setting with a medical professional present. The drugs are administered daily, which requires the dependent to appear in person at the clinic each day. Under federal law, the medical director is given eight criteria to consider when determining eligibility for take-home use, including absence of recent drug or alcohol abuse, regular clinic attendance, lack of serious behavioral problems and recent criminal activity, stability in home life and relationship, length of time in treatment, and likelihood of safe storage of the drugs in the home. Additionally, the medical director must weigh the benefit of take-home usage with the costs of potential diversion of the drugs. Once the director determines that the patient meets the criteria for take-home usage, the patient may take home doses according to the federal schedule, which allows for two doses after 90 days, three doses after 180 days, six doses after 270 days, 14 doses after one year, and 30 doses after two years of treatment.

State law requires that the service physician make and document the decision on whether or not to allow take-home privileges for patients. The determination for eligibility is based on the same requirements as federal law. However, state law requires that medication be stored in a locked metal box, while federal law only requires that it be safely stored. State and federal law differ greatly on their time-in-treatment requirements and maximum allowable dosage. The schedule for time-in-treatment criteria as required by the Wisconsin Administrative Code allows for two doses after 90 days, three doses after two years, and six doses after three years. To receive six doses, the patient must meet additional requirements, including being employed, attending school, being a homemaker, or being disabled and not being known to have used substances, including alcohol, or engaged in criminal activity in the previous year (Wis. Admin Code DHS 75.15(11)(g)). OTPs may also apply for an exception to exceed the specified amounts. The exception must be approved by both a federal agency and the state methadone authority (Wis. Admin. Code DHS 75.15(11)(e).

Criteria for Admission to an OTP

State and federal law require certain criteria for patients to be admitted to the OTP. At the federal level, an OTP must evaluate the patient to establish whether he or she is addicted to an opioid drug and that this addiction has persisted for more than one year (42 CFR 8.12(e)(1)). The one-

year requirement may be waived for patients released from correctional settings, a verified pregnant woman, or previously treated patients up to two years after their discharge from the program (42 CFR 8.12(e)(3)). Additionally, a physical must verify that the individual is voluntarily entering the program and obtain informed consent to treat upon explaining all relevant facts (42 CFR 8.12(e)(1)). If an individual unsuccessfully detoxes twice within a year, the physician must discuss other treatment options (42 CFR 8.12(e)(4)).

Many state requirements are similar to or identical to federal law. A physician must verify that the individual has been physiologically and psychologically dependent on an opioid for a period of one year or more. If the dependent's history and records cannot substantiate the addiction, an assessment that indicates that the dependent has a high probability of diagnosis may serve as a substitute (Wis. Admin. Code 75.15(5)(a)). Staff must verify that admission is voluntary and obtain informed consent (Wis. Admin. Code 75.15(5)). Upon determination of dependent eligibility, OTP staff conduct a comprehensive physical and psychological exam (Wis. Admin. Code 75.15(5)(e)).

Once admitted, the dependent's identity and age must be verified using photo identification, and a full patient profile must be developed. The OTP staff must gather as much drug history as possible and document the dependent's reason for seeking treatment. The dependent must submit to an initial urine analysis and if it is negative for narcotics, an adequate explanation of the negative result must be provided (Wis. Admin. Code 75.15(5)(j)).

Further Restrictions on OTPs

Wisconsin prohibits treatment lasting longer than two years unless an extension is obtained (Wis. Admin. Code DHS 75.15(9)(e)). OTPs cannot provide any medical services beyond opioid addiction treatment (Wis. Admin Code DHS 75.15(9)(a)). Wisconsin also requires that a patient live within a 50-mile radius of the facility, as shown in Figure 2. The patient may apply for an exemption from this requirement but may not attend a more distant program solely to strengthen the case for needing take-home doses (Wis. Admin Code DHS 75.15(5)(g)).

Comparison of Wisconsin vs. Federal Regulation

State regulation governing OTPs inserts federal law into state law and expands on those requirements. In regards to OTP certification, the State requires documentation for the need of such a clinic and specific documentation of many of the regulatory requirements. This documentation includes admittance protocol, access to other medical services, and a description of the treatment services in addition to a copy of the federal application for certification. The State's certification is active for two years, while the federal certification is active for three years. The State requires more documented staff, such as a registered nurse and counselors employed at a rate of 50 patients to one counselor, while federal law only requires a sponsor and medical director. Under federal regulations, OTPs must provide counseling but may contract out with another organization to provide this service.

Admission criteria are very similar at both levels. However, the State requires a full patient profile, which may limit access if sufficient proof of identity cannot be established. The State has a more restrictive take-home dosage schedule, which may impair access for dependents who have difficulty attending the clinic daily. Moreover, Wisconsin has at least three instances of

additional regulations unrelated to federal law. These include a prohibition on treatment for longer than two years unless an exemption is granted, a requirement that the patient live within 50 miles of the facility unless an exemption is granted, and a prohibition on the clinic to provide other medical services.

Goals for Policy Options

To provide effective treatment to patients, policy regarding opioid addiction treatment services should address access issues, be cost neutral, institute accountability measures, and address at least one of the identified treatment gaps.

Access

To ensure opportunity for all dependents to receive treatment, policy options should seek to increase geographic access. As with other Wisconsin policy issues, the urban-rural divide creates access issues based on an individual's place of residence. Policy options should seek to minimize discrepancies in availability of services throughout the state.

Cost Neutrality

While the State recognizes the importance of treating dependents, it faces many competing demands for funds. Keeping the budgetary concerns in mind, we have attempted to provide policy options that are cost neutral. We have included policy options that are not cost neutral, but we are keenly aware that keeping costs to a minimum is preferred.

Accountability

Opioid addiction treatment services should include accountability measures to encourage future evaluation at the state level, assess program effectiveness, and ensure best practices. Likewise, treatment providers should be subject to future evaluation at the state level and be accountable to their patients by providing comprehensive courses of treatment.

Ability to Address Treatment Gaps

Assessment of the current status of opioid addiction treatment services in Wisconsin revealed potential gaps in the treatment process. The State can reasonably ameliorate three of these gaps: initial access to treatment services, transfer and care coordination, and continuing recovery care.

Policy Options

We examine five policy options for improving access opioid addiction treatment. These options range from expanding collaboration between counties and developing new health homes to modifying treatment regulations, training additional buprenorphine physicians, and increasing

data collection efforts. Table 3 compares the policy options to the aforementioned evaluative criteria.

Table 3. Summary of Policy Options

Goal	Expanding County Collaboration	Health Homes	Regulation Modification	Additional Buprenorphine Physicians	Increasing Data Collection
Access	Increases	Increases	Increases	Increases	No impact
Cost	Upfront cost but long-run savings	Large ongoing cost	No direct cost to the State	No direct cost to the State	Minimal upfront cost
Accountability	No impact	Increases	Decreases	No impact	Increases
Which gap(s) does this program address?	Initial access; Transition between phases; Continued recovery	Initial access; Transition between phases; Continued recovery	Initial access; Transition between phases; Continued recovery	Initial access	Future impact on initial access

Expanding County Collaboration

The State of Wisconsin Department of Health Services funds two Mental Health and Substance Abuse Collaborative Pilots in La Crosse and Chippewa counties. La Crosse collaborates with Jackson and Monroe counties, and Chippewa collaborates with Pepin and Buffalo counties. The pilots facilitate a shared services approach to the provision of mental health and substance abuse services to public sector recipients. Successful pilot applicants are required to integrate services with at least two nearby counties and/or tribal nations.

Applicants must assure access to a defined set of core mental health and substance abuse services. The full set of core benefits may be developed over the course of the three-year grant period, but by the end of the third grant year, all of the core benefits must be available to eligible populations in the entire joint service area. Service can be provided directly and/or through contracts with affiliated providers. Core benefits include prevention, emergency detention and intake, recovery planning, residential treatment, and substance abuse detoxification (DHS 2012a). A complete list of the core benefits can be found in Appendix B: County Pilot Benefits.

Successful county applicants are given $200,000 annually to work with DHS for three years to develop, implement, and evaluate a shared services model. The joint program should develop a shared services system that is financially sustainable at the end of the projected three-year grant period. Revenue and resource sharing among partners is expected to expand service type, capacity, and availability (DHS 2012a).

This policy option suggests expanding the Mental Health and Substance Abuse Collaborative Pilot Program statewide or within high need areas. With six counties participating, the 66 remaining counties could benefit from the expansion. If the program were expanded to all remaining counties over a six-year period, approximately four additional programs would need

to be created each year. As programs last for three years and cost $200,000 each per year, expanding this policy statewide would cost $13.2 million over approximately nine years. After nine years, the program would have no additional costs. Alternatively, the program could be expanded only in high-need areas.

In summary, expanded county collaboration would:

- Increase access to treatment programs for dependents
- Include an upfront cost but result in long-term savings
- Increase the accountability of treatment programs and providers
- Address initial access to treatment services, transfer and care coordination, and continuing recovery care

Health Homes Coordinated Care Model

Treatment for opioid dependence is most effective when patients receive pharmacological treatment and counseling/therapy. Dependents may not reach all treatment phases if care coordination is absent. Transfer of the dependent and coordination of care can be accomplished through increased physician and counselor interaction. One solution to this problem is the creation of health homes that are dedicated specifically to the coordination of comprehensive treatment of opioid dependence. A health home is a care management service provider that coordinates all aspects of an individual's treatment.

The health home models in other states provide services only for Medicaid beneficiaries and integrate physical and behavioral health care for dependents. Through coordinating care, health homes "improve health care quality and reduce costs" (CMS 2014). While states have flexibility in how they design their health homes, they must provide six core services: comprehensive care management, care coordination, health promotion, comprehensive transitional care and follow-up, individual and family support, and referral to community and social support services. To qualify for the services, a dependent must be a Medicaid beneficiary and be diagnosed with 1) two chronic conditions; 2) one chronic condition and risk for a second; or 3) a serious mental illness. States may propose other conditions to the Centers for Medicare and Medicaid Services. States implementing health homes receive a 90 percent federal match for the first eight quarters of operation, after which the federal government matches at the usual rate (CMS 2014).

Rhode Island, Maryland, and Vermont have adopted plan amendments to implement health homes specifically to provide substance abuse treatment. These states have implemented their programs statewide, utilized OTPs as the designated providers for the health homes, and clearly defined their target populations as substance dependents. Each of the systems provides pharmacological treatment in addition to counseling, per the federal health home guidelines outlined above. The states have flexibility to design their health homes to meet the needs of specific populations. For example, the three states structure and define their health home providers, assign eligible Medicaid beneficiaries, and offer payment models in different manner (Moses and Klebonis 2015).

Interviews with representatives from states that are implementing these health homes resulted in a number of recommendations. First, states should leverage existing OTPs to encompass key health home components. OTPs already have a "captive audience," thus engaging those in need

of the health home becomes less challenging. Since OTPs already meet daily with patients, implementing comprehensive care is much easier. Second, states should invest in multi-agency collaboration to develop the health homes. States reported that cooperation between agencies was paramount to the success of the health homes. For example, the successful implementation of Vermont's program required internal collaboration among the Department of Health's Division of Alcohol and Drug Abuse Programs, the Department of Vermont Health Access, and Vermont's Blueprint for Health. Each state also provided opioid addiction treatment education and training to the new health homes (Moses and Klebonis 2015).

The implementation of health homes would increase access to opioid addiction treatment for Medicaid beneficiaries. The health homes could require additional personnel, increased collaboration among state agencies, and continuing education for staff, likely making the implementation of health homes an expensive venture. Health homes would increase accountability by coordinating all aspects of MAT in one location. If there were to be a failure during any phase of the treatment process, the health home would be responsible.

In summary, the creation of health homes would:

- Increase access to treatment, especially behavioral therapies
- Increase cost
- Increase accountability through treatment service coordination
- Address initial access to treatment services, transfer and care coordination, and continuing recovery care

Modification of Wisconsin Regulations

The State of Wisconsin is more restrictive in its regulation of OTPs than federal regulations require. This policy option identifies Wisconsin regulations to be considered for elimination or modification. The identified modifications can be one complete package or addressed individually at the discretion of the policy maker. A comparison to the policies of Minnesota and Illinois demonstrates the status quo outside of Wisconsin.

OTP Clinic Certification

OTPs must reapply for federal certification every three years, while Wisconsin requires recertification every two years per Wis. Admin. Code 75.03(2)(d). The State requires additional information from the federal application along with a copy of the federal application. The State could modify regulations to align with the three-year federal recertification. Making this change would reduce the administrative burden on the clinic and the State.

This change likely will not have a direct effect from the patient's perspective, but the benefits to the clinic and state are significant. In a 10-year period, OTPs would need to register only three times instead of the five times required under current state law. As the information the State requests above and beyond the federal application is unlikely to change substantially in two years, a three-year recertification would be sufficient.

Our neighboring states have less strict state certification laws. Minnesota requires recertification only in the event of a change in the Department of Health's licensure program, in services

provided, in location, or a change in capacity for residential programs (Minnesota Statues 9530.6415.3A). Illinois licenses OTPs for three years as well, which would be in line with its federal recertification (Illinois Administrative Code Title 77 Chapter X Part 2060.215).

To align state recertification with federal recertification, a clause needs to be inserted into Wis. Admin. Code 75.15 to supersede the two-year recertification period placed on all OTPs is Wis. Admin. Code 75.03(2)(d). The provision would have to be phased in by requiring all OTPs to submit notice of when their next federal recertification is due and then submit their state recertification at the same time. Alternatively, the State could require OTPs to submit a state recertification upon passage of the modification and then submit recertification in accordance with their federal recertification thereafter.

OTP Staffing Requirements

Federal law allows for contracting of counseling services, yet state regulation requires counselors to be employed at the clinic per Wis. Admin. Code 75.15(4)(d). By contracting counseling services, OTPs could make use of recovery coaches or other lower cost therapists and potentially reduce costs. If the individual were able to receive counseling services within her/his community, geographic access would be increased for dependents with conflicting lifestyle needs. Capacity for counseling services could also be increased by contracting these services.

Minnesota requires that OTPs offer at least 50 minutes of counseling per week for the first 10 weeks and 50 minutes per month thereafter (Minnesota States 245A.192.10). However, Minnesota does not require counselors to be part of the essential personnel. Illinois has an explicit method for approving off-site counseling services. OTPs may contract out counseling services, but they must first provide documentation to the State and gain approval (Illinois Administrative Code Title 77 Chapter Xd Part 2060.203).

To allow for contracting, a clause would be added to Wis. Admin. Code 75.15, which allows the required counseling personnel, except for the physician, to be provided by an agency with which the clinic has an explicit written agreement. Any such agreement would also be required to be submitted during the certification and recertification application process, as defined by Wis. Admin. Code 75.15(20).

Length of Treatment an OTP Can Provide

Wisconsin limits treatment provided by an OTP to two years per Wis. Admin Code 75.15(9)(e). As discussed, treatment may take many years or even decades. While the State allows exemptions from the two-year limit, it must approve formally submitted exemption requests, creating an administrative burden. The State's position is further confounded by supporting other provisions that allude to longer terms of treatment that have no basis in federal regulation. Repeal of this requirement would improve accountability by ensuring appropriate treatment services are provided.

Neither Minnesota nor Illinois have similar limitations on the duration of treatment.

Geographic Proximity to OTP

Wisconsin requires that an individual reside within 50 miles of the OTP per Wis. Admin. Code 75.15(5)(g), but a dependent can apply for exemption from this requirement. DHS has stated that exemption requests are always granted, making the 50-mile radius irrelevant. The 50-mile requirement may impose a burden on those interested in treatment but who lack access to a program within 50 miles because they may not know an exemption can be granted. This requirement should thus be repealed.

Neither Minnesota nor Illinois have similar limitations on proximity to the treatment program.

Treatment Drug Restrictions

Per Wis. Admin. Code 75.15(11), Wisconsin only allows a maximum of six take-home doses after three years in treatment, even though federal regulation allows for six take-home doses after nine months in treatment and 30 doses after two years in treatment. Physicians may apply for an exemption to the state schedule, but this process creates additional administrative burden that impairs access. Attending the clinic frequently limits the patient's ability to maintain employment, family, and social commitments. To address this access problem, the dosage schedule should mirror the federal schedule without having to apply for an exemption.

Minnesota's take-home schedule mirrors the federal schedule (Minnesota Statutes 245A.192.6). Illinois's provision on take-home doses points to an obsolete federal standard and requires written approval from the Department of Human Services for more than a three-day supply (Illinois Administrative Code Title 77 Chapter Xd Part 2060.413(h)(3)). Table 4 compares Wisconsin, Illinois, Minnesota, and federal standards for take-home doses of methadone.

Table 4. Comparison of Take-Home Dose Schedules without Exemption

The numbers of maximum doses are those allowed without a state exemption.

Time-In Treatment	Federal Maximum Doses Per Week	Wisconsin Maximum Doses Per Week	Minnesota Maximum Doses Per Week	Illinois Maximum Doses Per Week
<90 days	1	0	1	1
90 days to 180 days	2	2	2	2
180 days to 270 days	3	2	3	3
270 days to 1 year	6	2	6	3
1 year to 2 years	14	2	14	3
2 years to 3 years	30	3	30	3
3 years+	30	6	30	3

Source: Adapted from 42 CFR 8.12(i); Wis. Admin. Code 75.15(11); Minnesota Statutes 245A.192.6; Illinois Admin. Code 77 Xd 2060.413(h)(3)

In summary, modification of Wisconsin regulations would:

- Increase access to treatment programs
- Be cost-neutral
- Possibly decrease accountability
- Address initial access to treatment services, transfer and care coordination, and continuing recovery care

Additional Buprenorphine Physicians

More physicians able to prescribe buprenorphine would increase access to the medication in areas of high-need and for dependents who are not able to attend an OTP. Increasing the number of buprenorphine certified physicians would consist of two efforts: 1) the incorporation of federal buprenorphine physician training into the medical school curriculum; and 2) requiring certified physicians to update their prescribing availability every two years. These components could be implemented as a complete package or individually at the discretion of the policy maker.

Title XXXV of the Children's Health Act of 2000 outlines the requirements physicians must meet to prescribe buprenorphine to treat opioid addiction. In addition to holding a current state medical license and valid U.S. Drug Enforcement Administration registration number, physicians must possess training or experience in addiction medicine or complete at least eight hours of training regarding the treatment and management of dependents. This training can be obtained via classroom instruction, professional society seminars, or electronic means. Training must be sponsored by an authorized organization or by any other organization that the secretary of the U.S. Department of Health and Human Services deems appropriate (SAMHSA 2015b).

Medical students would complete buprenorphine training during their second year of school. The training is flexible and could be accomplished over the entire school year, a semester, or even in a single day-long module. If the school is not an appropriate sponsor as determined by the secretary of the U.S. Department of Health and Human Services, the course would need to secure a different sponsor and would cost students approximately $200 (AAAP 2015). The second year is an appropriate time to complete the training for two reasons. First, students would be academically ready for the training from an entire year of biological and professional courses. Second, in years three and four, students rotate through required and elective clerkships at sites across the state, making it difficult for them to all receive the same buprenorphine training (UWSMPH 2015). Furthermore, if students receive the training before selecting their clerkships, they may be motivated to select a position that involves addiction medicine.

Every year, about 400 students could be trained as buprenorphine providers (UWSMPH 2014; Medical College of Wisconsin 2015). Students would be able to begin prescribing buprenorphine after graduation when they begin their residencies. Nationwide, approximately 14 out of every 400 physicians are buprenorphine certified but only one third of them actually prescribe the treatment (SAMHSA 2015a; NAABT 2015).

This disparity is the driver for recommending policy that requires physicians update their prescribing availability every two years. Physicians would report two key pieces of information to DHS: 1) whether or not they are prescribing buprenorphine; and 2) the number of additional patients they are able to treat. The physician's availability would be publicly accessible online.

Incorporating buprenorphine training into the medical school curriculum would improve access to treatment by increasing the number of future physicians who are capable of providing opioid addiction treatment services. Thus, this option directly addresses the first treatment gap. When recent graduates of Wisconsin physician education programs become certified, access in high-need and geographically limited areas should improve. Requiring physicians to report their

availability would improve access by allowing dependents to locate active and available treatment providers.

This policy option is cost-neutral or very limited in the costs to the state. Medical students or the institutions themselves would bear the cost of the training program. Collecting physician availability data would be conducted with existing personnel and resources and might require a small investment in personnel hours to initiate and maintain the program.

Accountability factors are less clear. There is the potential of producing too many buprenorphine certified physicians without adequate monitoring. Conversely, availability reporting would increase accountability by making more information about physicians accessible.

In summary, increasing the number of buprenorphine physicians would:

- Increase access to treatment providers
- Be cost-neutral
- Have unknown effects on accountability
- Address initial access to treatment services

Increasing Data Collection

This policy option proposes that data collection efforts should be improved and increased. Data are missing, limited, or unreliable in three issue areas necessary for determining unmet need. Both total treatment capacity data and reliable tools for identifying problem opioid behavior are unavailable. Similarly, data for reporting procedures are unreliable. Without accurate data, it is difficult to provide a needs assessment that is precise enough to warrant investment.

Data Issue 1: Treatment Capacity

An estimated number of treatment service providers and service demanders is only one part of the equation for assessing whether Wisconsin is meeting treatment availability needs. Obtaining data on the capacity of existing treatment providers would allow a more accurate estimate of service availability. Data available from DHS does not provide insight into the total amount of available service space (or time) that is available at OTPs and with providers.

Requiring capacity data from providers that dispense treatment opioids would have the potential to address the treatment gap of initial access by better quantifying service availability. The National Survey of Substance Abuse Treatment Services collects data from treatment facilities on types of services offered as well as capacity (SAMHSA 2014b). A similar database specific to opioid addiction treatment providers offering MAT in Wisconsin would increase the accuracy of capacity estimates.

Data Issue 2: Accuracy of Existing Data

As of spring 2015, data available from DHS were limited to the annual total number of people served, the number of individuals waitlisted, and the number of dependents turned away from treatment providers. If a county does not report waitlist or turn-away data to DHS, the values are assumed to be zero. Ensuring accurate data reporting from counties to DHS is essential in determining treatment service needs and would increase accountability.

Data Issue 3: Needs Assessment

There should be standardized criteria for identifying problem opioid behavior. Iowa has created a tool called the State Treatment Needs Assessment Program Adult Substance Use Survey that collects information from Iowa households about their substance use behaviors. The survey categorizes responses into groups such as drug problem indicators, problem or risky behaviors involving drugs, and diagnostic and self-identified criteria for treatment. This survey has allowed Iowa to produce treatment estimates that utilize individually reported data on substance use attitudes and behaviors (Lutz et al. 2004).

Wisconsin already has a data collection platform in place that would allow for the addition of a specialty questionnaire module that could be used to collect data on opioid use attitudes and behaviors from individual reports. The federal Centers for Disease Control and Prevention and state health departments have been administering the Behavioral Risk Factor Surveillance Survey since 1994. The survey has three components: a core set of questions, optional modules, and state-added questions (SAMHSA 2014b).

The optional modules the Centers for Disease Control and Prevention created cannot be modified, but they include mental health and other topics. Adding some of the modules may provide a cost-effective option for obtaining more information on substance use in Wisconsin. The most promising aspect of the Behavioral Risk Factor Surveillance Survey is in the state-added questions section. This section could have a questionnaire specifically to address opioid use attitudes and behaviors, but the costs associated with the creation and analysis of these questions would be borne by Wisconsin alone.

Gathering more data for a needs assessment would increase accountability and could potentially address access barriers, depending on how the information is applied.

In summary, increasing data collection would:

- Increase cost
- Increase accountability
- Address initial access to treatment services

Future Research

Our analysis and policy options focus on voluntary opioid addiction treatment. This focus limits the scope of the paper, and further studies are recommended to provide specific policy options regarding involuntary treatment, cost to dependents, and special populations.

Involuntary Treatment

Although the clinically recommended treatment process is the same for voluntary and involuntary treatment, the venue in which the treatment occurs is often drastically different. These differences create unique challenges for access. Jails, prisons, hospitals, and mental health care centers may need to treat individuals who are involuntarily experiencing opioid withdrawal.

Individuals in these venues have differing access to treatment when they are in the treatment venue, after they leave the venue, and while they are transitioning between venues. Additionally, involuntary treatment may render portions of the clinically recommended treatment process inadequate or ineffective. We recommend further study of involuntary treatment both to determine the effectiveness of our proposed policy options for this population and to determine new policy options specifically tailored to this population.

Costs

Topics relating to cost of treatment, insurance coverage, and Medicaid reimbursement for opioid addiction treatment have been omitted from this analysis. Figures A8 and A9 in Appendix A: Data outline local, state, and federal funding for county alcohol and other drug treatment on an absolute and per-capita basis. As county programs are only one treatment provider option, these data do not give a full picture of the available funding for treatment. Moreover, the adequacy of county funding, Medicaid reimbursement, private insurance coverage, and funding to serve special populations to provide access and accountability is difficult to assess. More research should be conducted on this topic, especially with recent health care changes at the federal level.

Special Populations

There exists very limited data on opioid addiction treatment for incarcerated dependents, groups with specific cultural needs, and youth at the federal and state levels. The Survey of Inmates in State Correctional Facilities provides some insight into substance abuse for incarcerated individuals, but it is limited to broad definitions of substance abuse (SAMHSA 2014b). A mandated screening tool given to incarcerated populations at intake would provide the data needed to better understand their treatment needs. The recommendations for data collection on youth are similar. A data collection tool specific to opioid abuse behaviors would increase accountability and potentially improve access to services. We recommend further study of special populations to determine the effectiveness of our proposed policy options on these populations and to determine new policy options specifically tailored to their treatment needs.

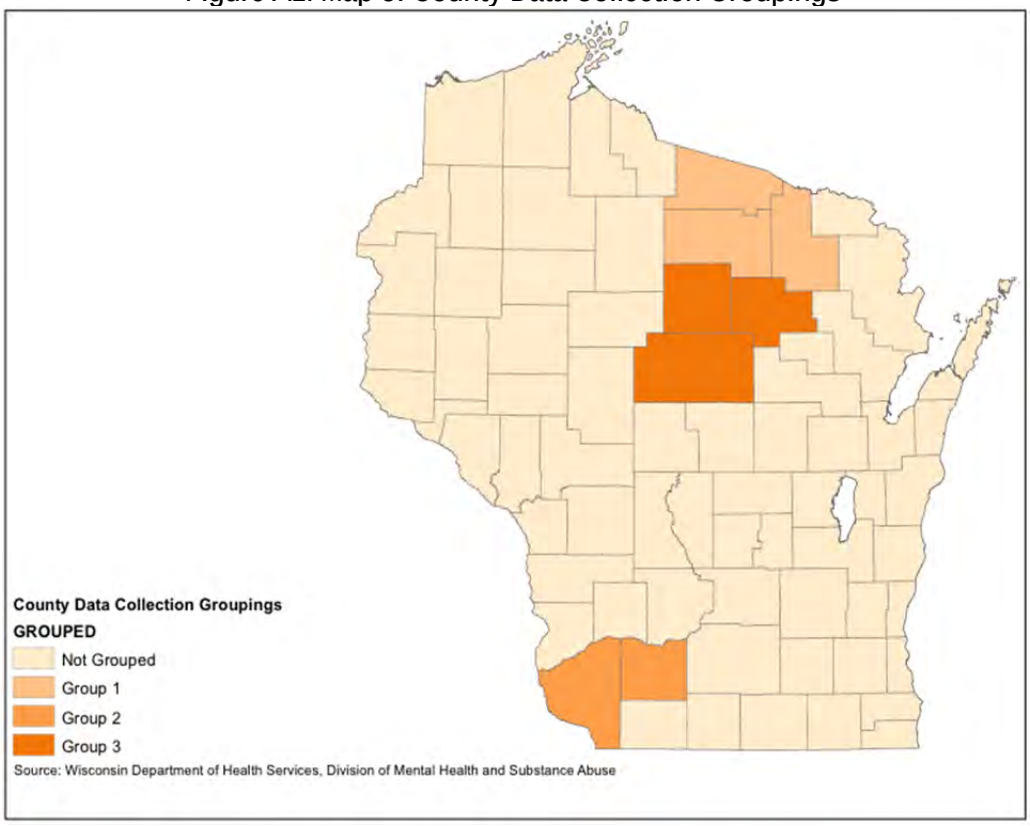
Conclusion

As opioid-related deaths continue to climb, the State of Wisconsin must address the barriers that individuals with opioid addiction face when attempting to obtain treatment. The five options presented in this analysis are not mutually exclusive and can be pursued individually or as a package. This analysis assessed each option on its ability to achieve the goals of increasing access, maintaining cost neutrality, improving accountability, and addressing identified gaps. Each option presented benefits and drawbacks and addressed the goals in different ways. Should the State of Wisconsin adopt any or all of these options, it would be taking positive steps to ensure all citizens in need of treatment could receive it.

Appendix A: Data

County-level data relating to opioid deaths, estimated demand, and much of the additional data reported in this appendix are reported by individual counties. Several Wisconsin counties report this data jointly, however. These jointly reporting counties report aggregate data across their two- or three-county groups. Figure A1 below shows the counties that are grouped. These counties are treated as individual counties in all calculations within this report. This calculation is performed by dividing their reported grouped data value by the number of counties in the grouping. Accordingly, each county within the grouping has the same ending value, but the calculation allows the grouped counties to be compared on a county-to-county basis with non-grouped counties.

Figure A1. Map of County Data Collection Groupings



Estimates of need presented in Figures 4 and 8 in the report used the following methodology: First, we summed data for county program admissions from the Human Services Reporting System (HSRS) Program Participation System from 2010 to 2012. This HSRS data includes data for participation in detoxification, inpatient, residential, outpatient, and methadone treatment programs. Figure A3 illustrates the HSRS data. Similarly, we summed opioid-related Medicaid admissions data from 2010 to 2012. Figure A4 below illustrates the Medicaid data. We used three years of data to control for large increases or decreases in admissions. From the Management Group Madison and the Mental Health and Substance Abuse Needs Assessment reports, we know that 6 percent of HSRS reported and Medicaid participants are duplicates, 46 percent of people seeking treatment do not show up in HSRS or Medicaid databases, and 23

percent of those in need actually seek treatment. We applied the following formula to derive an annual estimate of need for each Wisconsin county:

$$Demand_i = \left(\sum_{y=2010}^{2012} (H_i + M_i)_y \right) \times (1 - 0.06) \div 0.54 \div 0.23 \div 3$$

Demand = Estimate of *i* County's demand (need) for treatment service
i = One of the 72 Wisconsin Counties
y = Year
H = County program participation in county *i*
M = Medicaid program participation in county *i*
0.06 or 6% represents 6% of people in *H* and *M* are duplicates
0.54 or 54% or (100 – 46%) represents that 46% of people are not in *H* and *M*
0.23 or 23% represents that 23% of people in need actually seek treatment
Dividing by 3 represents a 3-year average of 2010 through 2012 values

Example Calculation for Marinette County:

- Medicaid (*M*) participation = 100 in 2010, 87 in 2011, 73 in 2012 for a total of 260
- County (*H*) participation = 34 in 2010, 30 in 2011, 43 in 2012 for a total of 107
- 107 + 260 = 367 total participation in 2010 through 2012
- 6% are duplicates: 367 ^{x} (1 – 0.06) = 344.98 participants
- 46% that get treatment do not show up in county of Medicaid data:
  344.98 ÷ (1 – 0.46) = 638.85 participants and other participants
- 23% of people in need actually seek treatment: 638.85 ÷ 0.23 = 2777.62 participants, other participants, and non-participants
- Divide by 3 to get annual value: 2777.62 ÷ 3 = 925.87 people in need in Marinette

Figure A2. Map of Estimated Service Demand, 2010-2012

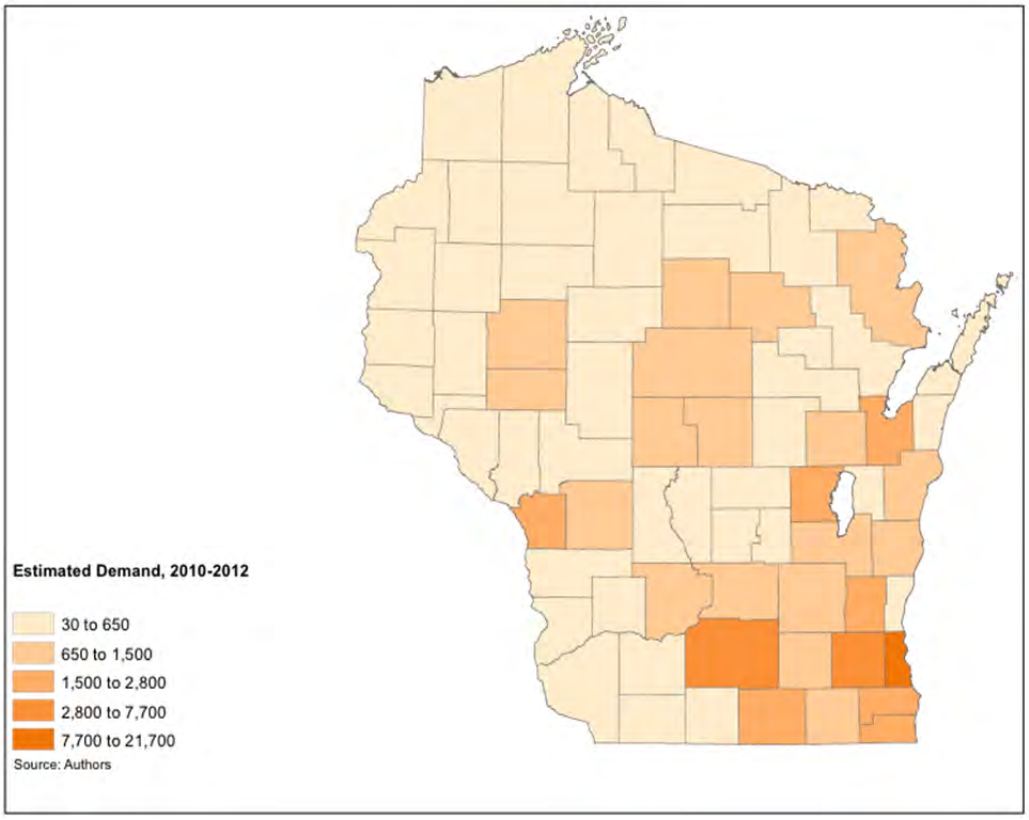


Figure A3. Map of County Opioid Admissions per 10,000 Population, 2010-2012

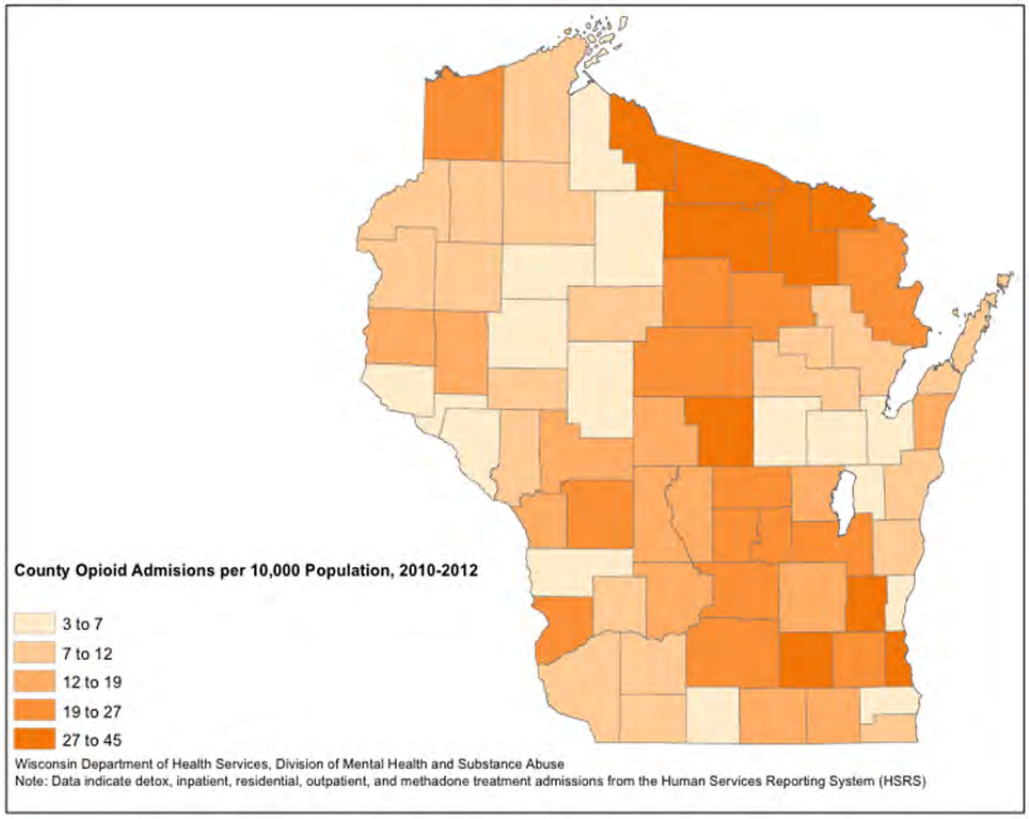


Figure A4. Map of Medicaid Opioid Admissions per 10,000 Population, 2010-2012

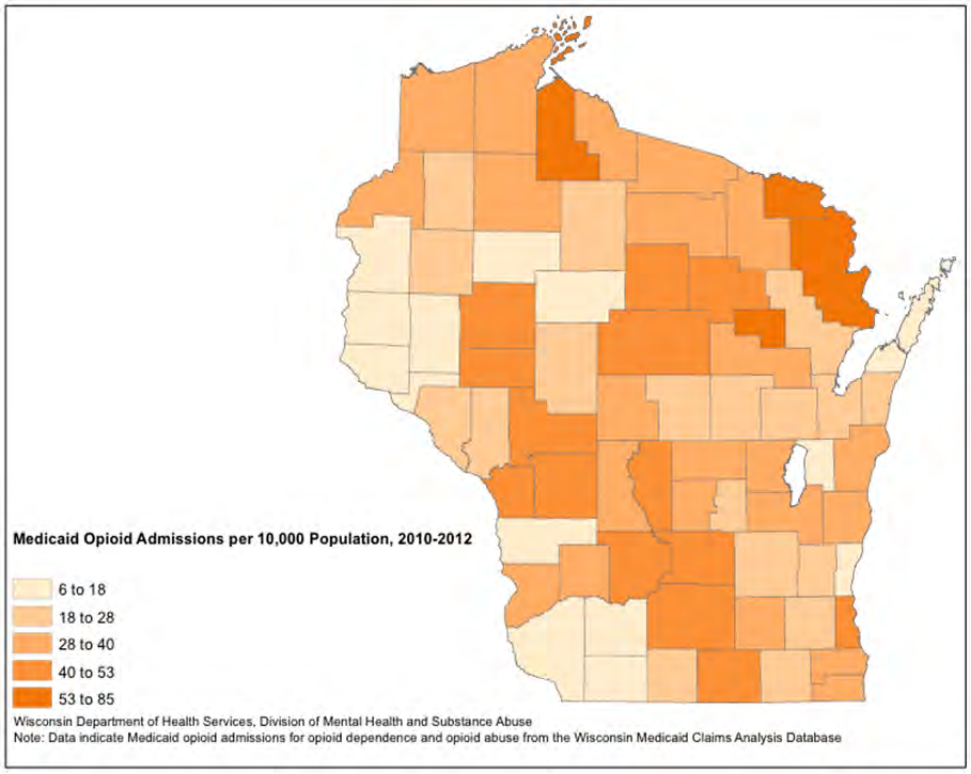


Figure A5. Map of Opioid and Cocaine Arrests per 10,000 Population, 2010-2012

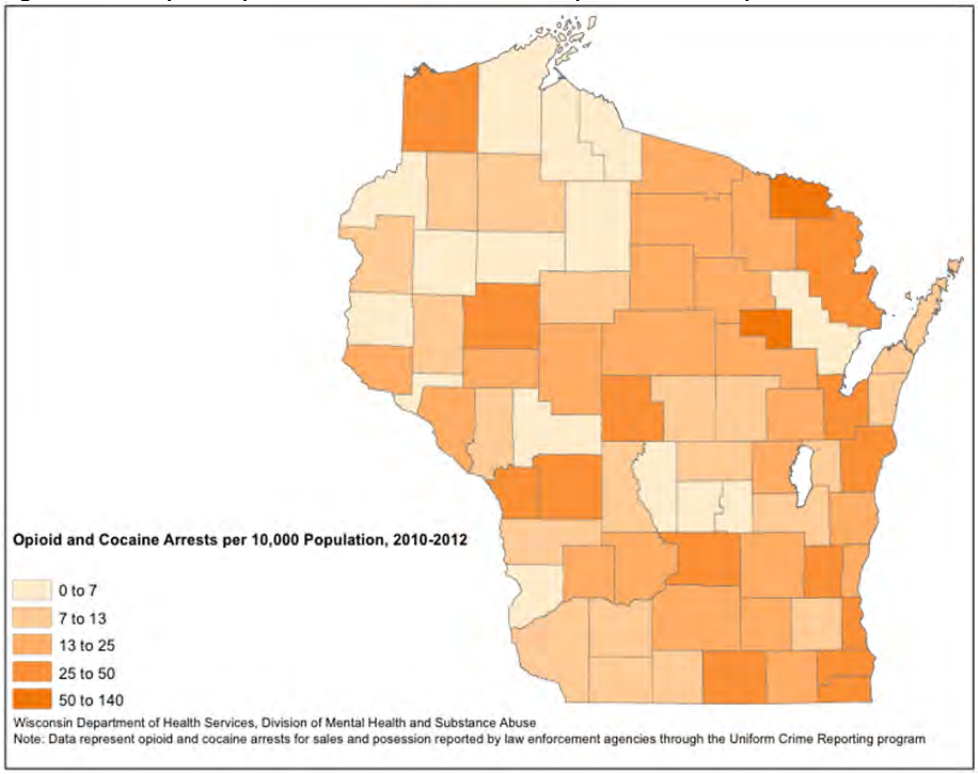


Figure A6. Map of Opioid Hospitalizations per 10,000 Population, 2010-2012

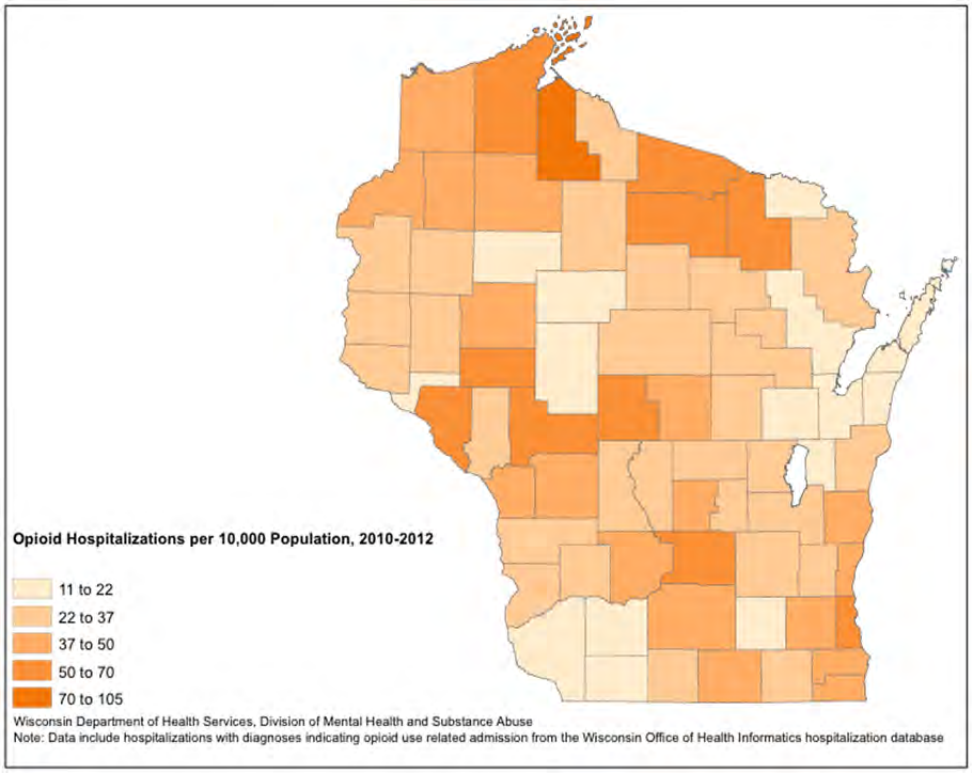


Figure A7. Map of Opioid ER Visits per 10,000 Population, 2010-2012

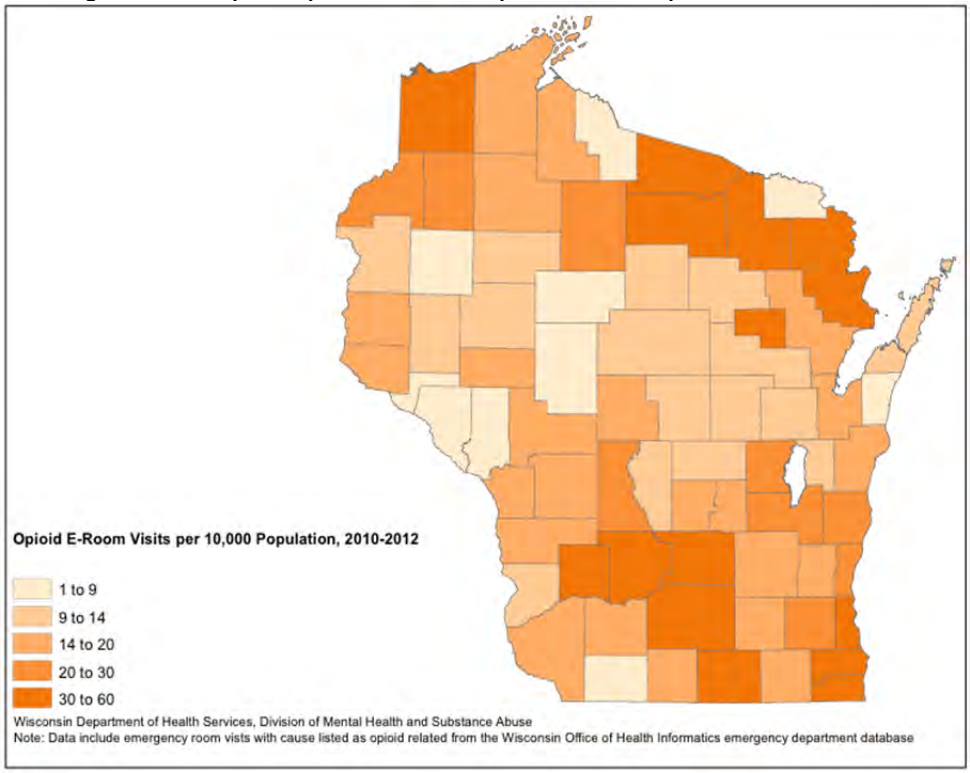


Figure A8. Map of Total Alcohol and Drug Abuse Treatment Revenue, 2013

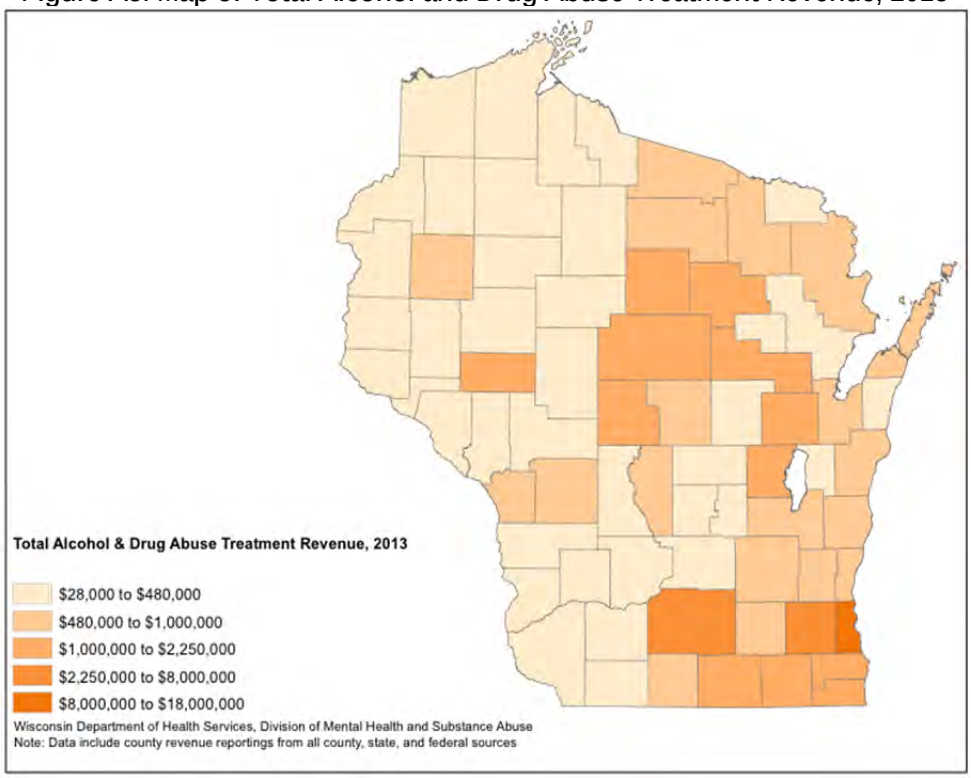
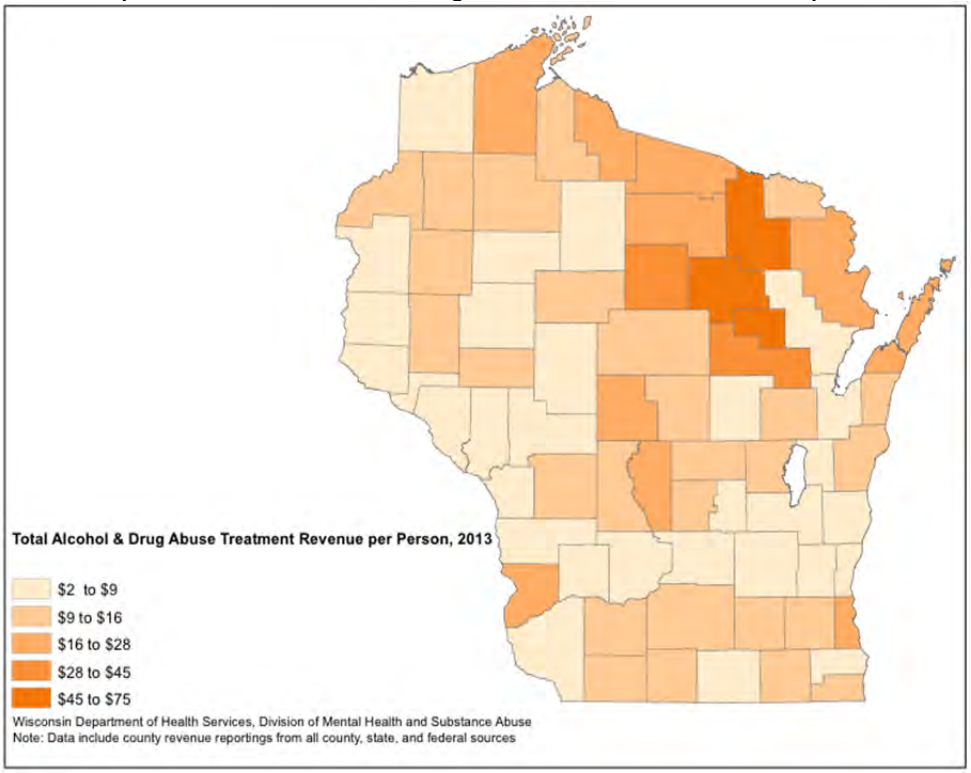


Figure A9. Map of Total Alcohol and Drug Abuse Treatment Revenue per Person, 2013



Appendix B: County Pilot Benefits

The Mental Health and Substance Abuse Collaborative Pilot RFP (#1740-DMHSAS-JB) lists all of the core mental health and substance abuse service benefits that counties are required to develop over the pilot granting period. For a full description of each core benefit see Appendix A in the request for proposal. In the list of benefits below, * denotes a Medicaid reimbursable service. Grant recipients are expected to achieve certification during the course of the grant period to generate Medicaid funding for reimbursable benefits, which may include individual or multi county certification for eligible services.

- Information & Assistance
- Prevention
- Early Intervention
- Protective Services Intake
- Emergency Detention
- Evaluation/Diagnostic Assessment
- Functional Assessment
- Recovery/Treatment Planning
- Case Management, General
- *Targeted Case Management
- Coordinated Service Teams
- *Outpatient Mental Health Treatment (Individual, Family, and Group)
- *Outpatient Substance Abuse Treatment (Individual, Family, and Group)
- Medication Management
- Medication Assisted Treatment for Substance Use Disorders
- *In Home Mental Health Treatment for Children (HealthCheck Other)
- Psycho-education for Children, Adults, and Families
- *Crisis Intervention Services - 24/7
- Crisis Stabilization Services, Including Response for People with Alcohol Intoxication
- Intensive Outpatient Treatment for Substance Use Disorders
- Residential Treatment for Substance Use Disorders
- Residential Supports
- Psychiatric Inpatient Treatment
- Substance Abuse Detoxification
- Peer/Recovery Support Services
- Psychosocial Rehabilitation Services:
    - Supported Employment
    - *Comprehensive Community Services or Community Recovery Services
    - *Community Support Program – with Incentives for Assertive Community Treatment Level of Care
- Court and Criminal Justice Related Services:
    - Court Protective Placement Evaluations/Facilitating Implementation of Court
    - Orders/Settlement Agreements
    - Operating While Intoxicated Assessment
    - Treatment Services/Alternative
- Transportation

References

AAAP (American Academy of Addiction Psychiatry). 2015. “Buprenorphine Waiver Training.” Accessed April 13. http://perma.cc/J4H3-SSCT

AHFS (American Hospital Formulary Service) Consumer Medication Information. 2012. “Buprenorphine Sublingual.” November 15. http://perma.cc/8Q9L-3MTM

AHFS (American Hospital Formulary Service) Consumer Medication Information. 2014. “Methadone.” http://perma.cc/QKF5-V8MG

ASAM (American Society of Addiction Medicine). 2014. “Standards of Care: For the Addiction Specialist Physician.” American Society of Addiction Medicine. http://perma.cc/YN3T-2BR7

ASPE (Office of the Assistant Secretary for Planning and Evaluation). 2015. *Opioid Abuse in the U.S. and HHS Actions to Address Opioid-Drug Related Overdoses and Deaths*. U.S. Department of Health and Human Services. http://perma.cc/6FWE-9JCQ

CDC (Centers for Disease Control and Prevention). 2002. *Methadone Maintenance Treatment*. Centers for Disease Control and Prevention. http://perma.cc/BB9L-DK9A

CMS (Centers for Medicare & Medicaid Services). 2014. *Medicaid Health Homes: An Overview*. Centers for Medicare & Medicaid Services. http://perma.cc/GEU6-5EAJ

Chalk, Mady, Kelly Alanis-Hirsch, Abigail Woodworth, Jack Kemp, and Thomas McLellan. 2013. “FDA Approved Medications for the Treatment of Opiate Dependence: Literature Reviews on Effectiveness and Cost-Effectiveness.” In *Advancing Access to Addiction Medications: Implications for Opioid Addiction Treatment*. American Society of Addiction Medicine 113-221. http://perma.cc/3HZP-4CXP

Comer, Sandra D., Maria A. Sullivan, Elmer Yu, Jami L. Rothenberg, Herbert D. Kleber, Kyle Kampman, Charles Dackis, and Charles P. O'Brien. 2006. “Injectable, Sustained-Release Naltrexone for the Treatment of Opioid Dependence: A Randomized, Placebo-Controlled Trial.” *Archives of General Psychiatry* 63 (2):210-8. doi: 10.1001/archpsyc.63.2.210.

DHS (Wisconsin Department of Health Services). 2012a. “RFP # 1740 DMHSAS-JB Mental Health and Substance Abuse Collaborative Pilot.” Unpublished dataset.

DHS (Wisconsin Department of Health Services). 2012b. "Turnaway and Waitlist Data." Unpublished dataset.

DHS (Wisconsin Department of Health Services). 2013a. "County Expenditures on Alcohol and Other Drug Abuse for Children and Adults." Unpublished dataset.

DHS (Wisconsin Department of Health Services). 2013b. “Wisconsin Population.” Office of Health Informatics. Unpublished dataset.

DHS (Wisconsin Department of Health Services). 2014a. "List of Opioid Treatment Service Programs in Wisconsin by City." Unpublished dataset.

DHS (Wisconsin Department of Health Services). 2014b. *Wisconsin Mental Health and Substance Abuse Needs Assessment*. Wisconsin Department of Health Services. P-00613 http://perma.cc/U3HV-H2LA

DHS (Wisconsin Department of Health Services). 2014c. *Wisconsin Opioid Treatment Program: Patient Reference Handbook*. Wisconsin Department of Health Services. http://perma.cc/P68T-8UCK

DHS (Wisconsin Department of Health Services). 2015. "What is a Substance Use Disorder?" Wisconsin Department of Health Services. http://perma.cc/G9K9-TSSL

Health Canada. 2002. *Methadone Maintenance Treatment*. Health Canada. http://perma.cc/3GX6-WHWM

Krupitsky, Evgeny, Edward V. Nunes, Walter Ling, Ari Illeperuma, David R. Gastfriend, and Bernard L. Silverman. 2011. "Injectable Extended-Release Naltrexone for Opioid Dependence: A Double-Blind, Placebo-Controlled, Multicentre Randomised Trial." *Lancet* 377 (9776):1506-13. doi: 10.1016/S0140-6736(11)60358-9.

Lutz, Gene M., Melvin E. Gonnerman Jr., Ki-Hyung Park, Jamie Mayfield, and Michael Phillip. 2004. *Iowa 2002 STNAP: State Treatment Needs Assessment Program for Adult Substance Use.* Des Moines. Iowa Department of Public Health. http://perma.cc/EZB3-BCPX

Mann, Cindy, Thomas Frieden, Pamela S. Hyde, Nora D. Volkow, and George F. Koob, 7.11. 2014. *Medication Assisted Treatment for Substance Use Disorders*. Unpublished Memo. http://perma.cc/4DPB-N99R

Mattick, Richard P., Courtney Breen, Jo Kimber, and Marina Davoli. 2009. "Methadone Maintenance Therapy versus No Opioid Replacement Therapy for Opioid Dependence." *Cochrane Database of Systematic Reviews* (3):CD002209. doi: 10.1002/14651858.CD002209.pub2.

Mattick, Richard P., Courtney Breen, Jo Kimber, and Marina Davoli. 2014. "Buprenorphine Maintenance versus Placebo or Methadone Maintenance for Opioid Dependence." *Cochrane Database of Systematic Reviews* (2). doi:10.1002/14651858.CD002207.pub4.

Medical College of Wisconsin. 2015. "2015 Facts." http://perma.cc/W82U-LWLG

Minozzi, Silvia, Laura Amato, Simona Vecchi, Marina Davoli, Ursula Kirchmayer, and Annette Verster. 2011. "Oral Naltrexone Maintenance Treatment for Opioid Dependence." *Cochrane Database of Systematic Reviews* (4):CD001333. doi: 10.1002/14651858.CD001333.pub4.

Moses, Kathy, and Julie Klebonis. 2015. *Designing Medicaid Health Homes for Individuals with Opioid Dependency: Considerations for States.* Center for Medicare and Medicaid Services. http://perma.cc/7A7F-UCE8

NAABT (National Alliance of Advocates for Buprenorphine Treatment). 2015. "Frequently Asked Questions." Accessed April 13. http://perma.cc/5GHD-DN7U

NCCMH (National Collaborating Centre for Mental Health (UK)). “Drug Misuse: Opioid Detoxification.” 2008. Reprinted on the *National Center for Biotechnology Information* web site published by the National Institutes for Health. http://www.ncbi.nlm.nih.gov/books/NBK50618/

NDCP (Office of National Drug Control Policy). 2012. *Medication-Assisted Treatment for Opioid Addiction*. Health Care Brief. Office of National Drug Control Policy. http://perma.cc/X4M8-YHPV

NIH (National Institutes of Health). 2014. *Research Report Series: Heroin.* National Institute of Drug Abuse. http://perma.cc/4J52-FV8Z

Office of Food and Drug Administration Commissioner Margaret A. Hamburg. 2014. “Statement on Prescription Opioid Abuse.” Press release. April 3. http://perma.cc/FYE4-9FZD

Prescription Drug Monitoring Program. 2013. “Narcotic Prescription Dispensed per 10,000.” Unpublished dataset.

SAMHSA (Substance Abuse & Mental Health Services Administration). 2005. “Treatment Improvement Protocols (TIP) Series #43.” In *Chapter 2: History of Medication Assisted Treatment for Opioid Addiction Chapter 3: Pharmacology of Medications Used To Treat Opioid Addiction.* Rockville, MD. Substance Abuse and Mental Health Services Administration. http://www.ncbi.nlm.nih.gov/books/NBK64157/

SAMHSA (Substance Abuse & Mental Health Services Administration). 2012. *An Introduction to Extended-Release Injectable Naltrexone for the Treatment of People with Opioid Dependence*. Rockville, MD. Substance Abuse & Mental Health Services Administration. http://perma.cc/49EA-HL65

SAMHSA (Substance Abuse & Mental Health Services Administration). 2014a. *Medication-Assisted Treatment for Opioid Addiction: Facts for Family and Friends.* Rockville, MD. Substance Abuse & Mental Health Services Administration. http://perma.cc/A9P7-8QC8

SAMHSA (Substance Abuse and Mental Health Services Administration). 2014b. *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*. NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. Rockville, MD. http://perma.cc/VV4Z-VHF7

SAMHSA (Substance Abuse & Mental Health Services Administration). 2015a. "Buprenorphine Physician and Treatment Program Locator." March 11. http://perma.cc/K3SZ-U9JG

SAMHSA (Substance Abuse and Mental Health Services Administration). 2015b. “Drug Addiction Treatment Act of 2000.” April 13. http://perma.cc/SX2N-RKAG

SAMHSA (Substance Abuse and Mental Health Services Administration). 2015c. "Substance Abuse and Mental Health Facility Locator." March 11. http://perma.cc/7S76-LYWK

The Management Group. 2009. *Wisconsin Public Mental Health and Substance Abuse Infrastructure Study: Final Report*. Madison: The Management Group. http://perma.cc/EM94-ABYL

U.S. Census Bureau. 2010. “Census Bureau Processed TIGER COUNTIES Shapefile.” http://perma.cc/99VV-RWZN

US-DVA (U.S. Department of Veterans Affairs). 2013. “Tapering and Discontinuing Opioids.” May 23. http://perma.cc/6A3M-B6UH

Uniform Crime Reporting Program. 2010, 2011, 2012. "Opiate and Cocaine Arrests per 10,000." Unpublished dataset.

UWSMPH (University of Wisconsin School of Medicine and Public Health). 2014. “MD Program Admissions.” http://perma.cc/3SBA-NKZW

UWSMPH (University of Wisconsin School of Medicine and Public Health). 2015. “MD Curriculum Overview.” Accessed April 13. http://perma.cc/2JSM-5APD

Wisconsin Death Records. 2005 through 2012. “Opiate Related Deaths per 10,000.”Unpublished dataset.

Wisconsin Department of Administration. 2014. “County Final Population Estimates.” January 1. http://perma.cc/9GE2-2B34

Wisconsin Emergency Department Database. 2010, 2011, 2012. “Opiate Emergency Room Visits per 10,000.” Unpublished dataset.

Wisconsin Human Services Reporting System. 2010, 2011, 2012. “Human Services Reporting System Opiate Admissions per 10,000.”Unpublished dataset.

Wisconsin Office of Health Informatics. 2010, 2011, 2012a. “Medicaid Opiate Admissions per 10,000.” Medicaid Claims Analysis Database. Unpublished dataset.

Wisconsin Office of Health Informatics. 2010, 2011, 2012b. “Opiate Hospital Admissions per 10,000.” Hospitalization Database. Unpublished dataset.

Woods, Joycelyn Sue, and Herman Josephs. 2012. "Reducing Stigma through Education to Enhance Medication-Assisted Therapy." *Journal of Addictive Diseases* 31 (3):226-235. doi: 10.1080/10550887.2012.694599