> whether such policies actually serve a legitimate, realistic purpose given the current opioid climate.[31]

ASAM further notes that both public and private insurance should "offer accessibility to the full range of appropriate clinical services for the treatment of opioid use disorders, including medications, psychosocial therapy, and recovery support services."[31]

Qualifications To Provide MAT. As previously discussed in the "Workforce and Training" section, Federal and State policy regulates what professional certifications and competencies are required to be qualified to provide MAT. Federal laws such as DATA 2000 and CARA determine who is authorized to prescribe buprenorphine and stipulate limitations on these privileges through patient caps.[3,6,90] SAMHSA is responsible for administering these laws and ensuring compliance. State medical boards may also identify needs for targeted education and training and then use their authority to require providers to participate in CME on these topics. Through these professional development mechanisms, States can "improve substance use disorder treatment, improve prescribing practices, and reduce stigma."[91]

States may provide more detailed guidance regarding the use of buprenorphine, such as clinical guidelines, which can lead to an increase in the number of waivered physicians in that area.[81] State policies regulate licensing and prescribing privileges for health care professionals, which may affect the ability of rural facilities leveraging telehealth solutions to increase access to MAT for OUD.[67,76] The challenges these policies pose and their implications for telehealth platforms are further discussed in "Health Information Technology and Telehealth."

Practice Operations. In addition, regulations affect the operations of a practice providing MAT in many ways. For example, regulations set standards for aspects of everyday processes in the office, including safety codes, standards for laboratory testing, and requirements for storing and dispensing medications.[40] Practices must ensure compliance with applicable provisions of Federal privacy laws and regulations such as HIPAA in order to ensure the privacy of patients receiving substance abuse treatment.[47]

In particular, privacy provisions under 42 CFR Part 2—intended to encourage individuals with SUDs to seek treatment—are very challenging to implement and sometimes limit sharing of information that can be critical for patient safety and treatment effectiveness.[92] However, as noted previously, 42 CFR Part 2 may not apply to primary care clinics (see SAMHSA web page cited previously to clarify[71]). As noted in the earlier section "Health Information Technology and

Telehealth," privacy laws, while extremely important, may complicate the implementation of innovative technologies that help facilitate access to care in rural areas.

Payment. As explained in greater detail in the "Payment and Reimbursement" section, Federal and State policies that control reimbursement, including those that regulate Medicaid coverage and payment rates, have a significant impact on a provider's ability to offer MAT services for OUD.[3] While States must ensure their Medicaid programs meet all Federal requirements, they can tailor their benefits package to improve OUD treatment. For example, they can increase payment rates for substance use treatment, eliminate or loosen preauthorization requirements for MAT, and remove limitations that are not clinically indicated on duration or quantity of MAT drugs.[77] In recent years, States such as New York and Massachusetts enacted legislation that either restricted or entirely eliminated the ability of public and private insurers to require prior authorization for some SUD treatment services.[91]

Patient Care. Federal and State policy also may set forth regulations that influence a number of activities related to patient care. There may be standards for patient rights and responsibilities, informed consent, and clinical documentation. Guidelines might also include recommendations for practice related to prescribing, substance use treatment, or coordination of care.[40] For example, a number of voluntary prescribing guidelines have been developed by State departments of health, professional associations, and CDC.

State policy can be leveraged in several ways to prevent OUD. Several States have now enacted legislation that sets limits on opioid prescribing practices, such as restricting the length of first-time opioid prescriptions for the treatment of acute pain.[93] Similarly, 49 States, DC, and Guam all have prescription drug monitoring programs (PDMPs), which are electronic databases that collect information on prescribing of controlled substances such as opioids. A number of States have recently begun to mandate provider use of the PDMP to prescribe an opioid.[93] State Medicaid plan authorities have the flexibility to adopt coverage of alternative pain management services, such as acupuncture, massage therapy, and cognitive behavioral therapy.[94]

Thoughtfully designed State and local policies and programs can help equip and support community-based services that prevent substance abuse and provide a continuum of care and recovery supports. OUD is a chronic, recurring condition that requires both behavioral health and medical care. State and local governments can enact policies that promote integrated or coordinated care that will in turn strengthen both primary care and behavioral health services. For instance, policies can encourage the use of screening for substance use in primary care, such as using the

Screening, Brief Intervention, and Referral to Treatment (SBIRT) model.[91] Another strategy to promote collaborative care between these systems includes enacting policies that strengthen partnerships between FQHCs and community mental health centers.[91]

Pregnant Women and Infants. Policy solutions are also needed to facilitate care for women who use opioids and become pregnant, as well as for their infants who may experience neonatal abstinence syndrome (NAS), which represents a pattern of withdrawal after opioid exposure. The increasing number of NAS cases has become a serious public health problem as the condition may cause complications, including fever, weight loss, and seizures, that jeopardize the infant's long-term developmental outcomes.[95]

A number of stakeholders may be involved in the care of these women and their children, including those from the medical and behavioral health systems, child welfare agencies, and education systems. Each system has its own set of policies that may help or hinder successful outcomes for maternal and child health.[95] To align the goals of all parties involved, communities could take a collaborative approach that emphasizes training and implementation of best practices. One model that could be adopted is the Substance-Exposed Infants framework, which emphasizes the need for cross-system coordination and highlights five different timeframes in the life of an infant in which policy intervention could have an impact.[95]

Similarly, policies can strengthen coordination between different local systems, using a model such as Screening and Assessment for Family Engagement, Retention and Recovery. This model promotes collaboration among child welfare professionals, substance abuse treatment providers, and family court representatives.[96] States and localities can also implement child welfare policies that incorporate screenings for SUDs to better serve these children and their families.

Incarcerated Individuals. Approximately 65 percent of currently incarcerated individuals have a SUD, but few receive the behavioral health services they need.[97] To address this issue, many communities have shifted their focus from criminalizing those with SUDs to emphasizing the need for treatment. Local governments can work with law enforcement to prioritize diverting people with OUD to treatment programs and services as opposed to incarcerating these individuals.[67,98] Also, drug courts provide an opportunity to increase referrals to MAT, although some of these courts have adopted a short-sighted blanket prohibition against opioid maintenance therapy.[96]

Some States have adopted policies that increase availability of MAT services within the criminal justice system at intake, during incarceration, and after discharge.[96] After reentry into the

community, some people with SUDs may find their probation or parole agencies prohibit them from receiving MAT.[97] Policymakers can change these policies to enhance access to this treatment without fear of violating probation or alternative sentencing programs.

Harm Reduction. Given the barriers and unique challenges of substance abuse treatment in rural areas, some primary care practices may not be ready to provide MAT services. However, these providers and their communities can still support patients and reduce the health consequences of drug abuse through harm reduction interventions. PCPs can help educate patients and families about the risk of overdose from opioids and about the use of naloxone. They can also facilitate access to naloxone and sterile needles for individuals using intravenous drugs.[27]

Overdose reversal drugs such as naloxone (e.g., Narcan) play an important role in combating the opioid epidemic. In rural areas, policies that expand access to naloxone are vital, because first responders may be slower to reach individuals experiencing an overdose and may have to travel longer distances to reach a medical facility.[35] Because of these challenges, States are implementing policies to widen the scope of practice of emergency medical responders and emergency medical technicians to include the training and authority to administer naloxone.[35]

Local and State laws have been passed that permit pharmacists to dispense naloxone without a "direct, individual prescription from a medical provider" to increase access to this drug for other key members of the community, such as family members of individuals with OUD, law enforcement, and emergency responders.[35,93] Some States have passed legislation that even allows nonmedical entities, including schools and homeless shelters, to dispense naloxone or have the drugs onsite.[35] In addition, Good Samaritan laws encourage individuals who observe an overdose to offer naloxone by shielding them against lawsuits. As of January 2017, the National Conference of State Legislatures reports that 37 States and DC have enacted a version of this legislation.[99]

Local leaders play a unique role in the community support systems that are confronting the opioid epidemic. County officials can advocate on behalf of their communities and work with their State and Federal partners to promote the implementation of policies that will best address their needs in fighting the opioid crisis.[98] For example, some local communities permit or provide needle exchanges or safe injection sites, two practices that show promise for reducing morbidity and mortality associated with OUD.

Law enforcement officers have often proven to be among the most effective advocates for treatment, especially in their own communities. Other first responders are also playing an important

role in the effort to deal with opioids in communities. Many first responders are now equipped with naloxone for treating overdoses. Relevant public laws and policies are often intertwined throughout the local, State, and Federal levels, and it is essential to have coordination and cooperation to deliver the most effective and efficient services possible. Those who hope to make MAT more widely available and take other steps to address the opioid crisis must be aware of applicable Federal, State, and local laws and regulations and, perhaps, work to ensure that they support effective strategies to improve public health.

2.2 Promising Models for Use in Rural Settings

AHRQ Technical Brief #28 provided an analysis of a number of innovative models of care that offer MAT services. The technical brief also outlined a number of characteristics their expert informants suggested were applicable to all the effective models. Those characteristics include:

- **A care coordinator** who "is designated with providing care integration and coordination for treatment of OUD and coordinating primary medical care and mental health needs. The care coordinator may also serve as the main point of contact for patients, allowing for less extensive physician-patient contact."[3]
- **Primary care clinicians** (waivered physicians, physician assistants, or nurse practitioners) who "primarily prescribe buprenorphine, have less frequent face-to-face visits with the patient, and provide consultation as needed."[3]
- **Psychosocial services,** which are "essential to successful MAT models of care." In addition, "provision of counseling is required to meet requirements for office-based MAT as specified in DATA 2000."[3]

The technical brief also makes clear the importance of **consulting resources** to support office-based provision of MAT in primary care settings. Across various models and cases, these consulting resources may come from OTPs, other SUD specialty treatment clinics, and university-based tertiary care medical facilities. They also may include web-based resources, such as PCSS-MAT, which provides linkages to a national network of trained physician mentors. The consultation may be in person, by telephone, or through web-based video linkages.

This section briefly presents three models of care for the delivery of MAT for OUD that appear promising for use in rural primary care settings. The descriptions below are brief and we refer the reader to the technical brief for a more detailed description of the features of the models. Where

available, we also provide links to websites that may provide relevant resources and additional description.

The Hub and Spoke Model. This model was developed in Vermont and functions well in rural areas because it increases access to treatment in a cost-effective manner. As the number of individuals with OUD rose in Vermont, the substance use treatment system became overburdened and wait times to receive treatment rose dramatically, as high as 1.5 to 2 years in 2011.[100]

While it was necessary to implement MAT in primary care practices to increase treatment capacity across the State, this model was successful because these practices were supported by the specialty expertise at regional and embedded support staff. Further, the implementation of MAT in the primary care facilities balanced costs to expand access to MAT with reduced burden on medical expenditures. In Vermont, Medicaid beneficiaries receiving MAT had lower health care expenses and utilization of inpatient hospital and outpatient emergency department services than those receiving substance abuse treatment without medication.[101]

The Hub and Spoke Model includes two levels of care: regional OTPs that serve as the "hubs" and community clinics that function as the "spokes." The OTPs that serve as the hubs also provide methadone and typically have extensive experience in OUD treatment. Characteristics of the community clinics vary more, but they include waivered providers who can prescribe (typically buprenorphine/naloxone), care coordinators, and some level of counseling and psychosocial services.

The model emphasizes care coordination and features a "care connector" such as a registered nurse or clinician case manager at spoke clinics.[3] In this model, patients are screened for their level of complexity and treatment needs and managed accordingly. Patients with more complex needs may be referred to the hub, while more routine cases are treated in a spoke. Hub staff serve as consultants to the spoke clinic team, and responsibility for patient care may shift back and forth between hub and spoke as needed. For example, initial treatment induction might be conducted by the hub OTP, and then the patient could be transferred to the spoke clinic for ongoing management.[3] Less clinically complex patients may receive care only in office-based clinic settings.

The Project ECHO Model. The Project Extension for Community Healthcare Outcomes (ECHO) was developed in the very rural State of New Mexico and was designed to leverage the knowledge and skills of the university-based health care system to expand treatment capacity

throughout the State. Over the past 12 years, this model has been widely adopted to treat a range of chronic health conditions throughout the United States and around the globe.

In 2016, the U.S. Senate passed the ECHO Act, which directs HHS to further study the impact and opportunities for the Project ECHO model in rural health care.[102] Using inexpensive web-based televideo capabilities, teleECHO clinics use "grand rounds" style, case-based presentations to build providers' knowledge and skills related to addiction medicine. The rural providers present the cases and remain the clinicians of record. The role of the university-based experts is solely to educate, consult, and mentor rural providers on treatment approach—patient identifiers are not disclosed.

The Integrated Addictions & Psychiatry (IAP) TeleECHO Clinic was created to expand access to high-quality and effective medical and behavioral treatment for addiction and mental illness in communities throughout New Mexico. Through this initiative, originally funded by the GE Foundation, family nurse practitioners (FNPs) worked in eight community health centers recruited by Project ECHO to receive additional training and experience in behavioral health treatment.

The FNPs were paired with community health workers (CHWs) who also received specialized training and focused practice experience. The FNPs learned to screen for, diagnose, and treat unipolar and bipolar depression, anxiety disorders, posttraumatic stress disorder, psychotic disorders, and addiction to alcohol, opioids, and tobacco. The CHWs assisted with such things as screening, brief interventions to improve treatment adherence, basic case management, and health education.

The Project Echo model of linking academic medical centers to medically underserved areas has been widely replicated throughout the country and internationally and has been applied to a growing variety of medical conditions. For example, the State of Washington has essentially replicated the program, the University of Washington Psychiatry and Addiction Care Conference, or UW-PACC. The goals of this program are similar and it focuses on providing support to both primary care and mental health care providers across the State.[103] "Similar efforts in other rural areas have shown high rates of provider satisfaction."[104]

The Opioid Addiction Treatment ECHO includes three different types of teleECHO clinics focused on the following groups:[105]

- Providers and primary care team members,
- CHWs and medical assistants, and
- Counselors, social workers, and psychologists.

In this way, Project ECHO provides training and support to staff members who can address each critical element of a sound MAT program. In addition to building workforce capabilities, participation in the Opioid Addiction Treatment ECHO community can decrease feelings of professional isolation, which often plague rural providers.[46] Also, as the opioid epidemic sweeps the Nation, there has been an influx of new opioid-related resources, tools, and practices. The teleECHO clinic is very useful for the rapid dissemination of information relevant to clinical practice for these providers offering MAT services.[46]

The Office-Based Opioid Treatment with Buprenorphine (OBOT-B) Collaborative Care Model. The OBOT-B Collaborative Care model, also known as the Massachusetts Model, was created at Boston Medical Center in 2003. Then, in 2007, this model was expanded into community health centers (CHCs) across the State to improve access to buprenorphine treatment, primarily among underserved and marginalized communities.[106]

Nurse care managers (NCMs) play a key role by providing support to and acting as a liaison between patients and waivered physicians. A training program for medical professionals delivers education on MAT best practices and encourages more PCPs to start prescribing buprenorphine.[3] Within this model are four treatment stages in which the NCM (or physician, as needed):[106]

1. Conducts an initial screening and assessment of the patient's appropriateness for OBOT-B,
2. Supervises medication induction,
3. Monitors stabilization and provides support to the patient with frequent visits or telephone communication, and
4. Holds followup visits with the patient, as appropriate, for maintenance.

Often, physicians may be deterred from providing OBOT-B because they have competing priorities at their busy primary care practices and lack adequate support to manage these patients. However,

with the OBOT-B Collaborative Care Model, NCMs take on the responsibilities of complex care management while communicating with the physician primarily through documentation in the electronic medical record.[106] This approach benefits patients as well because NCMs are more accessible than physicians, so they can quickly address patient issues and concerns.

By implementing the OBOT-B Collaborative Care Model across the CHCs in the State, Massachusetts created a network that allows patients to transition easily between physicians if a provider stops prescribing buprenorphine.[106] Because these patients may be at high risk for relapse, continuity of treatment is incredibly important. However, one disadvantage of this model is that the availability of onsite psychosocial services may vary depending on the CHC.[3]

Overall, the OBOT-B Collaborative Care Model successfully increased access to MAT for OUD in CHCs. Three years after the program started, retention rates in treatment were very impressive, with 65 percent of patients remaining in treatment for 1 year or more. There were significant increases in the number of waivered physicians as well as the number of annual patient admissions for buprenorphine treatment at the participating CHCs. Also, this model proved to be financially sustainable because CHCs that were FQHCs were reimbursed for nursing visits at a rate comparable to those of other clinical providers.[106]

AHRQ's Technical Brief #28 provides extensive descriptions of these and several other models. A careful reading of that document would be worthwhile for those aiming to introduce MAT for OUD into rural primary care. As noted above, it may be necessary to combine components of various models to develop an accessible and effective approach that is workable in your local environment.

In the spirit of the phrase that "all health care is local," those who want to develop primary care-based MAT in rural areas should feel free to develop unique local solutions so long as they include the elements described above—care coordination, waivered providers with prescription authority, psychosocial services, and consulting resources. These elements may be provided in person, via telehealth, or through referral, keeping in mind local laws and regulations as well as rules related to reimbursement for services. Monitoring of patient outcomes and a commitment to continuous quality improvement can help ensure that problems are identified and addressed in an ongoing fashion.

3. Tools and Resources

A variety of tools and resources are available for providers and patients who offer or use MAT services. As part of this environmental scan, a list of tools has been assembled for use in the implementation of MAT. Although the tools were not all created specifically for rural primary care practices, they are potentially useful in those and other settings.

The tools and resources found by this environmental scan are listed and described in the tables in Volume 2 of this report. They come from a variety of public and private sources. For example, many government entities, such as the Office of the Surgeon General, CDC, SAMHSA, NIDA, Department of Veterans Affairs, IHS, and Office of Disease Prevention and Health Promotion, have created a number of useful tools related to OUD and MAT. Tools included in the tables were identified through methodical searches of the published and grey literature and through individual searches for specific kinds of tools (see Methodology section).

Among the resources are the NIDA-funded BupPractice, which provides many tools for both providers and patients. BupPractice offers buprenorphine waiver training for physicians, nurse practitioners, and physician assistants. In addition, the PCSS-MAT is a collaborative effort led by the American Academy of Addiction Psychiatry (AAAP) in partnership with the American Osteopathic Academy of Addiction Medicine (AOAAM) and a broad network of other addiction-related organizations. This effort provides training and a mentoring project that helps providers implement MAT for OUD in a variety of settings, including primary care.

Professional societies also provide a wealth of resources for their members and the public that can be used in implementing MAT for OUD. These include but are not limited to the ASAM, AAAP, AOAAM, American Psychiatric Association, American Medical Association, and California Society of Addiction Medicine. Other materials have been developed by institutions of higher education and medical professionals for use in their practices. Many of these organizations and others are also partners in the PCSS-MAT initiative.

In the tables, the tools have been categorized by topic, although there are many different types and formats. For example, there are materials that can be used for provider, patient, and community education, such as guidelines, toolkits, training materials, and fact sheets. Further, some of these tools, such as screening and assessment instruments, consent forms, patient agreements and

contracts, implementation materials and checklists, protocols, and web- or mobile-based applications, can be used in practice.

- **Table 1** includes resources related to OUD prevention. Given the challenge of providing sufficient MAT capacity, it certainly makes sense to work to prevent more people from developing SUDs. This section includes tools for assessing and managing pain, prescribing opioids, and promoting awareness and education about OUD.
- **Table 2** focuses on MAT training opportunities and educational materials for providers, medical teams, patients, and families.
- **Table 3** provides tools that may be useful in the implementation of MAT in office-based settings. These tools cover the entire MAT process, including conducting initial screenings, assessing withdrawal, terminating opioid therapy, implementing SBIRT interventions, setting up MAT services in your practice, and incorporating psychosocial therapy.
- **Table 4** includes tools related to both the prevention of and response to overdose, as any patients receiving MAT are at risk of overdose if they relapse.

It is important to note that the tools detailed in these tables do not represent everything that has been developed. In the face of this opioid crisis, constant streams of new tools are being created. For example, a new mobile application that helps combat opioid overdose is in development as a result of the 2016 Naloxone App Competition sponsored by FDA. Further, this environmental scan does not address whether the tools have been validated or how widely they are used.

While many of the tools are in the public domain, some may require purchase or permission to use. For the purposes of this report, each tool is categorized by access and terms of use, as follows:

1. **Public domain:** tools are available for public use without current copyright or licensing restrictions, primarily published by the government.
2. **Copyrighted, freely available:** tools are accessible without purchase but may be subject to restrictions for use and distribution.
3. **Access may require fee or membership:** tools are exclusively owned or rights are held by an individual or organization and may require purchase, membership, or an account to access.

The inclusion of any of these tools does not imply endorsement by AHRQ, HHS, or the U.S. Government.

4. Conclusion

Ultimately, implementing MAT services in primary care settings is a new challenge for many PCPs, and those in rural areas experience a significant number of unique challenges. These barriers are found at the patient, provider, community, and system levels. Despite these obstacles, a number of strategies can be undertaken to deliver high-quality, cost-efficient MAT in rural primary care.

To fight the opioid epidemic, it is critical to:

- Build the workforce of available providers who offer MAT services in rural areas;
- Decrease stigma surrounding SUDs and treatment; and
- Implement policies that support the work of these providers and the community-based programs that provide services and supports to those in recovery.

At this time, the available literature provides a modest number of evidence-based models for implementing MAT services specifically in rural primary care settings. It is essential that there be a major focus on increasing access to this treatment in rural communities. Future research should evaluate what strategies are being successfully used in rural areas and how they can be disseminated in other communities for broader adoption. In support of this goal, AHRQ invested in a 2016 grant initiative, Increasing Access to Medication-Assisted Treatment of Opioid Abuse in Rural Primary Care Practices to help support rural primary care practices in delivering MAT.

AHRQ created the grant program to learn more about effective strategies for facilitating the implementation of MAT for OUD in rural primary care practices and is investing more than $12 million over 3 years in this initiative. Five grants were awarded to:

- **University of Colorado, Denver –** "Implementing Technology and Medication-Assisted Team Training and Treatment in Rural Colorado (IT MATTTRs Colorado)."
- **University of North Carolina at Chapel Hill –** "UNC Extension for Community Healthcare Outcomes for Rural Primary Care Medication-Assisted Treatment (UNC ECHO for MAT)."
- **American Institutes for Research in partnership with the State of Oklahoma –** "MAT Expansion in Rural Oklahoma."

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- **Pennsylvania State Department of Human Services in partnership with the Pennsylvania Office of Mental Health and Substance Abuse Services and the University of Pittsburgh –** "Enhancing the Access and Quality of MAT for Individuals With Opioid Use Disorder (OUD) in Rural Pennsylvania's Medicaid Primary Care Practices."

- **University of New Mexico –** "ECHO-F Model to Expand Medication Assisted Treatment in Rural Primary Care"

These grantees aim to improve access to MAT in rural areas by increasing the number of waivered PCPs delivering MAT and using innovative means, such as patient-controlled smart phone apps and virtual training and consultations with Project ECHO. As a result, care will be provided to more than 20,000 individuals with OUD. Using the lessons learned from these projects, AHRQ, together with the grantees, will develop and disseminate a blueprint for how other communities and primary care teams can address the challenges of providing MAT and ensuring access to care across America's rural communities.

While a number of challenges remain, a wealth of tools and resources are available to providers working to implement MAT for OUD in rural primary care settings. Many of these tools are not specific to rural communities or primary care, but they can still be used in these settings. AHRQ will make the collection of tools identified through this environmental scan publicly available. In addition, there may be some benefit to developing tools in the future that are specifically adapted or designed for the unique obstacles rural providers and practices face.

As communities across America are fighting the opioid crisis, new tools and resources are rapidly emerging. The results of this environmental scan represent the available published and grey literature to date, although they will likely be superseded by additional resources in the near future.

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"This course was developed from the public domain document: Moran GE, Snyder CM, Noftsinger RF, et al. Implementing medication-assisted treatment for opioid use disorder in rural primary care: environmental scan, volume 1. (Prepared by Westat under Contract Number HHSP 233201500026I, Task Order No. HHSP23337003T). Rockville, MD: Agency for Healthcare Research and Quality; October 2017. Publication No. 17(18)-0050-EF."

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