

Telehealth Approaches to Improve Opioid Use Care in Pregnancy

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Abstract: Although pharmacotherapy is the mainstay of treatment for opioid use disorder, the US faces a shortage of qualified pharmacotherapy providers, even in high-need areas. Telemedicine is a promising method of increasing the availability of opioid use disorder treatments, but several barriers must first be addressed before implementation. This article presents a case study of using telemedicine to provide pharmacotherapy in pregnancy, examines the barriers to providing pharmacotherapy via telemedicine, and proposes solutions to overcome these barriers.

Key words: telemedicine, telehealth, opioid use disorder, pregnancy, buprenorphine

The mainstay of treatment for opioid use disorders, in pregnancy or outside of pregnancy, is pharmacotherapy (either methadone or buprenorphine). Pharmacotherapy is associated with decreased death from overdose,¹ increased participation in prenatal care, and improved obstetric and neonatal outcomes.^{2,3} Either methadone or buprenorphine may be used to treat opioid use disorder in pregnancy; the medication

choice is based on patient preference and availability.

Regulation of Pharmacotherapy to Treat Opioid Use Disorders

Methadone and buprenorphine are both highly regulated medications. Methadone can only be prescribed and distributed at an accredited Opioid Treatment Program that meets both federal and any additional state regulations.^{4,5} These regulations require that patients present in-person to receive their daily methadone dose; “take-home” doses are highly regulated. These programs must also have diversion programs in place and require random drug testing.

Office-based therapy with buprenorphine was supposed to eliminate many of these barriers to care. However, practitioners are still required to obtain an X-waiver, which requires 8 hours of additional training before prescribing

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The author declares that there is nothing to disclose.

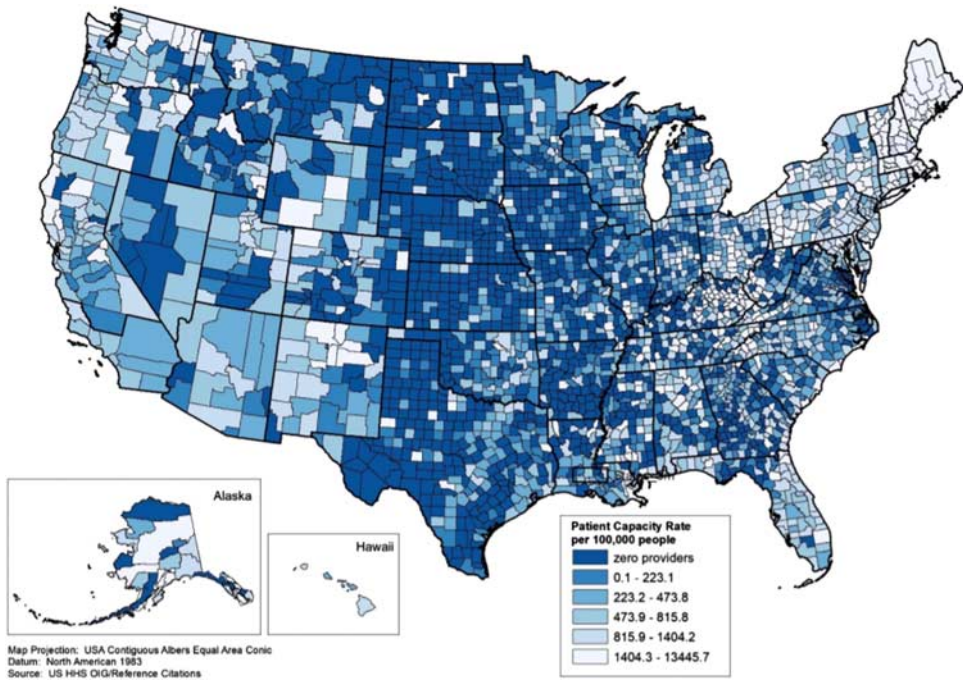


FIGURE 1. Patient capacity to treat opioid use disorder with buprenorphine per 100,000.⁶ Note: All counties with patient capacity rates ≤ 473.8 are considered to have the low-to-no patient capacity. *Source:* OIG analysis of SAMHSA Buprenorphine Waiver Notification System Data, 2018. [full color online](#)

buprenorphine, and additional training for advanced practitioners. The number of patients that a provider can manage is limited based on the length of time with an X-waiver and specialty. In addition, some states and insurance plans still require monthly in-person evaluations and urine drug screens before refills.

A Shortage of Opioid Treatment Programs

The current infrastructure in the United States to treat opioid use disorder falls short of the significant need. A report by the Office of the Inspector General (OIG) released in January 2020 demonstrated the significant shortage of providers to treat opioid use disorders.⁶ The OIG identified that 40% of counties in the nation do not

have any X-waivered providers at all, and another 24% of counties have the capacity to treat < 474 per 100,000 people (Fig. 1). Although the number of X-waivered providers continue to increase, 320 high-need counties have no X-waivered providers (Fig. 2). Nearly half of counties in the United States have no publicly available medication (methadone, buprenorphine, or extended-release naltrexone) provider.⁷ These figures may actually underestimate the problem. Among X-waivered providers, 25% have never actually written a prescription for buprenorphine, and 87% practice below their prescribing limit.⁸ In one study that called all listed X-waivered providers in 2 states, they identified 965 unique practices but were unable to contact 401 (42%) of those practices on 3 attempts.⁹

Treatment availability for pregnant women is even more limited. In 2020,

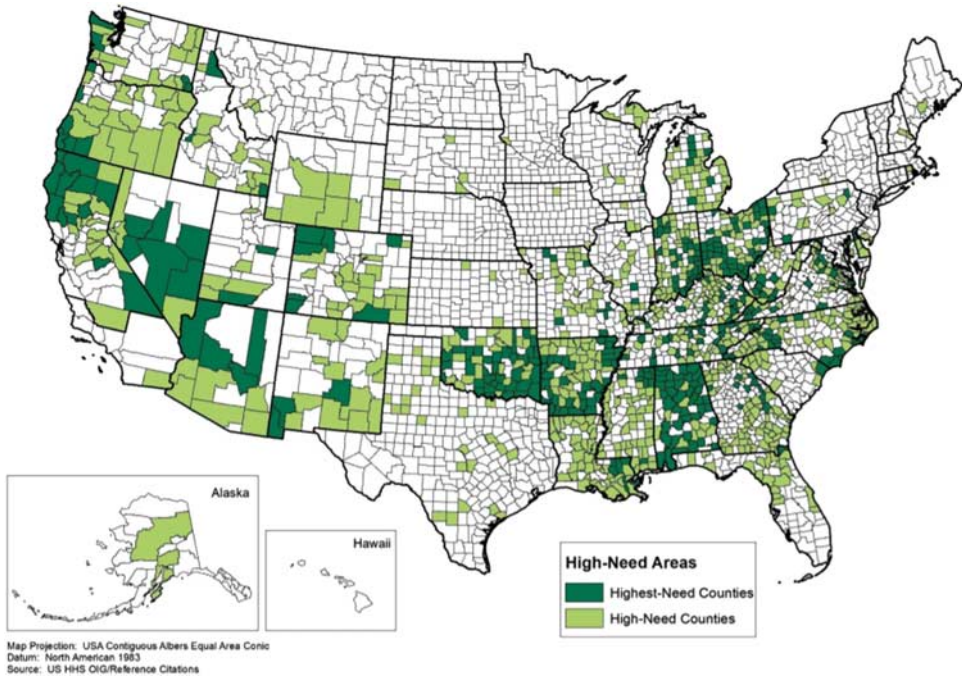


FIGURE 2. Distribution of high-need counties in the United States. The highest need counties were >80th percentile for overdose, opioid prescribing rates, and nonmedical use of pain relievers. High-need counties were >60th percentile for these measures.⁶ Source: OIG analysis of CDC and SAMHSA data, 2018. [full color online](#)

only 1.8% of obstetrician-gynecologists who accept Medicaid, or 560 across the United States, had an X-waiver.¹⁰ In a study of buprenorphine-waivered providers in Missouri and Illinois, of 564 practices reached, only 40% reported accepting pregnant patients.⁹ Of opioid treatment programs offering methadone, 86% accepted pregnant patients.

Burden on Patients

Requiring patients to present on a daily basis to receive methadone doses results in a heavy patient burden. In a survey of 52 patients enrolled in a methadone clinic in Vermont, patients reported travel times of 60 minutes per clinic visit and an average of \$48 on clinic-related transportation costs.¹¹ Approximately 40% relied on public transportation, and 22%

of patients reported that travel time interfered with their ability to maintain employment. Even office-based therapy can represent a substantial burden on patients; patients may live >4 hours from the nearest facility offering office-based therapy. Without a driver's license, dependable vehicle, or money for gas, this can represent an insurmountable barrier to receiving treatment.

The Potential of Telemedicine

While one solution is to increase the number of X-waivered providers and opioid treatment programs, and in particular target infrastructure development in places of highest need, using telemedicine is another strategy to rapidly increase capacity to treat opioid use disorders.



FIGURE 3. Equipment for a telemedicine visit. full color
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Telemedicine is defined by the World Health Organization as:

*The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities.*¹²

In short, telemedicine uses information and communication technologies to overcome geographical barriers and connect users who are not in the same physical location to provide health services and improve health outcomes.¹³ Telemedicine requires 2-way video and audio conferencing. Additional technology may include handheld exam cameras with an attached otoscope and ophthalmoscope and a Bluetooth stethoscope to enable additional exam components to be performed (Fig. 3).

Specific to the context of treating opioid use disorders, telemedicine has appeal in (1) evaluating patients and making the initial diagnosis of an opioid use disorder, (2) prescribing pharmacotherapy (in particular office-based buprenorphine), (3) providing counseling services.

However, several barriers to using telemedicine to treat opioid use disorders need to be addressed before widespread implementation can occur.

Telemedicine to Treat Opioid Use Disorder in Pregnancy: A Real-life Experience

In 2018-2019, Harper et al¹⁴ received funding from the Society of Maternal-Fetal Medicine and Aetna to study the use of telemedicine to prescribe buprenorphine in pregnancy. The telemedicine program was based in the University of Alabama at Birmingham's (UAB's) Comprehensive Addiction in Pregnancy

Program (www.uab.edu/medicine/obgyn/divisions/maternal-fetal-medicine/capp-program), a multidisciplinary program composed of a Maternal-Fetal Medicine specialist with an X-waiver to prescribe buprenorphine, a dedicated social worker, a dedicated case-coordinate, a peer recovery support person, and a counselor with training in trauma-based recovery. The telemedicine grant was additionally supported by the UAB telemedicine team. The goal of the proposal was to provide telemedicine access to buprenorphine in pregnancy to women in counties with limited access to pharmacotherapy and assess the impact on perinatal outcomes (neonatal withdrawal syndrome, low birth weight, preterm birth, adequacy of prenatal care) using a difference-in-differences approach. Over the implementation period, this pilot study became a course in the barriers to providing buprenorphine therapy using telemedicine. Some of these barriers are universal to all treatment programs, and some are unique to treatment programs focused on treating pregnant women. Many of the potential solutions proposed are lessons learned not only by the author during the attempt at starting telemedicine but also from the Coronavirus Disease 2019 (COVID-19) pandemic, which led to the loosening of many restrictions on prescribing pharmacotherapy for opioid use disorders as well as reporting on creative solutions to pandemic-related restrictions on in-person visits. The potential solutions described are identified as either a systemic change (one that requires a change in government regulations) or a local solution (one that can be implemented by a group of providers or a health care system).

BARRIER #1: REQUIREMENT FOR AN IN-PERSON VISIT

Until 2020 (when emergency changes related to the COVID-19 pandemic were made), an in-person visit was required before prescribing buprenorphine. This

represented a significant barrier for the vast majority of patients that would have been eligible for the program. As described above, patients without a driver's license, access to reliable transportation, or money for gas were unable to drive keep their in-person appointments to initiate care. Most rescheduled several times before either being completely lost to follow-up or delivering without ever initiating care. Women referred to the program by another provider, either an obstetrician who did not have an X-waiver or an X-waivered provider who did not prescribe to pregnant women frequently continued using illicit opioids while awaiting her initial appointment. Unfortunately, because the research portion of the study also required in-person consent, we were unable to follow-up with patients to determine perinatal outcomes, although anecdotally many of the women who delivered before reaching their in-person appointment delivered preterm. Even with state-funded programs to provide transportation to clinic appointments for pregnant women with Medicaid, the requirement for an in-person visit was an insurmountable barrier for all but 1 patient.

Potential Solutions

- *Waiving the in-person requirement (Systemic)*: On March 31, 2020, in response to the COVID-19 pandemic, regulations requiring an in-person visit were waived.¹⁵ Since that time, there have been several case reports of successfully starting patients on buprenorphine over telemedicine consultation, including the use of a mobile health van to perform initial assessment and induction.^{16,17}
- *Bridge programs (Local)*: Bridge programs “bridge the gap” between initial presentation for care and establishing care in an opioid treatment program. These programs reach out to in particular to hospitalists and emer-

gency room physicians to train providers to screen for and initiate buprenorphine. These programs capitalize on immediate patient motivations to seek treatment and initiate pharmacotherapy. Once initiated on pharmacotherapy, patients with opioid use disorder are significantly more likely to establish care with an opioid treatment program. Once care is established in an opioid treatment program with an in-person visit, transition to telemedicine can be achieved.

- *Mobile care outreach (Local)*: When there are areas of significant need, it may be effective to send a provider to initiate care rather than send multiple patients to the same provider. This is most likely to be effective when combined with a bridge program, so that patient flow would appear thusly: Identification of pregnant woman with opioid use disorder who desires buprenorphine induction→Initiation of buprenorphine by a bridge provider (5- to 7-d prescription→In-person visit at the local facility with X-waivered provider on a scheduled day)→Transition to telemedicine with X-waivered provider.

BARRIER #2: URINE DRUG TESTS

Federal regulations of opioid treatment programs require random drug testing and a certain number of drug tests annually. States may require additional drug testing; for example, in Alabama, Medicaid required a urine drug test before filling any prescription for buprenorphine, and buprenorphine could only be prescribed in 30-day supplies. Therefore, patients had to undergo monthly urine drug tests that tested for buprenorphine, to demonstrate that the patient was actually taking the buprenorphine (rather than diverting it) and that the patient was not taking other illicit drugs. However, this requirement represented an undue burden on patients receiving buprenorphine through telemedicine. Patients presenting in the

clinic provided a urine sample at every visit, and ordering a urine drug screen that included buprenorphine is part of a routine clinical protocol within any clinic prescribing buprenorphine. However, identifying laboratory sites across the state that could send a urine drug screen that tested for buprenorphine that was accessible for patients was difficult. Some private laboratories charge patients for the urine drug test, an insurmountable financial barrier for some. We also attempted to use local obstetrician's offices to obtain urine drug test at the time of visits for routine prenatal care; however, the drug screens obtained locally frequently did not contain buprenorphine or were not communicated to the clinic (and therefore Medicaid) in a timely fashion to obtain preapproval for refills.

Potential Solution

- *Communication (Local)*: While seemingly simple, direct communication with local provider and nursing staff, including written orders for local offices, is a very direct (if sometimes time-consuming) solution. In the case of caring for a pregnant woman, telemedicine buprenorphine providers have the advantage that a pregnant woman will essentially always have a local obstetrician where she is receiving care. Communicating clearly and regularly through a telephone call (with your patient's permission), to obtain a correctly ordered urine drug test in the correct time frame, is almost always the best solution to this problem.
- *Home Saliva Tests (Local)*: Home saliva drug tests that include buprenorphine are commercially available. The advantage of a home saliva drug test is that the clinician can visualize the patient performing the test (as opposed to a urine drug test) to minimize sample tampering. Costs and reliability vary by manufacturer, but detection cutoffs

as low as 5 ng/mL are reported. The author found kits available at 10 for \$150 and 15 for \$174.99. It is important to remember that home tests can have both false positives and false negatives. If a home saliva test is used, it is important to confirm any unexpected results (eg, buprenorphine negative or positive for other illicit substances) with a laboratory-based urine drug test.

BARRIER #3: INDUCTION ON BUPRENORPHINE

While some women will present on a known and stable dose of buprenorphine, many women during pregnancy will present with active addiction and ongoing illicit opioid use. Where and how to start these patients on buprenorphine is a barrier to prescribing buprenorphine in any format. Buprenorphine inductions consist of waiting for mild to moderate withdrawal symptoms and titrating the buprenorphine dose to minimize these symptoms. A typical in-office induction consists of providing a prescription for a patient to obtain the day before, requesting the patient refrain from any opioids overnight, and presenting to the office in mild to moderate withdrawal. The first dose of buprenorphine is given and the patient is evaluated in 2 to 4 hours to reassess symptoms and titrate buprenorphine dosing. This process is repeated until adequate dosing is achieved. The patient is then discharged from the office with a set dose of buprenorphine and is evaluated in 3 to 7 days for the adequacy of dosing in achieving the goals of minimizing withdrawal symptoms and cravings. Many obstetric providers prefer to admit women for this process, particularly when beyond 24 weeks. Admission allows pharmacologic treatment of many withdrawal symptoms (hypertension, diarrhea, nausea, and vomiting), which prevents many women from leaving treatment as well as obstetric and fetal side effects from withdrawal (mainly preterm

contractions). Given theoretical concerns for nonreassuring fetal status during withdrawal, admission also enables fetal monitoring when indicated. The author never attempted a buprenorphine induction via telemedicine, given the requirement for an in-person visit before starting buprenorphine. However, with the in-person visit requirement eliminated, there are several potential solutions to this problem.

Potential Solution

- *Induction at home (Local)*: If a patient is able to obtain a buprenorphine prescription as an outpatient, and has home internet access for telemedicine assessments throughout the induction process, then performing the buprenorphine induction at home may be a reasonable option. The same procedures would be followed; however, assessment of withdrawal signs would be performed over telemedicine consultation rather than in-person. This may be preferred when a patient lives with a support person who can assist in the telemedicine appointment and management of the buprenorphine and for women early in gestation.
- *Induction at a local provider location (Local)*: If patients are presenting to a local facility for telemedicine visits, inductions may be performed at that location. Similar to your own office, you will need to plan where patients will be located between repeat assessments (waiting room, lobby) and patients will still need to obtain their own buprenorphine before induction. However, a local facility would be able to perform vital signs for you and may potentially have a nurse or medical assistant to assist with assessing physical symptoms (piloerection).
- *Induction in a local hospital (Local)*: Some patients may not be able to perform inductions at home or in the office,

either because of inability to refrain from using opioids long enough to have withdrawal symptoms or an inability to obtain outpatient buprenorphine (because of co-pay costs associated with changing prescriptions/dosages). In addition, some providers are not comfortable initiating pregnant women on buprenorphine as an outpatient, particularly later in gestation. These situations may require unique models of care. This may include an Extension for Community Healthcare Outcomes (ECHO) model, whereby a provider with expertise on buprenorphine in pregnancy may provide guidance to another local provider. A patient could have an outpatient appointment with the X-waivered provider at the “hub” location, be admitted to the local inpatient facility (“spoke” location) where her local obstetrician/psychiatrist/other physician would admit her, and consult with the X-waivered provider to perform the buprenorphine induction (provision of buprenorphine as an inpatient does not require X-waiver under certain circumstances). The X-waivered provider could either evaluate the patient via telemedicine (which may require local hospital privileges) or base recommendations on the local physician’s assessment of symptoms. The patient would then be able to leave the hospital with a prescription for buprenorphine provided by the hub, X-waivered physician, and maintained over telemedicine. ECHO models require strong infrastructure and physician relationship for a smooth transition from outpatient to inpatient back to outpatient care.

BARRIER #4: ACCESS TO COUNSELING

As part of the X-waiver, any practitioner providing buprenorphine pharmacotherapy must also be able to refer for counseling. In general, behavioral health services are a limited resource. Only 30% of zip code tabulation areas had at least one

community-based mental health treatment resource, and 30% of the US population lived in a community without any of these resources.¹⁸ Mental health treatment resources were more likely to be located in urban communities, although > 75% of rural communities with mental health resources had access to an outpatient mental health treatment facility. Assessing the concentration of mental health counselors to those available nationwide demonstrates a wide variation in the availability of services by region (Fig. 4).¹⁹

Potential Solution

- *Telemedicine can be used for counseling services too (Local):* Counseling via telehealth has been found to be effective in treating substance use disorders.^{20–22} Several facilities have recently reported on their experience with telehealth counseling during the COVID-19 pandemic. One facility found that telecounseling expanded services; the ability of counselors to work from home increased their availability in the evenings and weekends.²³ The Houston Emergency Opioid Engagement System (HEROES) reported on transitioning counselors and peer recovery support specialists to telemedicine after the COVID-19 pandemic.²⁴ Initially, counselors and peer recovery support specialists were concerned about the lack of physical contact. In their experience, leading recovery groups and interacting with clients virtually required a different skill set. In this report, virtual groups had higher attendance than in-person groups. However, in another report specific to pregnancy, virtual groups had lower attendance than in-person groups.²⁵ Telemedicine can also be used to supplement rather than supplant local counseling. In the pregnancy-specific report, a combination of virtual and

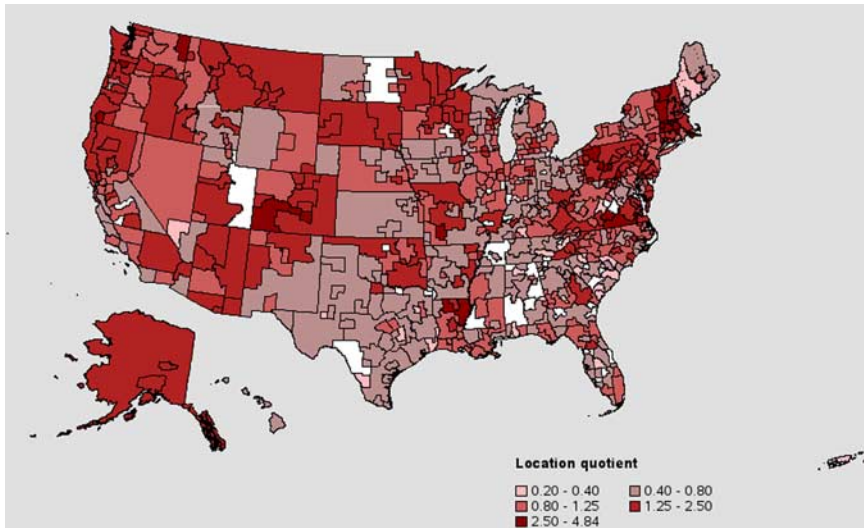


FIGURE 4. Location quotient of substance abuse, behavioral disorder, and mental health counselors by area, May 2019. Blank areas indicate data not available. From the US Bureau of Labor Statistics.¹⁹ full color online

in-person groups appeared superior to virtual alone.

- *Eliminating the need for access to counseling (Systemic):* Several studies have demonstrated that behavioral therapy in addition to buprenorphine and medical management do not increase abstinence, opioid negative urine drug tests, or decrease relapse.^{26–30} In all of these studies, patients (nonpregnant) on buprenorphine therapy were followed closely with medical management, which included in-person medical visits on a regular basis. This suggests that during pregnancy, when women are undergoing routine prenatal care, requiring counseling visits to receive buprenorphine may present more of a barrier than benefit.

BARRIER #5: LOCAL OBSTETRIC AND NEONATAL PROVIDER DISCOMFORT WITH OPIOID USE DISORDER

Local obstetric providers need to be comfortable screening for opioid use disorder, referring for treatment, and caring for women receiving treatment.

Many practitioners report that they are ill-equipped to care for women with substance use disorder. Few obstetric providers screen for opioid use disorder; in one study, only 11% report screening using a validated instrument.³¹ Lack of screening by obstetric providers results in few patients being referred for telemedicine programs. Indeed, when the author was performing outreach to local obstetric providers to educate them about the availability of a Comprehensive Addiction in Pregnancy Program (CAPP) via telemedicine, she was often told that opioid use disorder was not a problem in their area, despite documented neonatal withdrawal rates of 1% to 2% in their counties and opioid prescriptions per capita of > 1.

Second, even if the buprenorphine prescription, withdrawal symptoms, side effects, and counseling services can all be managed by telemedicine, the local obstetric provider must still be comfortable managing the patient in labor and postpartum, including pain control.

Women with opioid use disorder and those in recovery often report being denied adequate pain control due to their history. Women with opioid use disorders also need additional monitoring for postpartum depression and relapse, which may best be performed by their local obstetrician. Most physicians do not receive training in treating pregnant women with substance use disorders.³²

Local pediatricians need to be comfortable monitoring for neonatal withdrawal syndrome and caring for opioid-exposed infants. Standardized care for infants with opioid withdrawal results in shorter treatment courses and hospital stays.^{33,34} In addition, local providers (both pediatricians and obstetricians) should be familiar with nonpharmacologic methods of reducing the risk of neonatal withdrawal including rooming-in, breastfeeding, and swaddling.

While the UAB CAPP routinely addressed these issues in a multidisciplinary manner (including consultations with anesthesiology and neonatology in the course of routine prenatal care), these components may easily be missed when providing opioid use disorder treatment via telemedicine.

Potential Solution

- *Communication (Local)*: Once again, communicating clearly with local providers is key. Thorough consultation notes with specific recommendations (including using regional anesthesia, avoiding nalbuphine or butorphanol (which can precipitate withdrawal), and how to use multimodal pain management strategies and methods of preventing neonatal withdrawal) as well as one-on-one conversations with obstetric and pediatric providers will dispel many myths regarding caring for pregnant women with opioid use disorders and substantially improve patient care. Although this can be a time-consuming and even arduous

experience, building these relationships can improve not just the outcome for 1 patient but of that providers future patients as well.

- *ECHO Models (Local)*: A multidisciplinary ECHO model, whereby experts at the hub location provide advice and guidance to providers at the spoke model, can be an effective method of providing care via telemedicine. This need not occur only in a formal setting but can be a care conference arranged including pertinent providers for a single patient.

BARRIER #6: STIGMA

Stigma is a significant barrier to providing care to pregnant women with opioid use disorder, in-person or via telemedicine. Theoretically, telemedicine should reduce stigma. Patients can access treatment for their opioid use disorder in their own home, without having to present (visibly pregnant, no less) to an Addiction Clinic. However, pregnant women must still seek care for their pregnancy. Some women will have to present to a telehealth location rather than access care from home, particularly if they do not have a smartphone or if they do not have internet access in their home.

In these situations, a pregnant woman may perceive stigma from the local providers (obstetrician, pediatrician, hospital, and associated staff), from the location where the telemedicine equipment is located (health department or hospital). Stigma may even be perceived from the telemedicine provider; either because the provider is not specially trained in obstetric-related issues or due to limitations of technology (frustration with the platform, inability to see body language, etc.). Stigma not only prevents women from admitting to substance use and seeking treatment; patients may drop out of treatment when they perceive stigma.^{35,36} While a dedicated program

like the UAB CAPP sought to reduce stigma by providing dedicated personnel and a “safe space” for women to talk about their substance use disorders, telemedicine may not be able to supplant this safe space. As pregnant women will still need to seek care at local offices for pregnancy-related issues, they may still face stigma at these locations.

Potential Solution

- *Communication and language (Local)*: When communicating with local providers, the language used to discuss patient care is important. Avoiding stigmatizing phrases and modeling appropriate language can alter local provider languages and practices.
- *Education (Local)*: The majority of states now require opioid-related CME. Hub locations can consider offering CME credits for spoke sites to educate providers and staff on the impact of stigma and perceived stigma on pregnant women seeking and receiving treatment for opioid use disorder.

BARRIER #7: TRANSITION OF CARE POSTPARTUM

The issue of how to continue pharmacotherapy after delivery is not an issue unique to telemedicine but was an insurmountable barrier for the UAB Telemedicine CAPP. Continuation of pharmacotherapy after delivery is typically an issue when Medicaid is discontinued 6 weeks after delivery or if the mother does not retain custody of the baby. Even when women are able to stay on Medicaid after delivery, if the obstetrician was providing buprenorphine therapy, it may be necessary to transition to another provider after delivery, as obstetricians typically prescribe buprenorphine for the length of the pregnancy only.

At the outset of the telemedicine program, the team performed outreach

to several mental health facilities outside of Birmingham that provided inpatient and outpatient care to pregnant women with opioid use disorders but that had no pharmacotherapy program due to lack of provider access. We discussed providing telemedicine support for pharmacotherapy after an in-person visit for the length of the pregnancy and postpartum, and then transitioning to a new telemedicine provider after delivery (so that the CAPP providers could continue accepting new pregnant patients) versus tapering after delivery. However, the directors of the mental health facilities were unwilling to start patients on therapy during pregnancy that may not be available to them postpartum and were thus not willing to participate in the telemedicine program.

Potential Solutions

- *Increase the number of X-waivered providers at the hub program (Local)*: Once a program is established, it is typically easier to get additional providers X-waivered than to build capacity at a spoke site. Having multiple X-waivered providers at the hub program increases the capacity of the hub program to continue care after pregnancy without diminishing the ability to care for patients during pregnancy.
- *Establish a telemedicine program for opioid use disorder postpartum and outside of pregnancy (Local)*: Again, once one X-waivered provider exists at an institution, getting additional X-waivered providers is significantly easier. Working with internists, psychiatry, or Addiction Medicine to build a telemedicine program to transition patients after delivery is an effective method of caring for patients postpartum. This program would also need to develop a method to see patients at least once in-person after delivery to establish care.

- *Identification of free sources or low-cost sources of buprenorphine (Local):* Even when providers are available to provide buprenorphine, many patients after delivery will not be able to afford buprenorphine if they lose their insurance. Identifying free and low-cost sources of buprenorphine for these women is critical. Many grant programs exist to provide low-cost pharmacotherapy to uninsured and underinsured patients. Working with local social workers, case managers, Department of Family Services, and Addiction Medicine specialists was critical to the UAB CAPP for identifying patient resources.

BARRIER #8: ACCESS TO TELEMEDICINE EQUIPMENT AND INTERNET

During the UAB Telemedicine CAPP Pilot, remote visits were accomplished using the Alabama Department of Public Health. Patients presented to a local, telemedicine-equipped health department where basic check-in functions were performed (vital signs, urine dip, fetal heart tones) and the telemedicine visit was conducted with the patient in the office. This path was chosen to facilitate checking vital signs and also to eliminate financial barriers to accessing care like having a smartphone and internet service. However, not every health department in Alabama had telemedicine capabilities at the time. Of the 67 counties in Alabama, 26 had active telehealth sites when the telemedicine program started and 33 had sites planned telemedicine capability within 6 months. However, 6 counties did not have internet bandwidth that was ready for telehealth. Several of the participants in our in-person program would have been candidates for the telehealth program but lived in a county without a telehealth site.

An alternative to this procedure would be to allow patients to use a Health Insurance Portability and Accountability Act (HIPAA)-compliant application on a smartphone. As of 2019, over 80% of Americans owned a smartphone, although this number falls to 65% to 70% for those with less than high school education, <\$30,000 annual income, and in rural areas.³⁷ Similarly, although 90% of American adults use the internet, home internet access decreases significantly in certain demographic groups.³⁸ For those with an annual income of <\$30,000, only 56% have home internet access, and only 46% of those with less than high school education. Only 63% of those living in a rural community have home internet access. In reports of transition to telemedicine only during the COVID-19 pandemic, common reasons cited for not attending virtual counseling sessions included lack of access to technology, unreliable internet connection, and poor digital literacy.²⁵

Potential Solutions: Access at local hospitals, expanded access at health departments.

- *Resource building at local hospitals, health departments, and community centers (Local and Systemic):* Partnering with local communities to develop telemedicine sites (which at a minimum requires internet access, camera, and audio) will increase the accessibility of telemedicine for patients most in need. Several system-wide efforts may be necessary to accomplish this: the ability of the local site to bill insurance for the telemedicine visit and grants to build telemedicine capacity will aid in developing local capacity. Local efforts are needed to cultivate the relationships, develop protocols for caring for patients, and maintaining 2-way communication between hub-and-spoke providers to provide integrated care for the whole person.

It Can Work! Successful Pharmacotherapy Telemedicine Program in Pregnancy

In 2020, Guille et al³⁹ reported on a successful telemedicine program in pregnancy that treated women in 2017-2018. In this program, 98 women were evaluated and 44 received telemedicine treatment, while 54 received in-person treatment. Discontinuation rates and loss-to-follow-up were similar in each group. All patients initiated care with an in-person visit to initiate buprenorphine and were treated with the same treatment protocol. Groups were similar with regards to age, ethnicity, race, gestational age entry, type of opioid use, length of opioid use, education level, and income. The primary outcome of the study was treatment retention: 93% in the telemedicine group and 89% in the in-person group continued treatment in the program. In addition, groups were similar with regards to the incidence of neonatal withdrawal syndrome and positive urine drug tests at delivery. This study demonstrates that once the barrier of initiating treatment with an in-person visit during pregnancy can be overcome, and telemedicine access is available, pregnant women with opioid use disorder can successfully receive buprenorphine therapy over telemedicine consultation.

In sum, telemedicine can increase access to care for pregnant women with opioid use disorders; however, telemedicine is more than just a phone call to a patient. The goal of telemedicine is, in essence, to create a clinic where provider and patient can be in separate locations. Thus, all the components of the clinic need to be provided by telemedicine, from making the appointment, performing the visit, obtaining labs, and arranging follow-up. A single X-waivered physician does not create a telemedicine program and does not supplant creating a local

infrastructure; indeed, telemedicine programs require infrastructure building to be successful. Thoughtful development of this infrastructure can create a successful telehealth program to increase access to pharmacotherapy during pregnancy and beyond.

References

1. Sordo L, Barrio G, Bravo MJ, et al. Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. *BMJ*. 2017;357:j1550.
2. Connaughton JF, Reeser D, Schut J, et al. Perinatal addiction: outcome and management. *Am J Obstet Gynecol*. 1977;129:679–686.
3. Goler NC, Armstrong MA, Taillac CJ, et al. Substance abuse treatment linked with prenatal visits improves perinatal outcomes: a new standard. *J Perinatol*. 2008;28:597–603.
4. Institute of Medicine. *Federal Regulation of Methadone Treatment*. Washington, DC: The National Academies Press; 1995.
5. Substance Abuse and Mental Health Services Administration. *Federal Guidelines for Opioid Treatment Programs*. Rockville, MD: Substance Abuse and Mental Health Services Administration (HHS Publication No. PEP15-FEDGUIDETOOTP); 2015.
6. Grimm CA. Geographic disparities affect access to buprenorphine services for opioid use disorder. US Department of Health and Human Services Office of Inspector General; 2020.
7. Haffajee RL, Lin LA, Bohnert ASB, et al. Characteristics of US counties with high opioid overdose mortality and low capacity to deliver medications for opioid use disorder. *JAMA Netw Open*. 2019;2:e196373.
8. Jones CM, McCance-Katz EF. Characteristics and prescribing practices of clinicians recently waived to prescribe buprenorphine for the treatment of opioid use disorder. *Addiction*. 2019;114:471–482.
9. Bedrick BS, O'Donnell C, Marx CM, et al. Barriers to accessing opioid agonist therapy in pregnancy. *Am J Obstet Gynecol MFM*. 2020;2:100225.
10. Nguemeni Tiako MJ, Culhane J, South E, et al. Prevalence and geographic distribution of obstetrician-gynecologists who treat medicaid enrollees and are trained to prescribe buprenorphine. *JAMA Netw Open*. 2020;3:e2029043.
11. Sigmon SC. Access to treatment for opioid dependence in rural America: challenges and future directions. *JAMA Psychiatry*. 2014;71:359–360.

12. WHO Group Consultation on Health Telematics. *A Health Telematics Policy in Support of WHO's Health-for-all Strategy for Global Health Development: Report of the WHO Group Consultation on Health Telematics, December 11-16, 1997, Geneva, Switzerland*. Geneva, Switzerland: World Health Organization; 1998.
13. World Health Organization. *Telemedicine: Opportunities and Developments in Member States: Report on the Second Global Survey on eHealth*. Geneva, Switzerland: World Health Organization; 2010.
14. Harper LM, Wetta L, Wingate M, et al. Telemedicine to provide opioid agonist therapy in pregnancy: a difference in differences approach. Funded by Society of Maternal-Fetal Medicine Aetna Health Policy Grant; 2019.
15. Diversion Control Division. COVID-19 Information Page; 2021. Available at: <https://deadiversion.usdoj.gov/coronavirus.html>. Accessed February 22, 2021.
16. Harris M, Johnson S, Mackin S, et al. Low barrier tele-buprenorphine in the time of COVID-19: a case report. *J Addict Med*. 2020;14:e136–e138.
17. Leo P, Gastala N, Fleurimont J, et al. A community partnership to improve access to buprenorphine in a homeless population. *Ann Fam Med*. 2021;19:85.
18. Cummings JR, Allen L, Clennon J, et al. Geographic access to specialty mental health care across high- and low-income US communities. *JAMA Psychiatry*. 2017;74:476–484.
19. US Bureau of Labor Statistics. Occupational Employment Statistics; 2019. Available at: www.bls.gov/oes/current/oes211018.htm. Accessed February 22, 2021.
20. Eibl JK, Gauthier G, Pellegrini D, et al. The effectiveness of telemedicine-delivered opioid agonist therapy in a supervised clinical setting. *Drug Alcohol Depend*. 2017;176:133–138.
21. Gros DF, Morland LA, Greene CJ, et al. Delivery of evidence-based psychotherapy via video telehealth. *J Psychopathol Behav Assess*. 2013;35:506–521.
22. Zheng W, Nickasch M, Lander L, et al. Treatment outcome comparison between telepsychiatry and face-to-face buprenorphine medication-assisted treatment for opioid use disorder: a 2-year retrospective data analysis. *J Addict Med*. 2017;11:138–144.
23. Hughto JMW, Peterson L, Perry NS, et al. The provision of counseling to patients receiving medications for opioid use disorder: telehealth innovations and challenges in the age of COVID-19. *J Subst Abuse Treat*. 2021;120:108163.
24. Langabeer JR II, Yatsco A, Champagne-Langabeer T. Telehealth sustains patient engagement in OUD treatment during COVID-19. *J Subst Abuse Treat*. 2021;122:108215.
25. McKiever ME, Cleary EM, Schmauder T, et al. Unintended consequences of the transition to telehealth for pregnancies complicated by opioid use disorder during the coronavirus disease 2019 pandemic. *Am J Obstet Gynecol*. 2020;223:770–772.
26. Carroll KM, Weiss RD. The role of behavioral interventions in buprenorphine maintenance treatment: a review. *Am J Psychiatry*. 2017;174:738–747.
27. Fiellin DA, Barry DT, Sullivan LE, et al. A randomized trial of cognitive behavioral therapy in primary care-based buprenorphine. *Am J Med*. 2013;126:e11–e17.
28. Fiellin DA, Pantalon MV, Chawarski MC, et al. Counseling plus buprenorphine-naloxone maintenance therapy for opioid dependence. *N Eng J Med*. 2006;355:365–374.
29. Ling W, Hillhouse M, Ang A, et al. Comparison of behavioral treatment conditions in buprenorphine maintenance. *Addiction*. 2013;108:1788–1798.
30. Weiss RD, Potter JS, Fiellin DA, et al. Adjunctive counseling during brief and extended buprenorphine-naloxone treatment for prescription opioid dependence: a 2-phase randomized controlled trial. *Arch Gen Psychiatry*. 2011;68:1238–1246.
31. Ko JY, Tong VT, Haight SC, et al. Obstetrician-gynecologists' practices and attitudes on substance use screening during pregnancy. *J Perinatol*. 2020;40:422–432.
32. Albright B, Skipper B, Riley S, et al. Medical students' comfort with pregnant women with substance-use disorders: a randomized educational study. *Acad Psychiatry*. 2012;36:457–460.
33. Hall ES, Wexelblatt SL, Crowley M, et al. A multicenter cohort study of treatments and hospital outcomes in neonatal abstinence syndrome. *Pediatrics*. 2014;134:e527–e534.
34. Patrick SW, Schumacher RE, Horbar JD, et al. Improving care for neonatal abstinence syndrome. *Pediatrics*. 2016;137:e20153835.
35. Crapanzano KA, Hammarlund R, Ahmad B, et al. The association between perceived stigma and substance use disorder treatment outcomes: a review. *Subst Abuse Rehabil*. 2018;10:1–12.
36. Corse SJ, McHugh MK, Gordon SM. Enhancing provider effectiveness in treating pregnant women with addictions. *J Subst Abuse Treat*. 1995;12:3–12.
37. Pew Research Center. Mobile Fact Sheet; 2019. Available at: www.pewresearch.org/internet/fact-sheet/mobile/. Accessed August 18, 2020.
38. Pew Research Center. Internet/Broadband Fact Sheet; 2019. Available at: www.pewresearch.org/internet/fact-sheet/internet-broadband/. Accessed February 21, 2021.
39. Guille C, Simpson AN, Douglas E, et al. Treatment of opioid use disorder in pregnant women via telemedicine: a nonrandomized controlled trial. *JAMA Netw Open*. 2020;3:e1920177.