



The top of Church Street Market Place in Burlington, Vermont. | Kainaz Amaria/Vox

I looked for a state that's taken the opioid epidemic seriously. I found Vermont.

Vermont declared an emergency over the opioid crisis — and actually did something about it.

By German Lopez | @germanlopez | german.lopez@vox.com | Updated Oct 31, 2017, 2:55pm EDT

Photography by Kainaz Amaria | Illustrations by Javier Zarracina

BURLINGTON, Vermont — A group of more than a dozen addiction care providers gathered at a community health center one morning in September for their monthly meeting, where they chatted about their latest thorny problem.

One of their patients had vanished. Again.

The missing man, a 28-year-old whom I'll call Tyler, was never an easy patient. On and off, he had used two to eight bags of heroin each day for the past seven years. He was strongly resistant to **medication-assisted treatment** (MAT), in which patients use medications such as methadone or buprenorphine to stave off withdrawals and reduce cravings — widely considered the gold standard for opioid addiction care.

He also declined medications to treat the anxiety that had haunted him for much of his adult life, apparently due to concerns about sexual side effects. "It's a big problem among the men," one woman said. The others nodded in agreement.



Church Street in downtown Burlington. | Kainaz Amaria/Vox

This was the fifth time Tyler had come into treatment, and it was the fifth time he had abruptly dropped out. This time, he reported problems getting stable housing and employment. He was put on buprenorphine to treat his addiction and sertraline for his anxiety. But on his own volition, he tapered to a lower dose of buprenorphine and stopped taking the sertraline entirely. Then he relapsed — as is common among people struggling with addiction, especially when they get off medication. Although he scheduled follow-up appointments, he never showed and didn't respond to calls.

As America's **opioid epidemic** has spread and worsened, this kind of case has become increasingly common — but not one with easy solutions.

"What can we do?" the woman who brought the case study asked the group.

The discussion was lively. But there was no judgment; the group's members were here not to criticize, but to figure out a way to help their patient should he reconnect with them. The big question was figuring out how to overcome the physical and mental hurdles in front of Tyler.

"It really is a dance," one person remarked on figuring this all out.

Should they use evidence-based motivational interviewing techniques to retain Tyler? Should they help him set new goals for his recovery? Would art therapy speak more to his interests? Is there a way to overcome the stigma that led him to push away MAT? Could they find other ways to treat his anxiety? Are programs available to connect him to housing and jobs? Or how about suggesting that if he keeps dropping off, they'll have to start recommending him to more intensive treatment settings?

It's all about reaching the patients who, as one attendee put it, "are sick and tired of being sick and tired, but not sick and tired of being high."

These professionals are at ground zero for Vermont's relatively new addiction treatment program, which is unique in its comprehensiveness. Their holistic approach to Tyler's case is emblematic of Vermont's strategy as a whole: a focus on the science and research, with a desire to get everyone — even patients who can prove to be very difficult — in treatment to save their lives.

It's a time-consuming effort, but one that providers in the state enthusiastically participate in to push back against the deadliest overdose crisis in US history. This is, after all, a crisis that led to **more than 64,000 drug overdose deaths** nationwide in 2016. Opioid overdoses alone could kill **as many as 650,000** — or more people than live in Vermont today — across the US in the next decade.

Tyler's story shows big challenges remain, but Vermont's effort appears to be working. According to figures from the **Centers for Disease Control and Prevention (CDC)**, the drug overdose death rate for New England was about 24.6 per 100,000 people in 2015 (the latest year of state-by-state data available), which was the highest for any region in the country. Yet Vermont was not only below the regional average at 15.8, but below even the national average of 16.3 — a fact that some people on the ground attribute in part to the state's unique system, known as the hub and spoke.

The hub and the spoke

In 2009, John Brooklyn, a family doctor and addiction specialist in Vermont, realized there was a problem. The state had a lot of doctors able to prescribe buprenorphine, but many of them didn't have the proper training or support to deal with the rising tide of addiction.

So Brooklyn and several others, all of whom came from health care, the addiction field, or the state government, in 2011 began working on an idea to provide a more comprehensive response to the opioid crisis, drawing up plans to launch a pilot program in Burlington and eventually expand statewide.



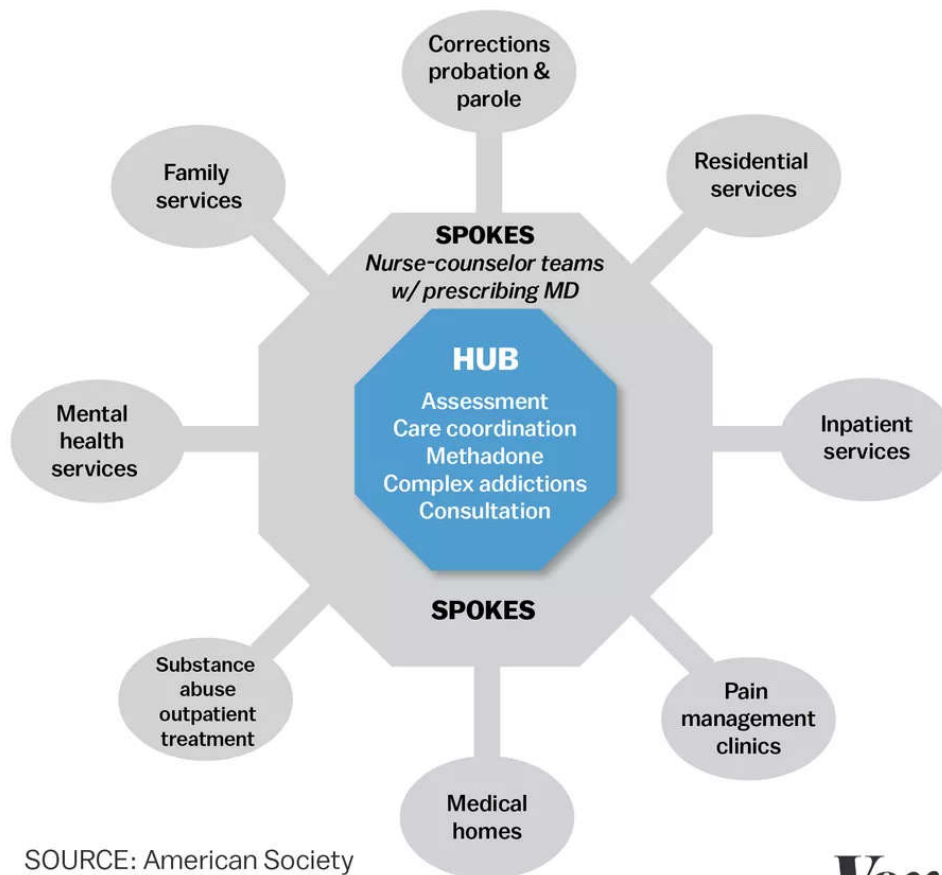
John Brooklyn (center) holds a weekly staff meeting to discuss cases with administrative, lab, nursing, counseling, and medical staff at the Chittenden Clinic, a "hub" in his "hub and spoke" model. The clinic has 770 registered locals and serves approximately 350 people a day seeking treatment for opioid use disorder. | Kainaz Amaria/Vox

The program they came up with is modeled after the rest of the health care system. "The parallel universe would be cardiology or infectious disease, where if you get sick and your primary care doc can't take care of you, you'd get referred to a cardiologist," Brooklyn told me. "The nexus of this was really to try to integrate substance use treatment in primary care," he added. That way, "if [a doctor] had a patient that they didn't really know what to do with, they could refer them to someone like myself who's board-certified in addiction medicine."

Imagine someone who has just been diagnosed with cancer. At first, they might go through a very intensive treatment — say, chemotherapy or surgery — that will require weekly or even

daily trips to the doctor. But once they enter remission, they'll go into a less intensive program — they'll still get regular check-ups and medications, but they likely won't need to drop by the doctor's office quite as often as before.

The hub and spoke model



Under Vermont's approach to opioid addiction, the hub is the place where someone gets the intensive treatment. So someone has to come in daily to at least get their medication — typically methadone or buprenorphine (but also naltrexone in some cases). If they need more, some other services are provided, recommended, or even required, including therapy and access to a social worker. (As patients are stabilized over time, they can also earn some leeway, such as the ability to take home extra doses of medication or check in remotely instead of having to come in once a day.)

The spoke is where someone gets their follow-up care. So a patient will continue to get their medication as necessary, as well as access to therapy and other resources. But they'll only have to come in on a weekly, monthly, or even less frequent basis — instead of the daily regimen they started under.



The Community Health Centers of Burlington are "spokes" in Brooklyn's model. Here, a team of doctors, nurses, physicians assistants, unit secretaries, and medical assistants collaborate to provide continued care. Currently, this center has more than 350 patients seeking treatment for opioid use disorder. | Kainaz Amaria/Vox

This is how it works in theory; in practice, it can be a bit messier. Some patients start at spokes, while others will regress in their recovery and end up in a hub again. Since Vermont is a rural state, there are also exceptions made to let some patients check in by video or phone instead of in-person. I also heard a few reports of patients being kept at the hub level for too long instead of being referred to spokes once they got better, and spoke doctors dropping patients when they relapsed — neither of which is supposed to happen, according to Brooklyn.

But generally, the system provides a referral point for providers who have complicated patients struggling with addiction.

The model took shape in the real world after the legislature authorized it in 2012, with strong support from then-Gov. Peter Shumlin (D). Now there are six hubs in 10 locations and dozens of spokes spread out across the state.

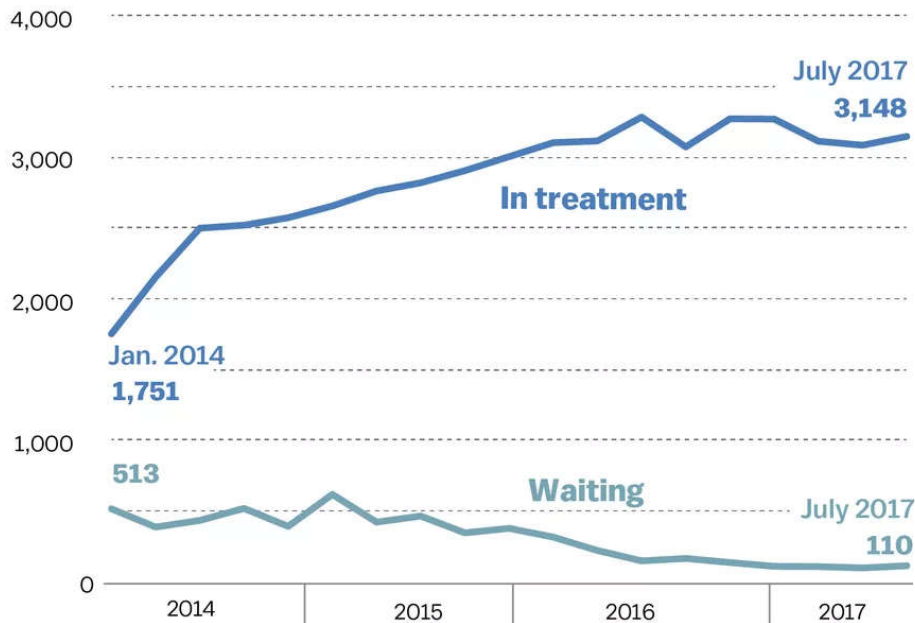
The Affordable Care Act ("Obamacare"), passed in 2010, was crucial for all of this. The law included a special Medicaid waiver that Vermont obtained to help subsidize the hub and spoke model. In the ensuing years, Obamacare also shifted the costs of insurance to the federal government — as more Vermonters got on Obamacare's marketplaces and Medicaid expansion instead of the low-income health insurance plans that the state **previously provided on its own**. As a result, Medicaid alone now pays for most of the expenses incurred by the system's more than 8,000 opioid addiction patients, each of whom costs on average **nearly \$16,600 a year**.

The cost relief is obviously good news for Vermont, but it also means other cash-strapped states could adopt Vermont's hub and spoke model by leveraging Obamacare's insurance expansion and applying for the same Medicaid waiver. The program really could be a national model for combating the opioid epidemic.

Other places are paying attention. A similar model is now **in place in British Columbia, Canada**, which is suffering from its own opioid epidemic and has become a hotbed for innovative approaches (including **prescription heroin**). Some states, such as **California** and **Washington**, are reportedly considering the concept.

But Vermont has actually homed in on this model and executed it over the past few years. **As of September**, all hubs have eliminated serious wait times — meaning a patient can now get into treatment within days of signing up. This is a tremendous contrast to Vermont's neighbor, New Hampshire, or even much of the country, where it's not uncommon for people to wait weeks or months for an appointment — a huge risk, given that the next time someone uses an opioid could very well be the last.

Vermont hubs: number of people in treatment and on waiting lists



SOURCE: Vermont Department of Health

Vox

This was achieved, in part, through establishing flexibility between hubs and spokes, particularly by letting people start at spokes if they seem to be at a more manageable stage of addiction. This kind of adaptability, Brooklyn said, is key to making it all work.

The outside experts and advocates I contacted had a lot of praise for Vermont's model. Tom Hill, vice president of addiction and recovery at the National Council for Behavioral Health, called Vermont "visionary." In his view, the state would likely be much worse off if it weren't for the hub and spoke system. "They really should be applauded," he said.

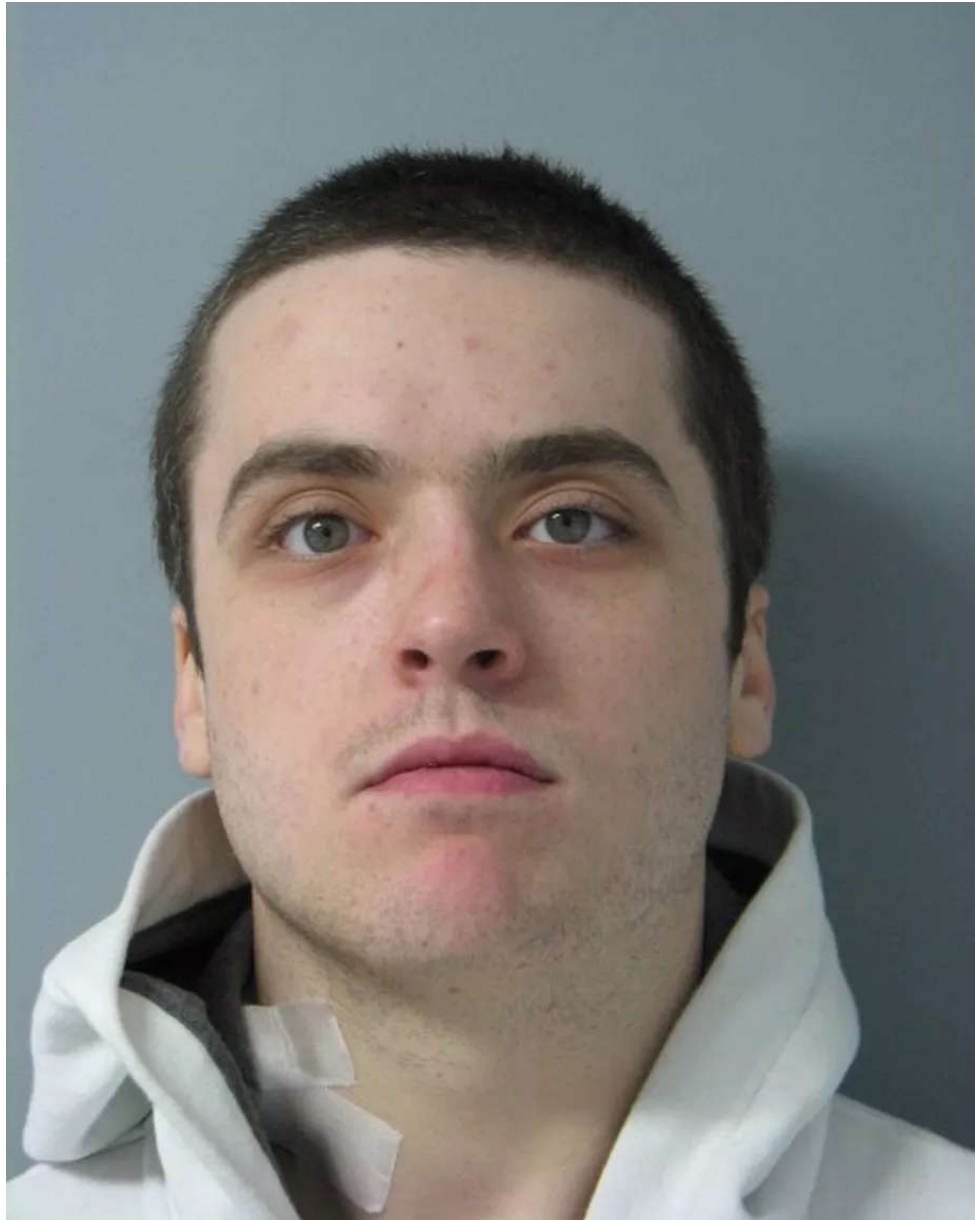
A patient's success story

One of Brooklyn's patients, Charlie C. of South Burlington (who did not want his full name used), is clear: Without the hub and spoke program, he wouldn't be where he is today. "It's amazing," he said. "It saved my life. I believe that, 100 percent."

Charlie credits his success to a signature feature of Vermont's system: its embrace of MAT.

During his freshman year of college, Charlie, who's now 24, hurt his knee while playing hockey. He was prescribed opioid painkillers. His story follows a path that's now familiar in the current drug crisis: "I get prescribed this medication. Obviously, as one self-progresses, you think, 'Oh, you're the man. I'm the athlete. I'm never going to be a drug addict.' One thing leads to another, and next thing you know I'm doing heroin."

Things got bad. At one point, Charlie was thrown in jail for depositing fraudulent checks to try to get money to buy drugs. He was homeless, "sleeping at the airport during wintertime." He was jobless. His three stints in traditional rehab each fell short.



A mug shot of Charlie C. in the winter of 2013. He said in describing the image, "I had just overdosed in a bathroom, almost costing me my life." | Courtesy of Charlie C.

Charlie was skeptical of Vermont's system, mostly because he was skeptical of MAT. He didn't like the idea of using a medication — especially an opioid like buprenorphine — to combat his opioid addiction. To him, that did not seem like an improvement. "It's just the same," he said he thought at the time. It felt like replacing one opioid with another.

This is a popular misconception, but it misunderstands how addiction works. The problem with addiction isn't necessarily drug use. Most Americans, after all, use all kinds of drugs — caffeine, alcohol, medication — with few problems. The problem is when that drug use begins to hurt someone's day-to-day function — by, say, putting his health at risk or leading him to steal or commit other crimes to get heroin. MAT lets people with drug addiction get a handle on their drug use without such negative outcomes, effectively stabilizing the dangers of addiction, even if it needs to be taken indefinitely.

It works. Studies, including systematic reviews of the research, have found that MAT cuts all-cause mortality among opioid addiction patients by **half** or **more**. The **CDC**, the **National Institute on Drug Abuse**, and the **World Health Organization** acknowledge its medical value. That doesn't mean it's for everyone (**it's not**), but there's enough evidence that experts generally consider it the gold standard of opioid addiction care.

In Charlie's telling, getting into a hub and on buprenorphine was the first crucial step he needed to take control of his life. By averting the withdrawal that he characterized as "the sickness" and is often described as a mix of the worst imaginable flu, a horrible stomach bug, and hyper anxiety, he was able to put the pieces of his life back together.

Charlie went from unemployed and homeless to being the lead account executive at a merchant services firm. He has a girlfriend, friends, two dogs, and a condo. He's now able to take care of his dad, who is terminally ill, and his mom, who struggles with alcohol addiction. This stability, social support, and feeling of purpose, Charlie said, have made his life full — a sense that he relied on heroin for in the past.



Charlie C. with his girlfriend at a wedding earlier this month near Stowe, Vermont. | Courtesy of Charlie C.

"You find out who you are," Charlie said. "Now we can start Charlie's life. Now we can find out who Charlie is now that he's off drugs and we have some support emotionally, physically, and psychologically."

In the early 2000s, the state didn't have any MAT programs to speak of — not even a methadone clinic **until 2002**. Now the state's primary addiction treatment network is built on MAT, with the understanding that addiction, just like any other disease, may require medications to treat.

This took a concerted effort to accomplish. For one, there are regulatory hurdles that make it hard for health care providers to prescribe buprenorphine: Under federal law, doctors or nurse practitioners need a special federal waiver to prescribe it, with additional requirements as providers get more patients.

But even beyond federal law, Vermont realized that there was another problem with getting more providers on board with MAT. Providers often felt they lacked the training and staff to handle more patients with addiction, who often have complex problems and, as a result, can be time-consuming.

"There have been, for a while, opioid treatment programs," Dana Poverman, director of outpatient and MAT programs at the Howard Center in Burlington, told me. What Vermont has been able to do, Poverman explained, is leverage federal Medicaid dollars to expand these programs in a much more comprehensive manner. Before, there were a lot of physicians in the state who technically could prescribe, say, buprenorphine, "but they didn't have the support around them to be able to engage in best practices."

Vermont offers providers what it calls MAT teams. These teams — of one nurse and one behavioralist — handle the extra workload that comes with an addiction patient, while the doctor or nurse practitioner can focus on treating the condition itself.

Heather Stein, a primary care doctor at the Community Health Center in Burlington, said this change alone made a huge difference in her practice. Before, she felt she couldn't take more patients, "because I felt like there were so many i's I had to dot and t's I had to cross in every office visit." But now her MAT team calls the patients, makes sure they're seeing a therapist, and gets them to come in for pill counts. "All I'm really having to address is their medical symptoms and their medical issues," she said. "It made me able to take on a larger panel of patients."



Dr. Heather Stein (right) works with nurses, social workers, physician assistants, and unit secretaries to treat patients with opioid use disorder. | Kainaz Amaria/Vox

MAT teams also came with other efforts to get more providers prescribing medications for opioid addiction. The state, for example, partnered with the University of Vermont Medical Center to help train more providers so they know how and when to prescribe buprenorphine. "There was real, real political pressure to say you've got to do something about this," Brooklyn said.

That doesn't mean Vermont sees MAT as the *only* answer to the opioid epidemic. "We believe that treating addiction is more than just relieving symptoms," Poverman said. "It's about getting your life back. It's about recovery, and becoming who you want to be [and] who you can be." (Still, the **research** indicates that in a general population, buprenorphine itself does the bulk of the work, and additional counseling services only have a slight, if any, effect. But different individuals can have different experiences.)

Charlie, for one, leveraged counseling services within the hub and spoke system to get better. But he emphasized again and again that he couldn't have done it without MAT, describing his

progress in near disbelief: "It's crazy, man. It's absolutely crazy."

A journey to normal

Vermont wasn't always heading down the right road. On January 2014, then-Gov. Shumlin issued a grim warning. "In every corner of our state, heroin and opiate drug addiction threatens us," he **said** during his state of the state speech, declaring a state of emergency over opioids.

Shumlin was one of the first governors to draw serious attention to the crisis, making **national headlines** for his dire declaration. Burlington Mayor Miro Weinberger, for one, told me that he credited the speech for spurring local governments to action.

Shumlin, who was previously involved in efforts to boost drug addiction treatment, helped scale up the hub and spoke model as Vermont's main response to the opioid crisis. This came with **new rules for prescribing opioid painkillers, more access** to the opioid overdose antidote **naloxone**, and **the expansion** of its **syringe services program** (colloquially known as "**needle exchanges**").

Above all, the focus was on treating Vermont's opioid epidemic as a public health crisis.



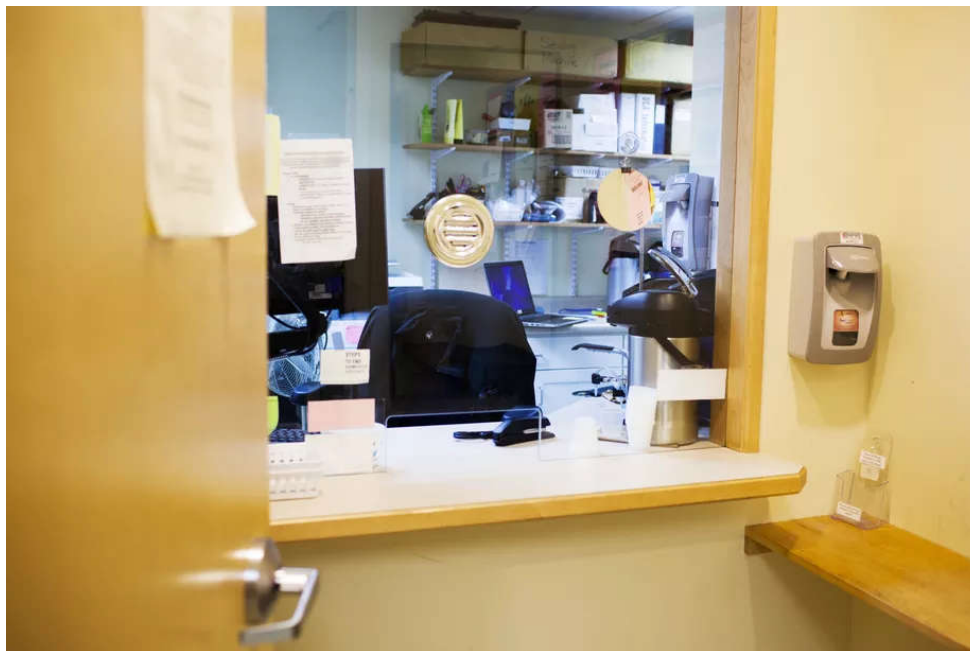
The local government is working alongside health care providers and the state government, with additional federal aid, to foster a comprehensive response to the opioid epidemic. | Kainaz Amaria/Vox

During my visit to Vermont, it showed: The hubs and spokes really do mimic much of the health care system. The waiting rooms are filled with signs about vaccines, maternity care, quitting smoking, and other health issues. Patients chat about their jobs, hobbies, families, and kids while they wait. Nurses call people in, and doctors greet them to see what's going on. It's all very typical — except, of course, for the fact that these are unusually accessible places for addiction medicine.

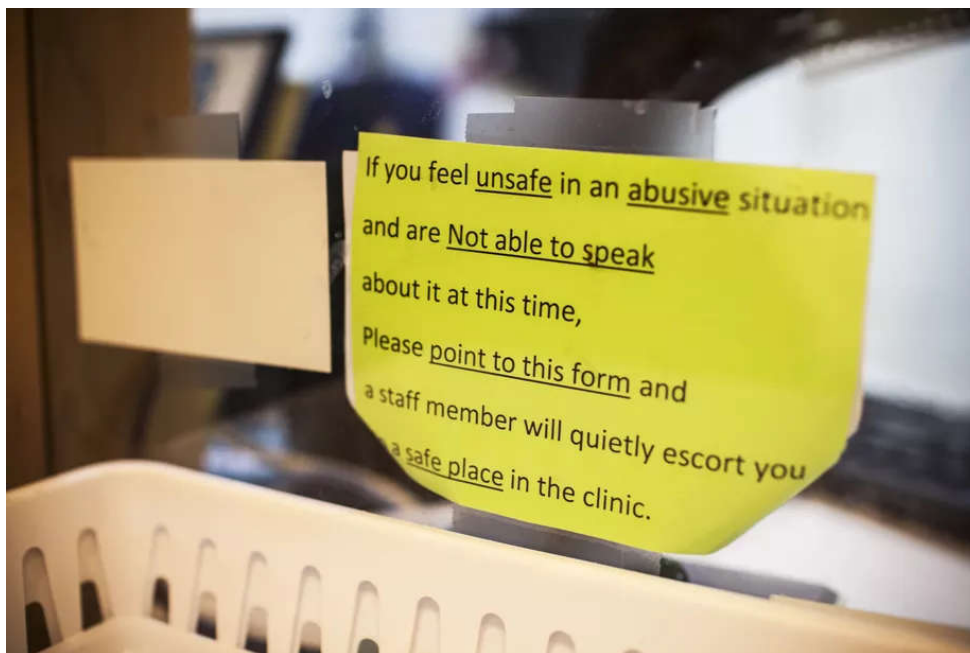
This isn't just about aesthetics. It also demonstrates the one thing underpinning the whole system: Vermont has moved to treat addiction as a disease, not a moral failure. Brooklyn emphasized that getting more major players across the state around this understanding has been crucial — even more so than lining up the right money.

"It's now 14 years after buprenorphine's been approved [by the Food and Drug Administration], and you still have an awful lot of docs — you even have **our [former] secretary of health and human services** — who [say] medication-assisted treatment is just

a crutch,” Brooklyn said. That hurdle has to be overcome, he explained, to convince policymakers to accept even the best, most evidence-based ideas for addiction care.



A dosing room at the Chittenden Clinic. | Kainaz Amaria/Vox



A sign inside the dosing room to help those who could be dealing with domestic violence. | Kainaz Amaria/Vox

Brooklyn is very passionate about this issue. He said that he actually had no personal connection to addiction before he got engaged in this work, which is rare in the field. But he has become a crusader for treating addiction primarily as a medical — instead of moral — problem. “I don’t want to punish somebody,” he said. “I want to try to educate them and help them make a different choice that may be healthier in the long run.”

Other health care providers in Vermont share that view. Deborah Richter, an addiction medicine doctor in Burlington, draws comparisons to other illnesses in describing her day-to-day work. She gave the example of a patient who is struggling to get their drug use under control, even after receiving medication like buprenorphine or methadone.

"That's sort of the nature of any chronic disease," she said. "Happens with diabetics. Gain, lose weight. Follow their sugars, don't follow their sugars. Not unlike that. So it's something to be expected." She added, "That's really where society has to change [its] attitude about addiction — is recognizing it's not like pneumonia, where you can take an antibiotic for 10 days and you're all better."

Vermont has truly embraced this kind of perspective. It's worked so well that it's now bipartisan: In June, the new Republican governor, Phil Scott, celebrated the **opening of a new hub** in St. Albans.

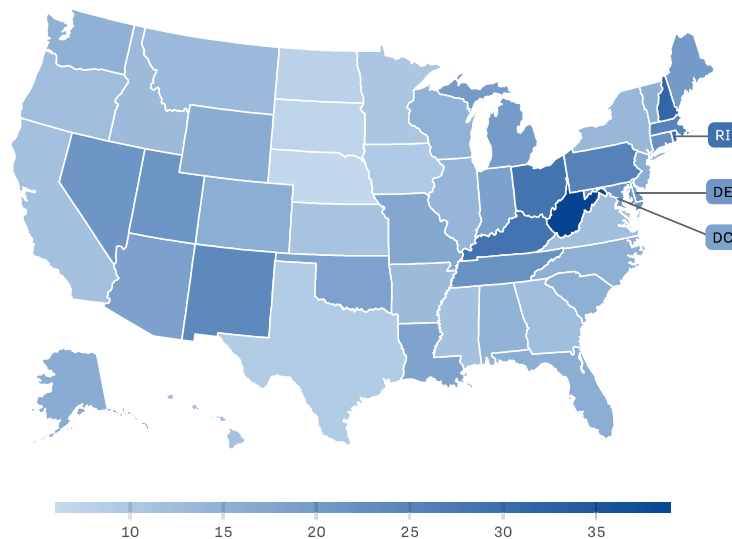
Imperfect progress

The results speak for themselves. If you look at Vermont's place on a US map, it looks like it should be hit very hard by drug overdose deaths — given that New England has the highest drug overdose death rate out of any comparable region in the country.

But based on the national data, Vermont is doing much better than nearby states — particularly its direct neighbor, New Hampshire, which has the second-highest drug overdose death rate in the US and **weeks- or months-long waiting periods for addiction care**. In fact, Vermont was the only state in New England that in 2015 was below the national average (of 16.3 per 100,000 people) for drug overdose deaths.

America's drug overdose crisis

Drug overdose deaths per 100,000 people in 2015



Source: [Centers for Disease Control and Prevention \(https://wonder.cdc.gov/mcd-icd10.html\)](https://wonder.cdc.gov/mcd-icd10.html).
Credit: German Lopez (<http://www.twitter.com/germanlopez>)

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Zooming out further, Vermont's overdose death rate is comparable to neighboring New York, which, like Vermont, has **one of the lowest uninsured rates** in the country and **high access to MAT**, being **the first state** to study and use methadone for opioid addiction. A bit south, West Virginia — which is very similar to Vermont in demographic terms, with both states having very white and very rural populations — has the worst death toll for drug overdoses in the US; Vermont, by comparison, isn't doing so bad.

Within Vermont, the state has also avoided some of the increases in overdose deaths that many other states have experienced. Between 2013 and 2015, Vermont's **overall drug overdose deaths** were relatively flat: 109 in 2013, 98 in 2014, and 108 in 2015. During this time, the national drug overdose death toll rose every single year: from nearly 44,000 in 2013 to more than 47,000 in 2014 to more than 52,000 in 2015.

It's hard to say how much of a role the hub and spoke system played in such outcomes, at least until empirical research comes out and evaluates the program. (One such study is currently underway, to be released no earlier than 2018.) Other initiatives, such as the widespread use of naloxone and needle exchanges, likely played a role as well. But the research on MAT strongly suggests that Vermont's approach is reducing deaths, and the hub and spoke system is the kind of all-hands-on-deck expansion of treatment that experts **have proposed** for combating the opioid epidemic.

It's not all perfect. In 2016, Vermont saw a large spike in drug overdose deaths — from 108 in 2015 to 148 in 2016. But Vermont is far from alone in seeing that kind of spike: Across the US, **preliminary data** suggests that drug overdose deaths rose from more than 52,000 in 2015 to more than 64,000 in 2016. In both cases, the cause seems to be the widespread introduction of **fentanyl**, a potent and deadly synthetic opioid, to the illicit drug market.



Officer Ethan Czyzewski drives by a home in which the Burlington Police Department seized 19 grams of heroin and 29 grams of cocaine. | Kainaz Amaria/Vox

So Vermont still has some ways to go.

One big issue is that the state is almost certainly not reaching all of its potential patients. Brooklyn estimates that the hub and spoke system has gotten about half of people in Vermont with an opioid use disorder into treatment. In his estimation, about 1.2 to 1.5 percent of the state's population is now on MAT — an increase from the 1 percent he calculated in **a previous study** — while 2 to 3 percent of the population has an opioid addiction.

That's still an achievement. Across the US, **a 2016 report** by the surgeon general found that only 10 percent of people with a drug use disorder get specialty treatment. And citing the experiences of other developed nations (such as **France**), Stanford drug policy expert Keith Humphreys told me that 50 percent uptake is as well as countries that widely offer MAT usually do.

But at the end of the day, it means that half of Vermonters with an opioid use disorder aren't getting treatment that could save their lives.

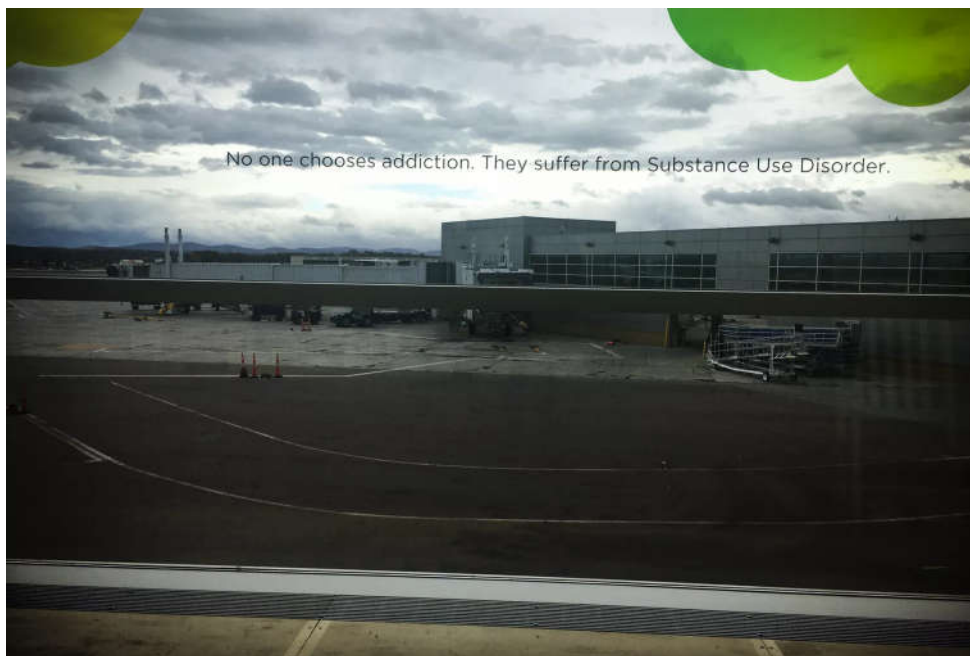
Remaining challenges

Part of the issue is that the hub and spoke system is still relatively new, so it has yet to reach its full impact. It was only in September of this year, after all, that the state eliminated lengthy

waiting periods at hubs.

But there are problems, beyond the previous waiting periods, that came up time and time again as I talked to providers and patients within the system.

One is the lingering stigma around addiction. Despite some progress in Vermont, this still affects just about every aspect of addiction care: It makes some doctors and nurse practitioners reluctant to take on patients with drug use disorders. It makes some people with addiction too nervous to admit to their illness, and it might even cause self-loathing. And it can make lawmakers and the public skeptical of dedicating too many resources to the problem.



A public message on windows of the Burlington airport attempting to destigmatize addiction. | Kainaz Amaria/Vox

“For 100-plus years as a society, we’ve punished and criminalized people who use drugs,” said Sarah Wakeman, an addiction medicine doctor and medical director at the Massachusetts General Hospital Substance Use Disorder Initiative. “Most people, at any time they’re honest about their substance use, something bad happens to them; they get kicked out of their house, they lose a relationship, they lose a job, they get incarcerated, they get kicked out of treatment. There’s a lot of incentive to not feel safe being honest with someone.”

All of this makes it harder to reach all people struggling with an addiction, because many are going to be very skeptical, if not cynical, about any sort of treatment.

Omar Manejwala, chief medical officer of **Catasys** and author of ***Craving: Why We Can't Seem to Get Enough***, pointed out that many of the remaining challenges Vermont will now face as basic access to treatment becomes less of a problem are the same issues that plague doctors and nurses dealing with other chronic diseases. He noted, as an example, that **one of the major problems** faced in the treatment of chronic hypertension is getting patients to follow their medication regimens and stay connected to treatment.

“The majority of chronic diseases require significant support beyond simply access. We need to solve for engagement,” Manejwala said, adding that it’s crucial that providers listen to people with addiction to achieve this. “We need to make treatment the path of least resistance for people. ... Ultimately, what you want is to make treatment valuable so that people will want to have it.”

At the same time, the one thing providers on the ground consistently told me is that they could always use more resources to reach patients — whether it's to meet them at needle exchanges, soup kitchens, other common gathering places for the homeless, or anywhere else someone struggling with addiction may be. Whether it's launching an advertising campaign or hiring outreach workers, getting to people in these places will likely require more money.

Addiction doctors, nurses, and counselors, meanwhile, still tend to be paid less than other fields of medicine. "It's a field that, as in mental health in general, is underpaid," Poverman said. "It's challenging work, and the pay isn't fantastic." That, she argued, can lead to high turnover — which can make it hard to retain and accept patients, since they'll lose doctors or nurses they trust, or there won't be a doctor or nurse they can access in the first place. And that also can only be solved with more money.

Jackie Corbally, who helped shape the hub and spoke system and now works for the Burlington Police Department as opioid policy director, said another remaining problem is that residential treatment centers — the kind that provide the in-patient rehab that many people associate with drug addiction — still have fairly long waiting periods.



Burlington Mayor Miro Weinberger meets with Jackie Corbally to prepare for their next communications strategy meeting, which brings together more than 40 stakeholders with multiple disciplines working to decrease opioid use disorder in Burlington. | Kainaz Amaria/Vox

This could drive away some potential patients who, for whatever reason, don't like the hub and spoke model or are opposed to MAT. "Within the population of people who are willing to change, there's going to be different preferences about what they're willing to do," Humphreys said. In other words, more options are necessary to attract a variety of individuals with a variety of needs and preferences.

By far the most common complaint I heard from hub and spoke providers, though, was transportation. This will always be a problem in a rural state like Vermont, where long drives to health care services can be the norm. But providers were insistent that more could be done to make this easier, particularly with the use of newer technologies like online video chat.

Some of that work is already happening. Brooklyn was almost giddy when he showed me what he called "the wheel" — which looks a bit like an enlarged version of a round birth control pill case but holds medication for opioid addiction. With it, patients can take their medications and record themselves doing it on their phones or computers.

This poses some security concerns, since patients could fake taking their medications, which are, after all, opioids, and instead sell them on the black market. But to ensure that's not happening, Brooklyn said a hub or spoke could call people in for urine tests at random. This kind of system could cut at least *some* of the long trips that patients have to make — which Brooklyn likened to “a revolution.”

In this, the wheel is much like the rest of the hub and spoke system: not perfect, but a huge step forward.



Kainaz Amaria/Vox

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