

**DEPARTMENTS OF LABOR, HEALTH AND
HUMAN SERVICES, AND EDUCATION, AND
RELATED AGENCIES APPROPRIATIONS FOR
FISCAL YEAR 2020**

THURSDAY, FEBRUARY 28, 2019

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:02 a.m. in room SD-124, Dirksen Senate Office Building, Hon. Roy Blunt, (chairman) presiding.

Present: Senators Blunt, Alexander, Capito, Hyde-Smith, Rubio, Murray, Durbin, Shaheen, Merkley, Murphy, Manchin, and Leahy.

**ADDRESSING THE OPIOID EPIDEMIC IN AMERICA:
PREVENTION, TREATMENT, AND RECOVERY AT THE
STATE AND LOCAL LEVEL**

OPENING STATEMENT OF SENATOR ROY BLUNT

Senator BLUNT. The Subcommittee on Labor, Health and Human Services, Education, and Related Agencies will come to order.

Good morning, glad you are here. We have decided it is okay to start on time, so we are starting on time and anxious to hear from you. I want to thank our witnesses for being here.

This is a critical issue in this committee, as Senator Murray and I began to work together on this committee 4 years ago, we really made the first substantial percentage increase that year on the effort to combat opioids. I think we increased the funding by about 300 percent. That was not an insignificant amount of money but compared to what we are spending now it was pretty easy to make a 300 percent increase. And then that discussion was driven in so many ways by members of this committee, from our States, from New Hampshire, from West Virginia, and other places, has gotten us to where we are and we are anxious to hear from you.

In 2017, almost 50,000 lives were lost due to this crisis. That equates to about one life every 11 minutes. It is the deadliest—2017 was the deadliest year on record for this disease, killing more people than those who lost their life at the peak of the HIV crisis in the 1990's. While those numbers are bad, the overdose deaths obviously are not redeemable, they only reflect the tip of the iceberg, for every person that loses their life to overdose there are 300 other people who are misusing prescription opioids during that same period of time.

Every State across the country feels the impact of this crisis. My State, Missouri, is no exception—my staff was recently talking to the mother of a St. Louis native and Navy veteran, Derek, who was just 2 months shy of his 30th birthday when he lost his life to the battle that had been going on for 12 years. And during that 12 years Derek had graduated from college, earned an MBA, served in the Navy proudly, but the addiction that had started from a high school football accident finally led to his death.

His mother, Kelly, is really a powerful voice in the fight against this epidemic. I want to thank her and so many other people who have taken their tragic experience and moved forward to try to help others prevent that tragedy and deal with what they are really dealing with.

We have had a steady increase of synthetic opioid use, and the DEA (Drug Enforcement Administration) in St. Louis recorded more than a 1600 percent increase in fentanyl seizures from 2016 to 2017. We saw in our State a 40 percent increase in fentanyl-related overdoses during that same period of time.

It is clear that the crisis is not behind us. This subcommittee has, I said to start, really been at the forefront of talking about this before even we had the kind of expanded legislative authority. Over 80 percent of the investment the Government has made has come through this subcommittee, nearly \$9 billion in the last 4 years, and I think we are beginning to see some signs of improvement, and that is one of the things we want to talk with you about today.

Federal funding in Missouri has provided over 4,000 people with treatment, saved, we believe, 2,000 lives through overdose reversals, and the rate of overdose deaths is beginning finally to drop. However, there is a lot more to do.

First, I think we have to realize that behavioral health issues have to be treated like all other health issues. That mood, anxiety, and other disorders can double the risk of addiction, and also just realize if you don't have a behavioral health issue before you become addicted, you certainly have a behavioral health issue after you become addicted.

Secondly, we need to reduce the number of people who become addicted in the first place. The committee has provided resources to expand surveillance in every State, to educate physicians through prescribing guidelines, and to start an education campaign. There is evidence that these efforts are beginning to work. The amount of opioids prescribed in 2017 declined by nearly 30 percent from the year before, but we have to continue to talk to both the prescribers and to patients.

And lastly, we need to look for better ways for pain management, and we are trying to do that through the research dollars, that again, this committee is making available.

This is an area that we have moved forward on together in a bipartisan dedicated way. Senator Murray has certainly been a great partner and a great part of this.

[The statement follows:]

PREPARED STATEMENT OF SENATOR ROY BLUNT

Good morning. Thank you to our witnesses for being here today to talk about a critical issue that continues to impact thousands of lives across our Nation—the opioid epidemic.

In 2017, over 49,000 lives were lost due to this crisis. That equates to one life every 11 minutes. It was the deadliest year on record, killing more people than at the peak of the AIDS crisis in the 1990s. These numbers are deeply troubling, but overdose deaths are only the tip of the iceberg. For every one person who died, 273 people misused prescription opioids in the past year.

Every State across the Nation feels the impact of this crisis, and Missouri is no exception. St. Louis native and Navy veteran Derek was just 2 months shy of his 30th birthday when he lost his life to a 12-year battle with addiction. Derek graduated from college, earned an MBA, and proudly served our Nation, but struggled with an addiction that began after he was prescribed powerful opioids for a football-related injury in high school. His mother, Kelly, is now a powerful voice in the fight against the opioid epidemic. I thank her for what she, and so many others are doing, to help prevent other families from suffering the same loss that she and her family have suffered.

Missouri has seen a steady increase in synthetic opioid use and the DEA in St. Louis recorded more than a 1,600 percent increase in fentanyl seizures from 2016 to 2017. Alarming, Missouri has seen a 40 percent increase in fentanyl related overdoses during that same period.

It is clear that the crisis is not behind us. However, as Chairman of the Appropriations Subcommittee that has provided over 80 percent of the U.S. Government investment, or nearly \$9 billion in the last 4 years, to address the epidemic I am pleased that we are starting to see some positive signs of improvement. Early data suggests that the 12 month opioid mortality rate is leveling off for the first time since the 1980's. In my home State of Missouri, Federal funding has provided over 4,000 people treatment, saved 2,000 lives through overdose reversals, and the rate of overdose deaths is dropping.

But we have more to do. As I hear from constituents back home and experts in the addiction field, I continue to believe that we need to focus on three major areas to address the crisis.

First, we must recognize that behavioral health issues should be treated like any other physical health issue. Mood and anxiety disorders double the risk of addiction. If we are going to effectively address opioid addiction, we need to ensure that those suffering can access effective treatment—and that should include mental health services.

Second, we need to reduce the number of individuals who become addicted in the first place. The Committee has provided resources to expand surveillance to every State, educate physicians through prescribing guidelines, and start an education campaign. There is evidence that these efforts are working as the amount of morphine prescribed in 2017 declined by nearly 30 percent. But we must remain vigilant by improving the speed of surveillance and revising guidelines to keep physicians up-to-date with the latest best practices.

Lastly, we need better pain management. Over 63 percent of opioid misuse stems from pain. Without reasonable access to non-addictive pain medications or alternative treatments, it will be difficult to truly get this crisis under control.

I am pleased to welcome today's panel of researchers and State and local experts to discuss how taxpayer dollars are allocated and prioritized at the State and local level. We all know there is no one-size-fits-all solution to solve this crisis, and we must remain committed to a comprehensive plan to get the opioid epidemic under control. As we move forward, I am interested to hear our witnesses' perspectives on what programs and proposals have made a difference, where we should focus future funding, and what strategies from States can be applied Nation-wide.

Thank you.

Senator BLUNT. Senator Murray I would like to turn to you for your opening statement.

STATEMENT OF SENATOR PATTY MURRAY

Senator MURRAY. Well, thank you very much, Mr. Chairman. Thank you for calling this hearing and all of your work on this really serious public health crisis.

I am very pleased today to welcome Dr. Charissa Fotinos who is the Director—Deputy Medical Director of Washington State Healthcare Authority. Thank you so much for traveling out here from, from the better Washington to this one. Great to have you all here. I am looking forward to hearing your testimony as well from our other State witnesses about how they are using Federal resources to make a real difference in the lives of patients and families who struggle with addiction and what additional actions are needed to stem this epidemic.

Since 1999, almost 400,000 people have died from an overdose involving opioids from prescription painkillers to illicit opioids such as heroin, to synthetic opioids such as fentanyl. Approximately 130 people in this country die every day from an opioid overdose, and the White House's own Council of Economic Advisors estimated the economic cost to our country of the opioid crisis is over \$500 billion each year. This does not begin to capture, of course, the emotional devastation caused by the opioid crisis from health providers who are treating babies born addicted to opioids, to more kids who are placed in our foster care, to parents who have lost children to an overdose and some even now raising their children's children as a result, to veterans in chronic pain who are struggling with addiction, and the list goes on.

So, I am concerned the Trump administration has been shockingly silent when it comes to addressing this crisis of addiction here at home. Earlier this month the administration released its first-ever National drug control strategy. It contained nothing new, identified no funding needs, and is 20 pages long and easily summarized in two words—Not Enough. But despite the administration's inaction, Congress has taken steps to address the epidemic. With bipartisan support, the Congress passed two major pieces of legislation through the Help Committee to deal with the epidemic, our chairman and Senator Lamar Alexander is here, thank you for your work on this, and this subcommittee, Senator Blunt has worked hard and provided an increase of \$2.6 billion in new resources to combat opioid abuse, which includes, \$1.5 billion in block grants to States through the State Opioid Response program. But we know that this barely addresses the scale of the problem.

Medicaid is by far the Nation's largest payer for Behavioral Health Services, including services for people with substance use disorders. Together, the Affordable Care Act and Medicaid expansion have expanded access to treatment for millions of families, providing a critical lifeline for people with substance use disorders.

The Trump administration does claim to be fighting the epidemic, but the reality is, it has done everything in its power to undermine access to treatment, which is so important, including taking Medicaid coverage away from people who cannot meet bureaucratic hurdles to prove they have reached a minimum number of working hours, causing tens of thousands of people to lose their vital coverage, and supporting healthcare repeal efforts that would cause millions of people to lose health coverage, and make coverage worse or less affordable for millions more with pre-existing conditions.

I hope to hear today from some of our witnesses about how their using Medicaid expansion and other Federal resources to address the epidemic. And I hope we will hear from our witnesses about how to address areas where there are treatment gaps, such as in rural areas and among Native American populations.

There is a lot more that needs to be done so, I hope as we listen to our witnesses today we will continue listening to each other and looking for additional opportunities to address this crisis in a bipartisan way.

Thank you, Mr. Chairman.

Senator BLUNT. Thank you Senator Murray.

We are lucky to have the Vice Chairman of the full Committee with us here today, Senator Leahy, do you have some opening remarks?

STATEMENT OF SENATOR PATRICK J. LEAHY

Senator LEAHY. Yes, Mr. Chairman and I will put my full statement on the record, but I do want to thank you and Senator Murray for having this hearing. I think you have demonstrated the fact that the efforts we are trying to do are bipartisan efforts. We want to provide resources and we know the opioid epidemic is the health crisis of our time. Every community, every family has been touched in some way by this tragic loss of life, or the struggle of addiction.

I was telling the witness from Vermont, whom I will mention in just a moment, when Marcelle and I got off the plane last week in Burlington to be home for a few days, a friend of ours we have known for years was getting on the plane, and his son just died of an opioid overdose. A wonderful family, well-educated, everything else. We just hugged each other. There is nothing you can say. I mean, what the heck do you say? A life just wiped out like that; we held each other and just, basically sobbed.

The one good thing, I think that Vermont is ahead of the country in many ways, we have openly identified the problem. We even had a Governor who in his State of the State speech spoke just about that. Public health leaders, addiction specialists, doctors, State leaders coming together; whether you are a Republican or a Democrat, we in Vermont, this is what we do to help.

We started the "hub-and-spoke" model to help support those in recovery, nine regional hubs, daily medication-assisted treatment, patients receive follow-up care, counseling, general welfare.

Beth Tanzman is here and I'm so pleased that she came down. We admire her in Vermont. She is the Executive Director for Vermont's Blueprint for Health that helped design/implement the hub-and-spoke model. I will let her talk about it but I—you know, Dick Shelby, Chairman Shelby and I, as well as you, Mr. Chairman, Senator Murray—we have come together. We have said this committee, the Senate Appropriations Committee, will address this. We will get money, we will continue to get money. But it is the people you are going to hear from who are the ones who then have to make sure that money is well spent.

I don't want to meet friends of mine when I go to Vermont like that, knowing the story of what happened to somebody who had nothing but great promise ahead of them.

Thank you.

Senator BLUNT. Thank you, Senator Leahy.

Let me introduce our witnesses. We are anxious to hear from you and then have that discussion between all of us, but, let me start over here with Dr. Berry, and I will introduce everybody and then we will come back to you Dr. Berry to make your opening statement.

Dr. James Berry is an Associate Professor and Director of Addictions at West Virginia University; Dr. Charissa Fotinos is the Deputy Chief Medical Officer at the Health Care Authority of Olympia, Washington; Mark Stringer is the Director of the Missouri Department of Mental Health; Dr. Karen Cropsey is a Professor of Psychiatry at the University of Alabama at Birmingham; Beth Tanzman, already well introduced by Senator Leahy, and Dr. Daisy Pierce is the Executive Director of the Navigating Recovery in New Hampshire.

We have your statements in the record, you can share as much of that as you would like. You can read it or summarize it but if we can get all of this done in 30 minutes or less we will have that much more time to talk to you about the questions we have.

Dr. Berry, thank you again for being here and go ahead and start.

STATEMENT OF DR. JAMES BERRY, DO, ASSOCIATE PROFESSOR AND VICE CHAIR, DIRECTOR OF ADDICTION SERVICES, DEPARTMENT OF BEHAVIORAL MEDICINE AND PSYCHIATRY, WEST VIRGINIA UNIVERSITY, MORGANTOWN, WV

Dr. BERRY. Good Morning Chairman Blunt, Ranking Member Murray, and members of the Senate Labor HHS Subcommittee.

My name is Dr. James H. Berry and I am a physician from West Virginia University who specializes in treating addiction and mental illness. I have been invited by Senator Shelley Moore Capito to share my experience and thoughts with you regarding our Nation's addiction epidemic. Having completed medical school in Michigan, I moved to West Virginia in 2002 to pursue residency training and psychiatry. At that time I had no idea we were on the eve of an evolving opioid crisis and that West Virginia would prove to be the bellwether of the rest of the Nation.

Early in my tenure, most of the patients seeking addiction treatment were doing so because of alcohol problems. Before long patients began trickling in seeking help for addiction to opioid pain pills. In a relatively short amount of time, the trickle became a tsunami and we became overwhelmed by the incredible demand to provide services for opioid use disorders. We quickly had to adapt and develop innovative strategies to expand access to and keep people in treatment. Over the past decade and a half, we have treated thousands of these patients through our university-based treatment program and have learned much from them about the nature of addiction and the path forward.

I would like to share with you a few brief observations: first, and most importantly, addiction is a treatable condition. There are very few areas of medicine where a healthcare provider can witness dramatic change in a patient's health and well-being like that afforded in addiction treatment. The process can be slow, and often painful, but the rewards are unparalleled. People get their lives back, they become better parents, they finish school, they enter the workforce,

and they inspire others. Unfortunately it is estimated that only 20 percent of the people who need addiction treatment ever receive it. We desperately, desperately need to expand access to evidence-based treatment that works.

Second. Addiction is a multifaceted problem that requires multifaceted solutions. There is no silver bullet. Addiction is biologic, psychologic, social, and spiritual manifestations. Genetics, environment and experience all play a part. Addiction is a mental disorder that is often present with other mental disorders such as anxiety and depression. There are incredibly high rates of traumatic experiences, such as sexual and physical abuse during childhood that lead to the development of addiction. None of this can be ignored and the best treatment incorporates all elements, medications proven to improve outcome should be readily available and barriers preventing widespread use should be removed.

People should also have ready access to psychological therapies known to improve functioning and increased quality of life. We are creatures that thrive in community and addiction is a very isolating condition. Supporting the use of peer support groups such as Twelve-Step programs are incredibly valuable in forming healthy connections that are reparative.

In addition, we are creatures hungry for meaning and purpose, involvement in faith-based and other purpose-driven community organizations foster healthy relationships in addition to supporting a drive to reach beyond one's limits.

Third. Our addiction epidemic extends beyond opioid and is rapidly evolving. Opioids have captured our National attention and rightly so, due to the staggering jolt of acute overdose deaths. However, please note that these deaths remain out past—outpaced by the number of people who die every year from alcohol or tobacco related causes.

Furthermore, many of us in the addiction treatment and research community are preparing for a significant increase in cannabis-related health problems as States moved to legalize marijuana and the public perception of harm diminishes. The epidemic continues to evolve as more and more people are using stimulants, such as methamphetamine an incredibly lethal synthetic opioids such as fentanyl that account for the sharpest increase in overdose deaths over the past several years.

Finally, the epidemic will require long-term solutions, there is no quick fix. We now have two generations that are severely impacted. Turning this epidemic around will require strategic investment in mental health treatment and prevention resources to meet today's adult generation and the ballooning child and adolescent population at risk.

We are woefully short of such personnel nationally and even more so in rural areas hardest hit by the epidemic, such as Appalachia. An investment in much-needed addiction training programs and incentives to encourage laborers to work in areas of greatest need are paramount.

Thank you for your time and attention and know that I am happy to answer any questions you may have.

[The statement follows:]

PREPARED STATEMENT OF JAMES H. BERRY, DO

Good Morning Chairman Blunt, Ranking Member Murray and members of the Senate Labor- HHS Subcommittee. My name is Dr. James H. Berry and I am a physician from West Virginia University who specializes in treating addiction and mental illness. I have been invited by Senator Shelley Moore Capito to share my experience and thoughts with you regarding our Nation's addiction epidemic. Having completed medical school in Michigan I moved to West Virginia in 2002 to pursue residency training in psychiatry. At the time, I had no idea we were on the eve of an evolving opioid crisis and that West Virginia would prove to be the bellwether for the rest of the Nation. Early in my tenure most of the patients seeking addiction treatment were doing so because of alcohol problems. Before long, patients began trickling in seeking help for addiction to opioid pain pills. In a relatively short amount of time, the trickle became a tsunami and we became overwhelmed by the incredible demand to provide services for opioid use disorders. We quickly had to adapt and develop innovative strategies to expand access to and keep people in treatment. Over the past decade and a half, we have treated thousands of these patients through our university-based treatment program and have learned much from them about the nature of addiction and the path forward. I would like to share with you a few observations.

First, and most importantly, addiction is a treatable condition. There are very few other areas of medicine where a healthcare provider can witness dramatic changes in a patient's health and wellbeing like that afforded in addiction treatment. The process can be slow and painful, but the rewards are unparalleled. People get their lives back. They become better parents. They finish school. They enter the workforce. They inspire others. Unfortunately, it is estimated that only twenty percent of the people who need addiction treatment ever receive it. We desperately need to expand access to evidence-based treatment.

Second, addiction is a multifaceted problem that requires multifaceted solutions. There is no silver bullet. Addiction has biologic, psychologic, social and spiritual manifestations. Genetics, environment and experience all play a part. Addiction is a mental disorder that is often present with other mental disorders such as anxiety and depression. There are incredibly high rates of traumatic experiences, such as sexual and physical abuse during childhood that lead to the development of addiction. None of this can be ignored and the best treatment incorporates all elements. Medications proven to improve outcomes should be readily available and barriers preventing widespread use should be removed. People should also have ready access to psychological therapies known to improve functioning and increase quality of life. We are creatures that thrive in community and addiction is a very isolating condition. Supporting the use of peer support groups such as 12-step programs are incredibly valuable in forming healthy connections that are reparative. In addition, we are creatures hungry for meaning and purpose. Involvement in faith-based and other purpose-driven community organizations foster healthy relationships in addition to supporting a drive to reach beyond one's illness.

Third, our addiction epidemic extends beyond opioids and is rapidly evolving. Opioids have captured our national attention and rightly so due to the staggering jolt of acute overdose deaths. However, please note that these deaths remain outpaced by the number of people who die every year from alcohol or tobacco-related causes. Furthermore, many of us in the addiction treatment and research community are preparing for a significant increase in cannabis-related health problems as States move to legalize and the public perception of harm diminishes. The epidemic continues to evolve as more and more people are using stimulants such as methamphetamine and incredibly lethal synthetic opioids such as fentanyl that account for the sharpest increase in overdose deaths over the past several years.

Finally, the epidemic will require long-term solutions. There is no quick fix. We now have two generations that are severely impacted. Turning this epidemic around will require strategic investment in mental health treatment and prevention resources to meet today's adult generation and the ballooning child and adolescent population at risk. We are woefully short of such personnel nationally and even more so in rural areas hardest hit by the epidemic such as Appalachia. Investment in much needed addiction training programs and incentives to encourage laborers to work in areas of greatest need are paramount.

Thank you for your time and attention, and know that I am happy to answer any questions you might have.

Senator BLUNT. Thank you Dr. Berry.
Dr. Fotinos.

STATEMENT OF DR. CHARISSA FOTINOS, DEPUTY CHIEF MEDICAL OFFICER, WASHINGTON STATE HEALTH CARE AUTHORITY, OLYMPIA, WA

Dr. FOTINOS. Chair Blunt, Ranking Member Murray, members of the committee, I'm honored to be here today. My name is Charisse Fotinos and I'm the Deputy Chief Medical Officer for the Washington State Healthcare Authority, the agency that administers the State Medicaid program. I am a board certified Family Medicine and Addiction Medicine physician.

Washington State continues to struggle with the opioid epidemic. There were 739 opioid deaths in 2017, up from 694 in 2016. This increase was primarily due to an increase in deaths involving fentanyl. From a health disparity perspective, Native Americans in Washington experience opioid overdose death rates that are three times higher than non-Hispanic, whites.

Despite these challenges, we are making some progress. Our efforts to increase access to treatment has seen an increase in the number of persons by Medicaid receiving medication-assisted treatment for opiate use disorder from about 5,000 in 2013 to over 21,000 in 2017, a fourfold increase.

Initiating and retaining people with opiate use disorder on medications is essential since medications reduce a person's risk of overdose death by 50 percent. In 2018, 37,900 naloxol kits were distributed across Washington, exclusive of any pharmacies. Over 3,000 overdose reversals were reported from syringe service programs alone.

Several metrics also suggest our prevention efforts are headed in the right direction. Our last healthy use survey reported the proportion of 10th graders using prescription pain pills to get high was 4.4 percent, a steady 50 percent decline since 2006. The number of 10 to 24 year olds receiving an opiate prescription decreased almost 40 percent during 2015 to 2017, and in 2018 our prescription monitoring program database was queried over 20 million times, far exceeding the total number of controlled substances dispensed.

Washington published one of the first prescribing opiate guidelines in 2006 after a notable increase in the rate of prescription opioid overdose related deaths, by 2017 this rate had declined by 44 percent.

In addition, Governor Inslee in 2016 issued an Executive Order organizing the State agencies and implementing a State plan. Our State legislator has—legislature has appropriated resources and we are working across agencies and with multiple stakeholders on the plan.

Scientific studies show that opiate replacement medication save lives. In order to better treat people on these medications we recognize the need to work toward integration of our currently distinct physical, mental health and substance use disorder systems of care. Each system has different funding streams and different conceptual frameworks. By leveraging the \$21 million of the \$34 million awarded to the State between the State targeted response and State Opiate Response Grants and funds—allocated by the State, we are working to create this—infrastructure and improve integration.

Loosely modeled after Vermont's hub-and-spoke in Massachusetts Nurse Care Manager models, Federal and State funds have been used to develop regional networks of care for persons with opiate use disorder across the State. The networks are responsible for getting new patients stabilized on opiate treatment medications and for providing and coordinating their medical mental health and substance use disorder treatment needs. Monies from the State Opiate Response Grant are being used to develop linkages to jails, emergency departments, and syringe service programs. Funding technical to support to assist in the development of these networks has been a critical part of this work.

We are now focusing our efforts on two particularly vulnerable populations, persons who are pregnant and parenting and those who justice involved. The governor has requested State legislation and additional funds to expand programs focused on persons who are pregnant and parenting and their newborns. Federal funds allocated the Child Abuse Prevention and Treatment Act and the Kinship Navigator programs will further support efforts at achieving positive health outcomes for parents struggling with opiate use disorder and their children.

The governor has also advanced the funding proposal to support a Law Enforcement Assisted Diversion program. We are also pursuing a Medicaid waiver that would allow persons eligible for Medicaid to start or continue medications for opiate use disorder while in jail.

Despite all of this work, challenges remain. Stigma and the shame of persons experiencing opiate use disorder and that of their families remains a barrier to care and delays recovery.

Maintaining Medicaid expansion and the pre-existing conditions protections and essential benefits of the Affordable Care Act is critical. Between 2013 and 2015, the number of people covered by Medicaid with an opiate use disorder doubled. It is likely that many of these persons would have experienced an overdose without Medicaid expansion.

It is important to note that while Washington's overall rate of opioid overdose death remains below the National average, the rate of methamphetamine-related deaths in Washington has doubled since 2013 and is higher than the National average. Many of our opiate users are poly-substance users. This highlights the need for us to develop systems capable of addressing multiple substance use disorders in responding to this epidemic. That is why we are focused on building a behavioral health integrated system.

Continued funding of the Substance Abuse Block grant, continued leadership at the Federal level to promote evidence-based care, continued work to reduce barriers to information exchange across provider types and the elimination of barriers that prohibit States from combining money across funding streams to support what will be an ongoing response to this crisis, would be paramount.

Through my experience as a family physician, I have witnessed the effects of substance use disorders on families and individuals. In my previous role as the medical director of the county health department and now in my current role with the State, I have gained a broader perspective. Families, communities and a generation of children are being impacted. Developing a long-term coordinated

response that recognizes and helps address the breadth of these impacts will be necessary to help restore fractured communities and reduce the risk of future generations experiencing the same.

Thank you for the opportunity to testify. I look forward to answering your questions.

[The statement follows:]

PREPARED STATEMENT OF CHARISSA FOTINOS, MD, MSc

Chair Blunt, Ranking Member Murray, Members of the Committee: I am honored to be here today. My name is Charissa Fotinos, and I am the deputy chief medical officer and director of behavioral health integration for the Washington State Health Care Authority; the agency that administers the State Medicaid program. I am a board certified Family Medicine and Addiction Medicine physician and have spent a large part of my career practicing medicine serving people with behavioral health conditions. In my current position I have spent much of the last 4 years working with my colleagues across the State to address the opioid crisis. I appear before you today to review our progress, describe some of our efforts, present some of our ongoing challenges and to ask for your continued support in responding to this public health emergency.

Washington State continues to struggle with the opioid epidemic. There were 739 opioid overdose deaths in 2017, up from 694 in 2016. This increase was primarily due to an increase in deaths involving fentanyl. As is true with many health conditions, huge disparities among communities exist, Native Americans in Washington experience opioid overdose death rates that are 3 times higher than non-Hispanic whites.

Despite these challenges we are making some progress. My colleague Dr. Gary Franklin first discovered the problem with overdose deaths related to prescription drug overdoses, and since that discovery we have implemented collaborative practice guidelines that have contributed to a sustained 44 percent decline in the rate of prescription opioid related deaths.

Our efforts to increase the number of waived prescribers and increase access to medications has seen an increase in the number of persons covered by Medicaid receiving medication assisted treatment for opioid use disorder or OUD, from about 5,000 in 2013 to over 21,000 in 2017, a 4 fold increase. Through the 2nd quarter of 2018 about a third of people on Medicaid with a diagnosis of OUD were receiving treatment. Across the State 90 day retention rates for medication are about 72 percent. Initiating and retaining people with opioid use disorder on medications is essential since medications reduce a person's risk of death by more than 50 percent.

In 2018 37,900 naloxone kits were distributed across Washington, exclusive of any provided by a pharmacy. Over 3,000 overdose reversals were reported from syringe service programs alone.

Several metrics also suggest our prevention efforts are headed in the right direction. Our last Healthy Youth Survey reported the proportion of 10th graders using prescription pain pills to get high was 4.4 percent, a steady 50 percent decline since 2006. The number of 10—24 year olds receiving an opioid prescription decreased almost 40 percent during 2015 to 2017. And, in 2018, our Prescription Monitoring Program database was queried over 20 million times, far exceeding the total number of controlled substances dispensed.

We believe part of this success has been due to the fact that in 2015 multiple State agencies along with our tribal nations and external stakeholders collaborated to develop a State opioid response plan. Governor Inslee's executive order issued in 2016 called attention to the epidemic and directed State agencies to implement the response plan which focuses on 4 goals: prevention, treatment, overdose response, and measurement. The plan has provided a blueprint for action, reduced duplication of effort and helped identify ongoing gaps as strategies are developed and activities implemented. In addition, the States' nine accountable communities of health, created through a Medicaid transformation project, are required to implement and will be measured on improvements made from their own regional opioid response plans. The transformation project also allows Medicaid funds to be used for housing and employment supports; critical elements of many people's recovery.

There are 17 strategies and 105 activities in the State opioid response plan. Included is a copy of our State plan, an example of a routine report and some of our metrics.

Scientific studies show that opioid replacement medications like methadone and buprenorphine are highly effective in reducing opioid related overdose risk and in improving outcomes. In order to better support people on these medications, we rec-

ognized the need to work towards integration of our currently distinct physical health, mental health and substance use disorder systems of care. Each system has different funding streams and different conceptual frameworks. This has highlighted the need to develop a coordinated infrastructure of care for persons struggling with opioid and other substance use disorders. By leveraging \$21.3 million of the \$33.4 million dollars awarded the State with the State Targeted Response, STR, and State Opioid Response, SOR, grants and funds allocated by the State, we are working to create this infrastructure.

Loosely modeled after Vermont's hub and spoke and Massachusetts' nurse care manager models, Federal and State funds have been used to develop regional networks of care for persons with opioid use disorder across the State. By providing funds to hire nurses, care coordinators and provide additional administrative support to practices, we have expanded capacity and started to build what we hope will be more integrated systems of care. The networks are responsible for getting new patients stabilized on opioid treatment medications and for providing and coordinating their medical, mental health and substance use disorder treatment needs. Monies from the SOR grant are being used to develop linkages to jails, emergency departments and syringe service programs. Funding technical support to assist in the development of these networks has been a critical part of this work.

We are focusing our efforts on two particularly vulnerable populations, persons who are pregnant and parenting and those who are justice involved. The Governor has requested additional funds to expand programs focused on persons who are pregnant and parenting and their newborns. Federal funds allocated to the Child Abuse Prevention and Treatment Act and the Kinship Navigator programs will further support efforts at achieving positive health outcomes for parents struggling with OUD and their children. The Governor has also advanced a funding proposal to support a Law Enforcement Assisted Diversion program. We are also pursuing a Medicaid waiver that would allow persons eligible for Medicaid to start or continue medications for opioid use disorder while in jail.

Despite all of this work, challenges remain. Stigma and the shame of persons experiencing opioid use disorder and that of their families remains a barrier to care and delays recovery. Maintaining the pre-existing conditions protections of and essential benefits of the Affordable Care Act is critical. In 2013, 22,250 people covered by Medicaid in Washington had a diagnosis of OUD. A year after implementation in 2015 that number was 48,688. It is likely that many of these persons would have experienced an overdose without Medicaid expansion.

It's important to note that while Washington's overall rate of opioid overdose deaths remains below the national average, the rate of methamphetamine related deaths in Washington has doubled since 2013 and is higher than the national average. This highlights the need for us to develop systems capable of addressing multiple substance use disorders in responding to the epidemic.

While we are moving in the right direction, our efforts should be considered crisis triage and just the start of a long term response effort. As is true of many chronic conditions there are periods of stability and episodes of relapse. We need to rethink how we fund treatment in the context of chronic disease management to include funding peers and recovery supports. We also need to work closely with our other government partners to make available supported housing and employment.

Continued funding of the substance abuse block grant, continued leadership at the Federal level to promote evidence based care, continued work to reduce barriers to information exchange across provider types, and the elimination of barriers that prohibit States from combining money across funding streams to support what will be an ongoing response to this crisis will be paramount.

Through my experience as a family physician, I have witnessed the effects substance use disorders have on individuals and their families. In my previous role as the Medical director of a county health department and now in my current role at the State, I have gained a broader perspective. Families, communities and a generation of children are being impacted. Developing a long term coordinated response that recognizes and helps address the breadth of these impacts will be necessary to help restore fractured communities and reduce the risk of future generations experiencing the same. Thank you for the opportunity to testify, I look forward to answering your questions.

Senator BLUNT. Thank you Dr. Fotinos.
Director Stringer.

STATEMENT OF MARK STRINGER, DIRECTOR, MISSOURI DEPARTMENT OF MENTAL HEALTH, JEFFERSON CITY, MO

Mr. STRINGER. Mr. Chairman, members of the committee, Ranking Member Murray, my name is Mark Stringer and I am Director of the Missouri Department of Mental Health. I also serve as chair of the Public Policy Committee of the National Association of State Alcohol and Drug Substance Abuse Directors or NASADAD.

I truly appreciate the opportunity to testify before you today to discuss Missouri's actions to address the opioid crisis, with a huge boost from the State Targeted Response and State Opioid Response Grants, both programs managed by the Substance Abuse and Mental Health Services Administration at the Federal level, and by State alcohol and drug agencies like mine, at the State level.

Before I get started I want to applaud the SAMHSA (Substance Abuse and Mental Health Services Administration) under the leadership of Dr. Elinore McCance-Katz. She and her strong leadership team have worked hard to ensure that these vital grant programs are distributed quickly and implemented effectively.

So State agencies like mine play a critical role in overseeing and implementing the publicly funded prevention, treatment, and recovery services system. All State substance use agencies develop a comprehensive plan for evidence-based practice and capture data describing the services provided.

Missouri had 951 overdose deaths in 2017, which means we were losing about three people a day. Preliminary death numbers from 2018 are even higher that we are bending the rate sharply downward. The largest driver of overdose deaths continue to be fentanyl. In the St. Louis region, which accounts for 70 percent of overdose deaths in Missouri, about 90 percent of those deaths involve fentanyl.

My main message today is that these services—the services to prevent, treat, and maintain recovery from substance use disorders help millions in Missouri and across the country. The STR and SOR funds have literally transformed our system and saved lives. For example, under the STR grant, Missouri received \$10 million for 2 years and under the SOR grant we received \$18 million for 2 years.

These grants, the largest investment in addiction treatment that I have seen in my 35-year career, enabled us to develop what we call the Medication First model of treatment for people with opioid use disorder, which seeks to remove barriers to evidence-based medical care being delivered in a prompt manner.

We are committed to leveraging and coordinating all dollars and grants, both local, State and Federal to make sure all money is spent as efficiently and effectively as possible on prevention, treatment, and recovery efforts. To that end, my agency directs a tremendous amount of energy to building relationships and working collaboratively with partners and stakeholders. We have worked with other State departments and boards, professional organizations, associations, coalitions, local governments, hospitals and healthcare systems, law enforcement and the courts, and faith-based and social service agencies. Specific partnerships are listed in my written testimony.

Collectively, we focused our efforts in three areas: again, prevention, treatment, and recovery. In terms of prevention, we trained nearly 15,000 individuals in opioid overdose education and the use of naloxone. We have distributed nearly 60,000 doses of naloxone and collected over 2,000 reports of lives saved through these grants.

With regard to treatment, we have trained over 4,000 medical and behavioral health providers on best practices for OUD treatment, reached over 2,000 overdose survivors in emergency departments, and provided evidence-based medical treatment to over 4,000 individuals under our new Medication First treatment model.

Additionally, with STR and SOR funds we have seen improvements in access to medications for OUD, faster access to those medications, improved treatment retention at 1, 3 and 6 months and 26 percent lower average monthly cost of treatment.

With regard to recovery, we funded four recovery community centers that have served over 14,000 people, provided secure housing to over 700 people and trained 338 individuals to become certified peer specialists.

So, here are my recommendations submitted with all due respect to the committee and in light of the tremendous demands on you. First, we are fighting an urgent and very steep uphill battle here. As much as these generous grant dollars have helped, we still have people who cannot get into lifesaving treatment. We know this—We know this becomes a death sentence for many and yet we still do not have enough resources to help everyone who needs it, we need more.

Second, I recommend a transition from time—over time from opioid specific resources to investing funds in the SAPT Block Grant. This allows for flexibility in directing funds to a range of alcohol or drug issues across the continuum.

Third, please ensure that Federal addiction initiatives work through State substance use agencies like mine, for reasons I mentioned earlier. To not do so threatens to fragment systems, create inefficiencies, and open the door to questionable practices.

Finally, I recommend that Congress maintain robust support for the SAPT Block Grant, which is an effective and efficient program supporting prevention, treatment, and recovery services. In fiscal year 2018, the block grant provided treatment services for 1.5 million Americans.

I want to thank you again for the opportunity to be here and look forward to your questions.

[The statement follows:]

PREPARED STATEMENT OF MARK STRINGER

Chairman Blunt, Ranking Member Murray, and members of the Subcommittee, my name is Mark Stringer, and I serve as Director of Missouri's Department of Mental Health. I also serve as the Chair of the Public Policy Committee of the National Association of State Alcohol and Drug Abuse Directors (NASADAD). Thank you for the opportunity to testify before the Subcommittee today to discuss actions Missouri is taking to address the opioid crisis. In particular, thank you for the opportunity to share with the Committee the importance of the State Targeted Response to the Opioid Crisis Grants (STR) and the State Opioid Response Grants (SOR)—grants managed by the Substance Abuse and Mental Health Services Administration (SAMHSA) at the Federal level and State alcohol and drug agencies at the State level.

CRITICAL ROLE OF THE SSA

Critical Role of the Single State Agency (SSA) for Substance Use: The State agency plays a critical role in overseeing and implementing the publicly funded prevention, treatment, and recovery service system. All State substance use agencies develop a comprehensive plan for service delivery and capture data describing the services provided. It is important that Federal grant opportunities be coordinated and leveraged with the Federal block grants to assure effective and efficient use of resources.

An important focus of State directors across the country is the promotion of effective, high quality services. In Missouri, for example, we use our contracts as a mechanism to promote the use of evidence-based practices. In addition, we utilize onsite “fidelity reviews” in order to assess the extent to which providers are employing best practices in the right way. We also engage in on-site certification surveys or recognize national accreditation to ensure that providers are adhering to standards of care set by the Department of Mental Health. These standards apply to a number of areas related to service delivery, from staffing requirements (number of staff, qualifications of staff, continuing education required, etc.) to important rules governing the facilities within which services are delivered.

State directors focus on another important task: collecting and using data to improve service delivery. In Missouri, we obtain data in a number of categories, including abstinence from the use of alcohol, abstinence from the use of drugs, impact of services on housing, impact of services on employment, connectedness to community, and others. The Division tracks other measures such as the number of children returned to their parents’ custody and the number of individuals receiving recovery services. A great deal of prevention data comes from the Missouri Student Survey, which provides information at the county and local levels, with a sample size of nearly 200,000 students.

State substance use agencies represent a key source of technical assistance to the workforce in each State. In Missouri, we partner with the University of Missouri St. Louis, Missouri Institute of Mental Health (UMSL–MIMH) to run our statewide opioid grants, as well as a number of other initiatives, including our Spring Institute that provides training to thousands of staff and administrators in the behavioral health field. We work with the State provider association to plan, coordinate, and present trainings on evidence-based practices. My staff at the department also regularly work directly with providers, offering technical assistance and training in a variety of areas.

MISSOURI CRISIS

Scope of the Substance Use Disorder Problem in Missouri: It is worth stepping back for a moment to first examine the impact of all substance use disorders in the State before focusing on the unique issues related to prescription drug misuse and heroin. Overall, it is estimated that 379,000 Missourians have a substance use disorder. Of these, 17,000 are between the ages of 12 and 17 years old.

We know that approximately 8,600 parolees and 27,200 probationers in the State need substance use disorder treatment (Missouri Department of Corrections, 2017). Close to 28,400 Missouri veterans have a substance use disorder (Missouri Department of Public Safety, 2017) and 8,300 pregnant women struggle with drug or alcohol use (Missouri Department of Health and Senior Services, 2016).

In fiscal year 2018, about 47,820 Missourians received treatment for substance use disorders through the publicly funded system. The majority are individuals who lack resources to pay for treatment. Nearly one-half (45 percent) are referred through the criminal justice system. Alcohol is the most common substance problem presented at treatment admission (31 percent) followed by methamphetamine (21 percent), marijuana (21 percent), heroin (15 percent), and other drugs (12 percent). The State has been affected by methamphetamine use predominantly in the rural areas and heroin use in Eastern Missouri, including metropolitan St. Louis. Intravenous (IV) drug use is problematic statewide due to methamphetamine and heroin use.

Prescription Drug Use, Heroin, and Illicit Fentanyl: More than 52,000 Missourians meet clinical criteria for opioid use disorder (OUD). The epicenter of Missouri’s overdose crisis spans the eastern region, including both urban St. Louis City and County and rural surrounding counties. The highest rates of overdose deaths in Missouri are in urban, predominantly African-American communities that are underserved and stricken by poverty.

Missouri had 951 opioid overdose deaths in 2017—meaning we are losing nearly three people a day. And despite our tremendous efforts, preliminary death numbers from 2018 are looking even higher. The largest driver continues to be illicitly-made fentanyl, which has infiltrated our heroin supply and effectively resulted in an acute

poisoning crisis, particularly in the eastern side of our State in and around St. Louis. We are also starting to see fentanyl in the methamphetamine supply. In the St. Louis region, which accounts for about 70 percent of opioid overdose deaths in the State each year, upwards of 90 percent of these deaths involve fentanyl.

Financial Burden: In 2018, analysis by the Missouri Hospital Association found the economic burden of the opioid crisis was approximately \$12.6 billion each year. These costs are linked to premature death, hospital and emergency room visits, lost productivity, vehicle crashes, and more.

Benefits of Prevention, Treatment, and Recovery: A primary message for this Committee is that services to prevent, treat, and maintain recovery from substance use disorders help millions in Missouri and across the country. These services literally save lives. We have made dramatic improvements in prevention activities, treatment service delivery, and recovery support services in the last 2 years, largely because of the generous Federal funds we have received, combined with the urgency we all feel to put an end to this overdose crisis. As I will describe shortly, our evidence-based treatment efforts have shown incredible growth and improvement, resulting in nothing less than a system transformation in Missouri.

INTRODUCTION TO GRANT EFFORTS

Missouri received two large grants from the Substance Abuse and Mental Health Services Administration (SAMHSA) to address the opioid crisis— the State Targeted Response (STR) grant of \$10 million for 2 years (fiscal year 2017–2018) and the State Opioid Response (SOR) grant of over \$18 million for 2 years (fiscal year 2018–2019). As a State Department, we have become even more rigorous in our prioritization of evidence based models of care for prevention, treatment, and recovery. This includes our transformative approach to opioid use disorder (OUD)—what we call the “Medication First” Model of treatment. The key tenets of this model include:

- People with OUD receive pharmacotherapy as quickly as possible, prior to lengthy assessments or treatment planning sessions;
- Maintenance pharmacotherapy is delivered without arbitrary tapering or time limits;
- Individualized psychosocial services are offered but not required as a condition of pharmacotherapy;
- Addiction medications are discontinued only if it is worsening the patient’s condition.

In addition to the STR and SOR grants, we have pursued and secured multiple other grants to address the overdose crisis. We used a Prescription Drug and Opiate Addiction (PDOA) grant to expand access to medication assisted treatment (MAT) in our hardest hit areas and it afforded us the opportunity to begin work on the Medication First model. We also utilize the Prescription Drug/Opioid Overdose grant to expand overdose education and naloxone to emergency responders and social service agents out in the field. We are committed to leveraging and coordinating all dollars and grants—local, State, and Federal—to make sure all money is spent as efficiently and effectively as possible.

Consistent with SAMHSA’s target domains, the goals of the Missouri Opioid STR/SOR project included:

- Increase student-focused opioid use and overdose prevention initiatives and programs;
- Increase access to evidence-based MAT for uninsured and underinsured individuals with OUD through provider training, direct service delivery, healthcare integration, and improved transitions of care;
- Increase the number of individuals with OUD who receive recovery support services; and,
- Enhance sustainability through policy and practice changes as well as demonstrated clinical and cost effectiveness of grant-supported protocols.

For more information about our STR and SOR efforts, visit our website: www.MissouriOpioidSTR.org.

STAKEHOLDERS AND COLLABORATIONS

Planning and Coordination with Other State Agencies, Providers, Stakeholders: In Missouri, we understand that substance use disorders impact every aspect of our society. No one is immune from developing this disease, and resources must be used wisely to impact this community crisis. As a result, our agency directs a tremendous amount of energy building relationships and working collaboratively with stakeholders in order to ensure a coordinated, effective, and efficient approach to addressing substance use disorders in general, and the opioid epidemic in particular.

Specific Partnerships:*State Departments and Boards:*

- Department of Health and Senior Services
- Department of Social Services
- Department of Corrections
- Departments of Natural Resources and Conservation
- Department of Public Safety
- Missouri Board of Pharmacy

Professional Organizations, Associations, and Coalitions:

- Missouri Coalition for Community Behavioral Healthcare
- Missouri Hospital Association
- Missouri Primary Care Association
- Missouri Pharmacy Association
- Missouri Association of Osteopathic Physicians and Surgeons
- The St. Louis Regional Health Commission
- Missouri Coalition of Recovery Support Providers

Local Governments:

- Dozens of city and county health departments
- Sheriffs' departments
- City and county courts, treatment courts, and jails

Hospitals, Healthcare Systems, Provider Networks:

- Cox, Mercy, Barnes Jewish, SSM Hospital systems
- federally Qualified Health Centers (FQHCs)
- Community Mental Health Centers
- Certified Community Behavioral Health Clinics
- Rural Health Clinics

Faith-based and Social Service Institutions and Agencies:

- Multiple churches, places of worship
- Homeless shelters
- Domestic violence shelters
- Transitional living facilities
- Food pantries

Domains of Collaboration:*Prevention Collaborations:*

- Partners in Prevention is Missouri's higher education substance use consortium dedicated to creating healthy and safe college campuses. The coalition is comprised of 21 public and private college and university campuses across the State. Campus judicial officials, law enforcement, and campus prevention professionals are encouraged to take part in both their local coalition efforts and the statewide Partners in Prevention coalition.
- National Council on Alcoholism and Drug Abuse (local prevention organization)
- Community Partnership of the Ozarks (local prevention organization)
- Boys and Girls Clubs of America (10 clubhouses statewide)

Treatment Collaborations:

- Close partnership with the Missouri Coalition for Community Behavioral Healthcare
- Missouri Primary Care Association and FQHCs
- Missouri Hospital Association and hospital/healthcare networks

Law Enforcement and Corrections Collaborations:

- Teams have provided training and naloxone to over 50 police departments and 38 of 44 State park rangers
- Partnered with city and county jails and drug treatment courts
- Partnered with State and Federal probation and parole divisions for overdose training and education on evidence-based treatment and recovery practices

Recovery-focused Collaborations:

- Partnered with the Missouri Coalition of Recovery Support Providers and recovery housing providers throughout the State to establish and improve accreditation processes for recovery housing entities
- Collaborated with community recovery leaders to activate four Recovery Community Centers in high-need areas of the State

- Partnered with the Missouri Credentialing Board to launch a comprehensive Certified Peer Specialist training program to grow our peer workforce

Universities and Academic Collaborations:

- Partner with the University of Missouri St. Louis Missouri Institute of Mental Health to help administer, implement, and evaluate STR and SOR
- Work with the University of Missouri—Columbia's Missouri Telehealth Network to launch two opioid-focused ECHO programs (Pain Management and Opioid Use Disorder Treatment)
- Contract with Washington University in St. Louis to enhance and disseminate a mobile app for pregnant and postpartum women with OUD
- Contract with faculty from the St. Louis College of Pharmacy and Southern Illinois University of Edwardsville to lead pharmacy-based naloxone and treatment training and education
- Partner with faculty from the University of Central Missouri to develop, run, and evaluate a family support network through a Recovery Community program

MISSOURI OUTCOMES OF FEDERAL OPIOID FUNDING

We are extremely grateful for the resources that Congress has provided States, as well as all the time and energy placed on loosening the grip this crisis has on our whole Nation.

We have spent these dollars on what we believe must be prioritized in this current public health emergency: increasing access to life-saving services, including naloxone for overdose reversal and maintenance medical treatment for opioid use disorder. Our efforts focus on three broader, sequential goals: survival, stabilization, and thriving. This broadly represents our efforts in three areas: prevention, treatment, and recovery.

PREVENTION (SURVIVAL)

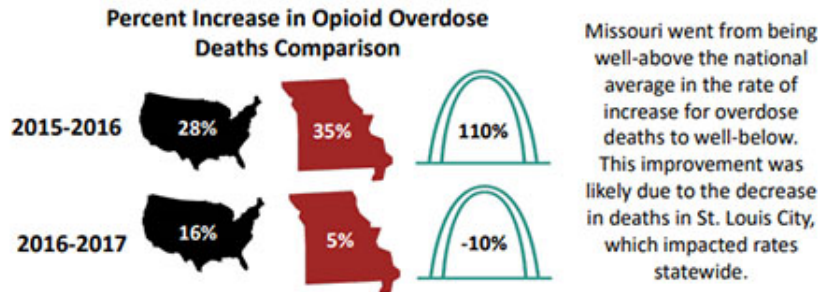
Survival Snapshot: Our focus has been on preventing the development and consequences of addiction by training youth to avoid drug misuse, training providers how best to treat chronic pain, and saturating high-risk communities with naloxone, the opioid overdose antidote.

- Trained over 10,000 youth how to avoid prescription drug misuse
- Trained nearly 450 predominantly rural medical providers how to manage chronic pain safely and effectively
- Trained nearly 15,000 individuals in opioid overdose education and the use of Narcan/naloxone.
- Distributed nearly 60,000 doses of naloxone
- Collected 2,230 reports of lives saved through the Overdose Field Report system we created with these grants.

Addressing Overdose: Through the STR/SOR and PDO grant projects combined, 14,340 individuals have been trained in overdose education and naloxone distribution, 17,827 boxes of naloxone have been distributed, and OUD treatment has been initiated for 4,072 individuals.

Through STR/SOR, OEND trainings have been provided to 6,155 individuals including criminal justice staff and justice-involved persons, pharmacy management and frontline technicians, recovery housing providers, and recovery support group members. Eight thousand seven hundred nineteen (2-dose) naloxone kits have been distributed through STR (in addition to 3,100 intra-muscular naloxone provided by Direct Relief, a humanitarian aid organization that provides free naloxone to non-profit entities.) Through MO-HOPE, OEND trainings have been provided to 8,185 individuals including emergency responders, treatment and medical providers and other social service agency staff. Seven thousand six hundred thirty three (2-dose) naloxone kits have been distributed (in addition to 3,499 intra-muscular naloxone provided by Direct Relief.) Community Pharmacy Naloxone Expansion: Over 1,169 pharmacists and pharmacy students across the State have participated in an overdose and naloxone information training. Criminal Justice Overdose Prevention Program—Mo' Heroes: 1,314 individuals, both staff and criminal-justice involved individuals, have received OEND training.

Notably, prior to the start of these grants, MO was well above the national average for rate of increase in opioid overdose deaths (35 percent increase in MO vs. a 28 percent increase nationally); after, we were well below the average rate of increase (5 percent increase in MO vs. a 16 percent increase nationally) See below figure:



Addressing Opiate Prescribing: The Missouri Telehealth Network (MTN) conducts numerous Extension for Community Healthcare Outcomes (ECHO) projects. For STR/SOR, MTN created an ECHO on Chronic Pain Management for primary care providers. The ECHO team has conducted 33 sessions, reaching 136 unique providers. The most recent session took place on December 20, 2018, with seven more sessions planned over the rest of the grant year.

Preventing Use/Misuse: Though the focus of our spending has been on helping those already in the throes of addiction and at greatest risk of death, we have also dedicated robust efforts towards prevention initiatives. We've provided school-based training and education about prescription drug misuse to over 11,000 students, and have partnered with the Boys and Girls Clubs of America to implement novel prevention programs in their clubhouses so we can reach youth who are likely at highest risk of developing addiction later in life.

TREATMENT (STABILIZATION)

Stabilization Snapshot: Our focus has been on improving access to medical treatment for OUD by providing rigorous multidisciplinary training and consultation, connecting overdose survivors to community treatment, and delivering effective, evidence-based treatment services to thousands of Missourians struggling with opioid addiction.

- Trained over 4,000 medical and behavioral healthcare providers on best practices for OUD treatment.
- Reached over 2,000 overdose survivors in emergency departments to connect them with treatment and other services.
- Provided evidence-based medical treatment to over 4,000 individuals under our new Medication First treatment model.

The following improvements have been realized when comparing treatment prior to STR and SOR grants: (1) better access to medications for OUD, (2) faster access to those medications, (3) improved treatment retention at 1, 3, and 6 months, and (4) 26 percent lower average monthly cost of treatment.

Sustainable Treatment

Intervention Post-Overdose: Through Opioid STR/SOR funding, Missouri has expanded the Engaging Patients in Care Coordination (EPICC) project and was able to secure State funding to replicate the model statewide. Patients routinely present to emergency departments seeking help with opioid withdrawal and—all too often—needing emergency resuscitation for opioid overdose. Emergency Department (ED) physicians are uniquely positioned to change the life trajectory of patients who present due to opioid overdose and can serve as a link for at-risk patients into treatment and recovery support services. Utilizing evidenced-based, FDA-approved medicines (e.g. buprenorphine) in the ED improve patient engagement and connection to opioid use disorder treatment services, and ultimately reduce patient mortality. The EPICC project expedites access to MAT and improves the coordination of care between emergency departments and community-based settings. Recovery coaches meet patients post-overdose in the emergency department and connect patients to SUD treatment agencies. This peer outreach has been provided to more than 2,200 individuals since May 2017.

Medical Treatment Providers: A key concern when utilizing time-limited grant dollars is sustainability of efforts. Missouri realized that trainings in key areas represented core sustainability in use of naloxone (identified above) addiction medications. Unfortunately, access to evidence-based addiction medications is limited by a lack of knowledge by medical professionals and exacerbated by the need for pre-

scribers to obtain a DEA waiver in order to offer the gold standard of care in the initial treatment of OUD: buprenorphine. Prescribing and managing this medication requires eight hours of training for physicians and 24 hours of training for mid-level practitioners (advance practice nurses and physician assistants). Missouri worked hard to outreach to prescribers already working in behavioral health, but also primary care providers working in federally Qualified Health Centers and emergency department physicians. We have also provided technical assistance directly to FQHCs to promote the treatment of OUD within the primary care health system. Under these grants, Missouri has thus far secured waiver training for nearly 150 professionals and most of them have successfully obtained the waiver needed to prescribe buprenorphine products.

We have also recognized the need for ongoing training and clinical support for prescribers, so an ECHO specific to the management of OUD was developed by the Missouri Telehealth Network (MTN). The MTN has also launched a Project ECHO on OUD Treatment. The OUD ECHO team has conducted 22 sessions, reaching over 179 unique providers. The second round of OUD ECHO is set to begin in April.

Medical Treatment Model: Maintenance pharmacotherapy with buprenorphine or methadone can reduce fatal opioid overdose rates by 50–70 percent, reduce illicit drug use, and increase treatment retention. However, in traditional treatment programs for addiction, the vast majority of patients are offered no ongoing medical treatment. Those who do receive medical care often face intensive psychosocial service requirements that make treatment both burdensome and costly. Though we wholeheartedly believe all clients should be offered a full menu of psychosocial support services such as counseling, family therapy, job training, case management, and more, we also believe medication should not be withheld as a condition of mandatory participation in these services. In Missouri we set forth with renewed focus to promote individualized psychosocial treatment rather than arbitrary requirements, ensuring each client gets exactly what he or she needs—nothing more, nothing less.

Through STR, we finalized and disseminated a treatment model we refer to as “Medication First.” The name and principles of Medication First are borrowed from the Housing First approach to homelessness. The National Alliance to End Homelessness explains: “Housing First is a homeless assistance approach that prioritizes providing people experiencing homelessness with permanent housing as quickly as possible—and then providing voluntary supportive services as needed.” This approach prioritizes client choice in both housing selection and service participation. Our Medication First model similarly prioritizes rapid and sustained access to a life-saving resource—medication for opioid use disorder—as a central tenet of treatment.

The Medication First (or low-barrier maintenance pharmacotherapy) approach to the treatment of Opioid Use Disorders (OUD) is based on a broad scientific consensus that the epidemic of fatal accidental poisoning (overdose) is one of the most urgent public health crises in our time. Increasing access to buprenorphine and methadone maintenance is the most effective way to reverse the overdose death rate. Increased treatment access will best be achieved by integrating buprenorphine induction, stabilization, maintenance, and referral throughout specialty addiction programs, as well as primary care clinics and other medical settings throughout the mainstream healthcare system.

Supporting System Change: Understanding how to successfully and efficiently manage a clinic that offers addiction medications, as well as how to provide psychosocial services that complement the use of these medications, also requires training. Changing practices and attitudes were essential to adopting evidence-based treatment that lasts longer than the life of the Federal funding.

—*Training and Consultation to Address Provider-Level Knowledge and Attitudinal Barriers:* To address gaps in knowledge about MAT and reduce attitudinal barriers to MAT, we developed a multimodal, multidisciplinary training curriculum called Opioid Crisis Management Training (OCMT) in collaboration with consulting physicians, nurses, counselors, social workers, and people who use drugs and/or are in recovery. The training curriculum includes a content lecture on the role of brain chemistry in opioid addiction, the science of MAT, the role of the counselor in treating OUD, a panel of individuals sharing how MAT has helped them achieve recovery, and profession-specific breakout sessions to promote dialogue and problem-solving about MedFirst implementation. Preliminary evaluation shows OCMTs improve knowledge and attitudes surrounding MAT and serve as an opportunity to connect with providers and encourage utilization of our ongoing training and consultation services.

—*Steps to Address Agency-Level Barriers:* To support MedFirst implementation, we assessed program readiness through environmental scans and site visits; held bi-monthly, statewide open “Office Hours” calls to discuss administrative

and clinical questions; and provided data-driven, program-specific “Treatment Barometers” comparing data from Pre-STR and STR timeframes. Many State-contracted treatment agencies are in rural areas where transportation and access to waived prescribers are limited. Thus, to increase access to care and reduce frequency of canceled or “no-show” appointments, STR funds were used to purchase telemedicine equipment and reimburse agencies for client transportation. Additionally, cross-agency collaboration was facilitated to increase prescriber capacity.

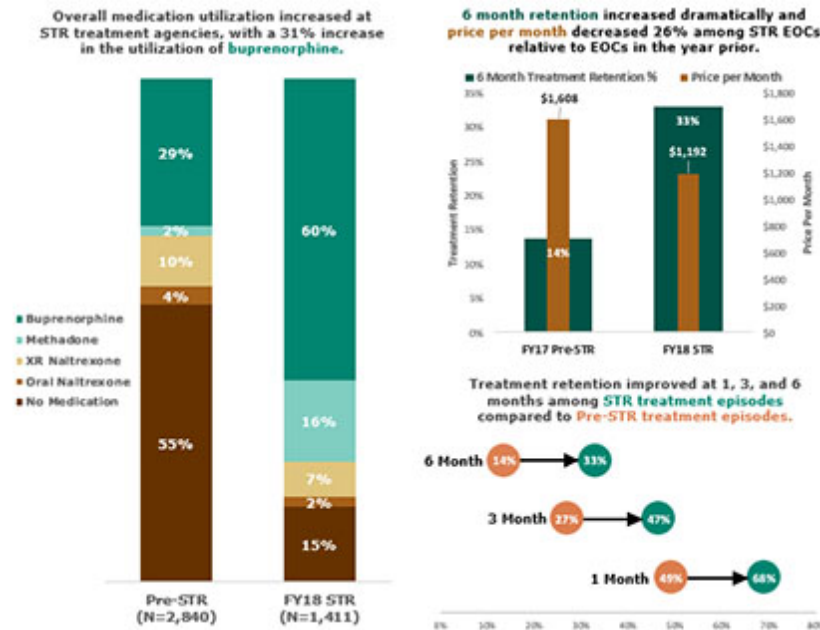
—*Process, Policy, and Procedural Changes to Address Structural and Systemic Barriers:* We anticipated several structural and systemic barriers to implementing MedFirst. These included:

- State billing requirements and intake procedures;
- buprenorphine prior authorizations and step-down dosing requirements in our Medicaid program;
- over-utilization of group services, non-medical detoxification, and residential services;
- high administrative burden coupled with low reimbursement rates for medical services; and
- a dearth of buprenorphine waived providers in our State.

To address (1) we altered State billing requirements to allow 30 days for completion of STR client assessments, facilitating faster client access to medical providers. Regarding (2) through collaboration with the Missouri Medicaid program, prior authorizations for initial buprenorphine prescriptions were removed, as were requirements for step down dosing and tapering plans. (Though uninsured individuals were the target of STR treatment funds, we also worked simultaneously to remove barriers in the Medicaid system.) Over utilization of group services, non-medical detoxification, and residential services (3) was addressed by removing these from the STR services menu and only allowing for their reimbursement through existing agency allocations. To begin to remedy (4), we increased the provider administrative payments on medical services from 7 percent to 15 percent for the STR program. Last, STR leaders addressed Missouri’s lack of buprenorphine prescribers (5) by offering State-sponsored DATA 2000 trainings and a reimbursement to medical providers who obtained their waiver.

These system-level changes, coupled with the provider- and agency-focused efforts, aimed to incentivize best practice and remove as many obstacles to MedFirst implementation as possible.

Our early findings are very promising. As stated above, through STR and SOR, we have treated over 4,200 people with OUD and found they are more likely to: obtain medical treatment; be connected to that medical treatment faster; be retained in treatment at 1, 3, and 6 months; and have lower average monthly costs of treatment than prior to the STR and SOR grants.



RECOVERY (THRIVING)

Thriving Snapshot: Our focus has been on building fulfillment and meaning in peoples' lives while they seek or complete formal treatment programs. We have accomplished this through the establishment of Recovery Community Centers in high-need areas, providing safe recovery housing to individuals in need, and building the workforce of peer specialists.

- Funded four Recovery Community Centers that have served over 14,000 people to help them find jobs, housing, and community connections.
- Provided secure housing to over 700 people who were engaged in treatment but didn't have anywhere safe to live while they did so.
- Trained 338 individuals to become Certified Peer Specialists so they can join the workforce and give back by sharing their lived experience with people who can benefit from what they've been through.

Recovery Community Centers: With support from STR/SOR, Recovery Community Centers (RCCs) have been an integral part of Missouri's work on the opioid epidemic. RCCs are independent, non-profit organizations that help individuals recovering from substance use disorders. They help build recovery capital by providing advocacy training, recovery information, mutual-help or peer-support groups, social activities, and other community-based services. In 2018, Missouri RCCs served over 14,000 people. About 58 percent of those people were individuals with an Opioid Use Disorder (OUD).

Our RCCs were open over 9,000 hours, offered 3,569 activities, and distributed over 3,000 Narcan kits. RCCs completed outreach to 3,296 people with OUD. The RCCs served over 8,000 total individuals with OUD in 2018.

Safe and Sober Housing: Through STR/SOR, and the Missouri Coalition of Recovery Support Providers (MCRSP), Missouri has built a network of National Alliance for Recovery Residences (NARR) accredited and medication-friendly recovery housing entities for individuals enrolled in STR/SOR treatment programs. To date, more than 52 houses have been approved to receive STR/SOR funds. Over 700 individuals have received more than 15,000 bed nights to support individuals with OUD as they receive Medication First treatment through STR/SOR contracted treatment site.

RECOMMENDATIONS FOR FEDERAL ACTION

First, I want to applaud a strong SAMHSA under the leadership of Dr. Elinore McCance-Katz. She and her management team have worked hard to ensure that these vital grant funds are distributed quickly and implemented effectively.

In this report, I have outlined what Missouri has been able to accomplish in the areas of prevention, treatment, and recovery specific to opioid use disorders. While we've done so much with the Federal opioid dollars, we need to think about a bigger, longer-term investment in these efforts to make a significant impact and make death rates go down.

We are fighting an urgent and very steep uphill battle here—as much as these generous grant dollars have helped, we still have people who cannot get into life-saving treatment or find affordable recovery housing in our State. We know this becomes a death sentence for many, but we still don't have enough resources to help everyone who needs it.

Broader SUD Focus: Again, while we appreciate the opioid specific resources, we would recommend a transition over time from opioid specific resources to investing funds in the SAPT Block Grant. This allows for flexibility in directing funds to a range of alcohol or drug issues across the continuum—prevention, treatment, and recovery. This approach would benefit all States and territories. An important feature of the SAPT Block Grant is flexibility. Specifically, the program is designed to allow States to target resources according to regional and local circumstances instead of predetermined Federal mandates. This is particularly important given the diversity of each State's population, geography, trends in terms of drugs of use/misuse, and financing structure. We know that alcohol use disorders kill as many, or more, individuals per year—but does so more insidiously. We also know that some States or regions are impacted more by methamphetamine, which also causes devastation in families and communities.

Ensure Federal Addiction Initiatives Work through State Substance Use Agencies: State substance use agencies work with stakeholders to craft and implement a statewide, coordinated system of care for substance use disorder treatment, prevention, and recovery. In so doing, State agencies employ a number of tools to ensure public dollars are dedicated to effective programming. These tools include performance and outcome data reporting and management, contract monitoring, corrective action planning, onsite reviews, training, and technical assistance. States also redirect, redistribute, or eliminate support for programs that are not achieving results. In addition, State substance use agencies work to ensure that services are of the highest quality through State or nationally established standards of care. Federal policies that promote working through the State substance use agency ensure that initiatives are coordinated, accountable, effective, and efficient.

Maintain a strong commitment to the Substance Abuse Prevention and Treatment (SAPT) Block Grant without ever losing focus on prevention services: We recommend that Congress maintain robust support for the SAPT Block Grant, an effective and efficient program supporting prevention, treatment, and recovery services. In fiscal year 2018, the SAPT Block Grant provided treatment services for 1.5 million Americans. During the same year, of patients discharged from treatment, 76 percent were abstinent from alcohol and approximately 60 percent were abstinent from illicit drugs.

By statute, States must dedicate at least 20 percent of SAPT Block Grant funding for primary substance use prevention services. This prevention set-aside is by far the largest source of funding for each State agency's prevention budget, representing on average 70 percent of the primary prevention funding that States, U.S. territories, and the District of Columbia coordinate. In 35 States, the prevention set aside represents 50 to 100 percent of the substance use agency's budget.

We appreciate the difficult decisions Congress must face given the current fiscal climate. We believe it is equally important to note that trends in Federal appropriations for the SAPT Block Grant have led to a gradual but marked erosion in the program's reach.

Senator BLUNT. Thank you, Director Stringer.
Dr. Cropsey.

**STATEMENT OF DR. KAREN CROUSEY, PSY.D., CONATSER TURNER EN-
DOWED PROFESSOR OF PSYCHIATRY, UNIVERSITY OF ALABAMA
AT BIRMINGHAM, BIRMINGHAM, AL**

Dr. CROUSEY. Thank you Chairman Blunt, Ranking Member Murray, and members of the committee for the opportunity to come before you today to talk about the devastating opioid epidemic.

I am a clinical psychologist and professor in the Department of Psychiatry at the University of Alabama at Birmingham. I am both a clinician and researcher focused on addiction treatment. During my 20-year career conducting NIH funded research, I have completed several trials of buprenorphine treatment. I have also directed a trial training the public to recognize and treat opioid overdose using naloxone.

More recently I led a group of about 60 physicians, researchers, policymakers, and business partners to develop a comprehensive response to the opioid epidemic in our State that could serve as a model across the Nation as part of an internal grand challenge grant competition.

Overdose deaths, in conjunction with suicide, are responsible for a decline in life expectancy in the United States over the past 3 years. This pattern has not been seen since 1915 and differs from other developed countries where life expectancy continues to increase. And deaths from opioids are only predicted to rise in the next few years particularly with the continued influx of illicit fentanyl and fentanyl-derived drugs mixed into deadly cocktails with other pain medications and heroin.

Alabama has the dubious distinction as the State with the most opioid prescriptions written per capita in the Nation. In 2017 there were 107 prescriptions written for every 100 residents. This problem is particularly severe in some rural areas of the State. In addition to high rates of opioid prescriptions, we have the second highest rates of benzodiazepine prescriptions in the Nation. These two medications when taken together are particularly deadly.

Today, I would like to talk to you about three areas of intervention and additional research that may impact these numbers, both in Alabama and the United States.

Number one, expanded access to quality addiction treatment is needed. Alabama, like much of the country, has a provider shortage. There are not enough providers who have completed the prerequisites required by law to prescribe buprenorphine, one of the medications used to treat opioid addiction. The regulations surrounding buprenorphine prescribing are a barrier to treatment. Also, the medications available to treat opioid use disorder are expensive and often unaffordable for uninsured patients.

In addition to decreases in the cost of current medications, the development of novel medications to treat opioid use disorder and other addictions is critical. We also need research that focuses on evaluating treatment outcomes for inpatient and outpatient substance abuse treatment programs.

Finally, patients with addiction are complicated and often have other psychiatric conditions, such as—have other psychiatric conditions, chronic pain, and other health conditions that have gone untreated. Increasing parity for—in reimbursement for providers who

treat these complicated patients is imperative for expanding the workforce.

Number two, reduce deaths associated with opioid use disorder we must target infectious diseases that result from injection drug use. In addition to injection drug use putting a person at heightened risk for overdose, sharing needles and injection equipment puts these people at risk for infectious diseases such as HIV, hepatitis C, and bacterial infections, such as infections of the heart, bone, skin, and soft tissue.

Across the United States, hospitals have experienced a surge in admissions related to these bacterial infections. These hospitalizations are expensive. Treating one case of endocarditis, which is infection of the heart valves, cost over \$50,000. Total hospital costs associated with just this one infection has increased 18-fold from 2010 to 2015.

Attention needs to be given to the development of limited harm reduction programs to stem the threat of infectious diseases. In addition, research should be expanded to evaluate the efficacy of these types of programs.

Number three, we must focus on healthy alternatives to opioids for chronic pain management. There is not a single study that shows any clear benefit of long-term opioid use for chronic pain over other nonpharmacological treatments or non-opioid programs or non-opioid treatments. We need to employ non-opioid techniques for chronic pain that have been proven to be efficacious and that do not have serious consequences associated with their use. These treatments include cognitive behavioral therapy, meditation, physical therapy and yoga, and exercise. However, in order to utilize these non-opioid treatments, insurance companies need to be willing to pay for these services, and our workforce needs to be developed and trained to meet the demand.

In summary, we can improve the health of patients with opioid use disorder by increasing access to treatment through reimbursement parity; reducing buprenorphine regulations; reducing costs of medications; and increasing research dollars for behavioral and novel medication development and outcomes research.

Two: Reducing life-threatening complications and injection through harm reduction strategies and evaluating these strategies through research.

Three: Developing effective opioid-free treatments for pain.

Thank you for the opportunity to speak with you today on this critical issue.

[The statement follows:]

PREPARED STATEMENT OF DR. KAREN CROUSEY, PSY.D.

Thank you Chairman Blunt, Ranking Member Murray and members of the committee for the opportunity to come before you today to talk about the devastating opioid epidemic. I am a Clinical Psychologist and Professor in the Department of Psychiatry at the University of Alabama at Birmingham. I am both a clinician and researcher focused on addiction treatment. I provide direct care for patients with addiction, many of whom have psychiatric problems such as depression, posttraumatic stress disorder, and anxiety disorders. During my 20 year career conducting NIH-funded research, I have studied addiction, including opioid use disorders, particularly among disadvantaged populations such as individuals in the criminal justice system and persons living with HIV/AIDS. I have conducted several trials of buprenorphine treatment. I have also conducted a trial training the public to recog-

nize and treat opioid overdose using naloxone. More recently, I led a group of about 60 physicians, researchers, policy makers, and business partners to develop a comprehensive response to the opioid epidemic in our State that could serve as a model across the Nation as part of an internal University of Alabama at Birmingham Grand Challenge grant competition.

As you all know, opioid overdose is now the number one cause of accidental death in the United States, killing approximately 72,000 Americans each year. That's more than car accidents, gun violence or HIV/AIDS, even at the height of the epidemic. Overdose deaths, in conjunction with suicide, are responsible for a decline in life expectancy in the United States over the past 3 years. This pattern has not been seen since 1915 and differs from other developed countries where life expectancy continues to increase. And deaths from opioids are only predicted to rise in the next few years, particularly with the continued influx of illicit fentanyl and fentanyl-derived drugs mixed into deadly cocktails with other pain medications and heroin.

Alabama has the dubious distinction as the State with the most opioid prescriptions written per capita in the Nation; in 2017, there were 107 prescriptions written for every 100 residents. This problem is particularly severe in some rural areas of the State. For example, Walker County, AL which is a primarily rural county located next to Birmingham, has one of the highest prescribing rates in the country, with 216 prescriptions for every 100 residents. The CDC recently identified Walker County as #37 out of 220 counties at highest risk of an HIV and/or hepatitis C outbreak due to the scope of the opioid epidemic in that region. In addition to high rates of opioid prescriptions, we have the second highest rate of benzodiazepine prescriptions in the Nation; these two medications, when taken together, are particularly deadly.

Today, I would like to talk about three areas for intervention and additional research that may impact these numbers both in Alabama and the U.S.

Number one: expanded access to quality addiction treatment is needed. Alabama is 48th in the Nation in wealth, with over 19 percent of our citizens living in poverty. Gaps in healthcare access across the State have left many of our most vulnerable citizens without access to healthcare. Alabama, like much of the country, has a provider shortage. There are not enough providers who have completed the prerequisites required by law to prescribe buprenorphine, one of the medications used to treat opioid addiction.

The regulations surrounding buprenorphine prescribing are a barrier to treatment. Providers need to attend a full day of training or online course to learn to prescribe buprenorphine, a safer medication to use than opioid pain medications. Such specific training is not required for providers to prescribe these other medications, such as fentanyl or oxycodone.

In addition, patients with addiction are complicated and often have other psychiatric conditions such as depression, posttraumatic stress disorder, or other psychiatric illnesses. They often have chronic pain and other health conditions that have gone untreated. Increasing parity in reimbursement to providers who treat these complicated patients is imperative for expanding the workforce.

Thus, one recommendation is to increase reimbursement parity for providers treating addiction. In addition, reducing the regulations for prescribing buprenorphine is one way to expand access to treatment.

Also, the medications available to treat opioid use disorder are expensive and often unaffordable for uninsured patients. For example, injectable, long-acting naltrexone, the life-saving anti-opioid drug, is about \$1,300 per month. Buprenorphine is several hundred dollars per month.

Reducing the costs of these prescription medications would further expand access and save lives.

At UAB, some of our patients are not interested in treatment with medication-assisted therapy for opioid use disorder, even if they are able to access it. This is likely due to stigma of taking a medication or not wanting to take a medication to treat addiction. Finding effective and patient-acceptable forms of treatment is important. While we know that cognitive-behavioral treatments are effective for addiction, ensuring that patients can access these evidenced-based treatments is another gap in care. Further, other psychosocial interventions, including peer-support programs such as 12-step, have not been rigorously evaluated and a better understanding of these treatments is needed. Most treatment programs do not provide their success rates, which makes it difficult for consumers, policy makers and others to know if what these programs are doing is effective or to compare across different programs. Research that focuses on treatment outcomes for inpatient and outpatient

substance abuse treatment programs could provide this important information. Finally, development of novel medications to treat opioid use disorder and other addictions is critical. While deaths due to opioids have been devastating, we are also seeing a rise and transition to methamphetamine and other stimulant use and we currently have no FDA-approved medications to treat stimulant use disorders.

Thus, increased research dollars are needed to expand pharmacotherapy treatment options as well as provide access to effective behavioral treatments for addiction.

Number two: to reduce deaths associated with opioid use disorders, we must target infectious diseases that result from injection drug use. In addition to injection drug use putting a person at heightened risk for overdose, sharing needles and injection equipment puts these people at risk for infectious diseases such as HIV, hepatitis C, and bacterial infections, such as infections of the heart, bone, skin and soft tissues. Across the United States, hospitals have experienced a surge in admissions related to these bacterial infections. These hospitalizations are expensive. Treating one case of endocarditis (infection of the heart valves) costs over \$50,000. Total hospital costs associated with just this one infection has increased 18-fold from 2010 to 2015. Attention needs to be given to the development of limited, harm reduction programs to stem the threat of infectious diseases. In addition, research should be expanded to evaluate the efficacy of these types of programs.

Number three: We must focus on developing alternatives to opioids for chronic pain management. There is not a SINGLE STUDY that shows any clear benefit of long-term opioid use for chronic pain over other non-pharmacological treatments or non-opioid treatments. Not one. We need to employ non-opioid techniques for chronic pain that have been proven to be efficacious and that do not have the serious consequences associated with their use. These treatments include cognitive behavioral therapy, meditation, yoga, physical therapy, and exercise. Diet and nutrition can also be important for reducing pain. However, in order to utilize these non-opioid treatments, insurance companies need to be willing to pay for these services and our workforce needs to be developed and trained to be able to meet the demand.

If we live long enough, each of us will experience pain that lasts longer than we would like. Having strategies to manage this pain is important.

In summary, we can improve the health of patients with opioid use disorder by

- Increasing access to treatment through reimbursement parity, reducing regulations, reducing costs of medications, and increasing research dollars for behavioral and novel medication development.

- Reducing life threatening complications of injection through harm reduction strategies and evaluation of these strategies through research.

- Developing effective opioid-free treatments of pain.

Thank you for the opportunity to speak with you today on this critical issue.

Senator BLUNT. Thank you Dr. Cropsey.

Director Tanzman.

STATEMENT OF BETH TANZMAN, EXECUTIVE DIRECTOR, VERMONT BLUEPRINT FOR HEALTH, DEPARTMENT OF VERMONT HEALTH ACCESS, WATERBURY, VT

Ms. TANZMAN. Chairman Blunt, Ranking Member Murray, and Senator Leahy and staff, thank you for the opportunity to outline what we are learning in Vermont about addressing the opioid epidemic. We are here before you because Vermont has successfully scaled treatment availability for opioid use disorder statewide. Through our Hub-and-Spoke program we are currently treating over 8,000 Vermonters—that is 1.6 percent of our adult population. We treat a higher percentage of people of opioid use disorder than any other State in the Nation and we have no waiting list for treatment.

We provide medication-assisted treatment in primary care offices called spokes, and in specialty addictions treatment programs called hubs. Through a health home Medicaid plan, we built a programmatic framework that links primary care spokes and addictions treatment programs hubs together. Patients can move between hubs and spokes based on their needs, and clinical expertise

is shared across the primary care and substance abuse treatment systems.

There are strong signals that the Hub-and-Spoke program is facilitating positive outcomes. Vermont has the lowest opioid overdose death rate in New England. Vermonters receiving medication-assisted treatment have lower rates of incarcerations, hospitalizations, and emergency department use than do Vermonters with opioid use disorder who receive substance abuse care, as usual.

Our system of deploying teams of nurses and counselors to primary care spokes, two FTE for every 100 Medicaid members, combined with strong backup from hub programs, has dramatically increased the number of primary care providers willing to offer medication-assisted treatment in Vermont.

What we are learning may be helpful to others and a few conclusions stand out. First: medication-assisted treatment, the combination of medications and counseling, is the most effective treatment for opioid use disorder and as such, it should be consistently available as the standard of care for this condition. Insurance should pay for medication-assisted treatment. In Vermont, we developed a Medicaid Health Home State Plan Amendment under the authority of section 2703 of the Affordable Care Act to create the Hub-and-Spoke program.

There are other approaches using Medicaid that States can employ, including 1115.B, Substance Use Waivers; State plan amendments, including medication-assisted treatment and managed care organization contracts; and simply increasing reimbursement rates for targeted services.

Commercial payers should also participate. In Vermont, our two major commercial plans are piloting payments for hub-and-spoke services. The healthcare system, most especially primary care, has a key role in treating opioid addiction. The addiction treatment system cannot do this alone, there is just simply not enough treatment capacity to meet the demand brought on by this epidemic. The participation of primary care can affect greater integration of care, especially by coordinating pharmacological treatments with counseling, rehabilitation and recovery supports.

The barriers to primary care participation in medication-assisted treatment, not enough provider time, patient complexity, difficulty integrating counseling supports can be addressed by adding nursing and counseling services to primary care prescribing teams, as we have done in Vermont.

Treatment is only one element of a comprehensive response to this epidemic. Other elements include prevention, reducing people's exposure to opioids in the first place, harm reduction, such as a wide availability of the overdose reversal medication Narcan, and recovery supports, including vocational services to help people in recovery participate fully in our communities.

Finally, leadership focus matters. I have had the honor of serving under two consecutive governors, Democratic and Republican, who have both provided leadership and resources to address this epidemic in Vermont.

In closing, we have made much progress, much with the support of our Federal partners, and yet while in Vermont we have some of the best access to treatment in the Nation, we have not solved

this problem. Every week, two Vermonters die from a drug overdose and tragically we are also experiencing high numbers of children under the age of five who come into State custody due to this crisis.

We must learn how to do better by our communities and families.

Thank you.

[The statement follows:]

PREPARED STATEMENT OF BETH TANZMAN, MSW

Chairman Blunt, Ranking Member Murray, and Senator Leahy and staff thank you for the opportunity to outline what we are learning in Vermont about addressing the opioid epidemic.

Vermont is here before you because we have successfully scaled treatment availability for Opioid Use Disorder state-wide. Through our Hub and Spoke program we are currently treating over 8,000 Vermonters (1.6 percent of the adult population) with Medication Assisted Treatment (MAT). Vermont treats a higher percentage of people with Opioid Use Disorder than any other state in the nation.

We provide Medication Assisted Treatment in primary care offices (Spokes) and in specialty addictions treatment programs (Hubs). Through a Health Home Medicaid plan we've built a programmatic framework that links primary care (Spokes) and addictions treatment programs (Hubs). Patients can move between Hubs and Spokes based on their needs. Clinical expertise is shared across primary care and substance abuse treatment providers.

There are strong signals that the Hub and Spoke program is facilitating positive outcomes. Vermont has the lowest opioid overdose death rate in New England. Vermonters receiving Medication Assisted Treatment have lower rates of: incarceration, hospitalizations, and emergency department use than do Vermonters with Opioid Use Disorder who receive care as usual. Our system of deploying teams of nurses and counselors to primary care Spokes—2 FTE for every 100 Medicaid Members—combined with a strong back-up from Hub programs has dramatically increased the number of primary care providers offering Medication Assisted Treatment in Vermont.

What we're learning may be helpful to others and a few conclusions stand out.

Medication Assisted Treatment, the combination of medications and counseling, is the most effective treatment for opioid use disorder and as such, it should be consistently available as the standard of care for this condition.

Insurance should pay for Medication Assisted Treatment. In Vermont we developed a Medicaid Health Home State Plan Amendment under the authority of section 2703 of the Affordable Care Act to create the Hub and Spoke Program. There are other approaches to using Medicaid that states can employ including: 1115 B Substance Use Waivers, State Plan Amendments, including MAT in managed care organization contracts, and increasing reimbursement rates for targeted services. Commercial payers should also participate: in Vermont two of our major commercial plans are piloting payments for Hub and Spoke Services.

The barriers to primary care participation in MAT (not enough provider time, patient complexity, difficulty integrating counseling supports) can be addressed by adding nursing and counseling resources to the primary care prescribing teams, as we did in Vermont.

Treatment is one element of a comprehensive response to the opioid epidemic. Other elements include prevention—reducing peoples' exposure to opioids in the first place, harm reduction such as wide availability of the overdose reversal medication Narcan to help prevent overdose deaths, and recovery supports—including vocational services to help people in recovery participate fully in our communities.

Leadership focus matters. I have had the honor of serving under two consecutive Governors, democratic and republican, who have both provided leadership and resources to address the opioid epidemic in Vermont.

In closing, we have made much progress in Vermont, much of it with the support of our Federal partners. Yet while we have some of the best access to treatment in the nation, we have not solved this problem. Every week two Vermonters die from a drug overdose. Tragically we've also experienced high numbers of children under the age of five, who come into state custody due to this crisis. We must learn how to do better by our families and communities.

Thank-you.

*Material Submitted for the Record.**

- 2-page description of the Vermont Hub & Spoke Program 2017.
- Detailed program description accompanying Vermont's Health Home State Plan Amendment, 2013.
- Mohlman MK, Tanzman B, Finison K, Pinette M, & Jones C. (2016) Impact of Medication Assisted Treatment for Opioid Addiction on Medicaid Expenditures and Health Services Utilization Rates in Vermont. *Journal of Substance Abuse Treatment* (67) pp 9–14.
- Brooklyn JR & Sigmon, SC. (2017). Vermont Hub-and-Spoke Model of Care for Opioid Use Disorder: Development, Implementation, and Impact. *Journal of Addiction Medicine*, 11(4), 286–292.
- Levine ML, & Fraser M. (2018) Elements of a Comprehensive Public Health Response to the Opioid Crisis. *Annals of Internal Medicine*.
- Rawson R, Cousins SJ, McCann M, Pearce R, Van Donsel A. (2018). Assessment of medication of opioid use disorder as delivered with the Vermont hub and spoke system. *Journal of Substance Abuse Treatment* (97).

Senator BLUNT. Thank you Director.
Director Pierce.

STATEMENT OF DR. DAISY PIERCE, PhD, EXECUTIVE DIRECTOR, NAVIGATING RECOVERY OF THE LAKES REGION, LACONIA, NH

Dr. PIERCE. Senator Blunt, Ranking Member Murray, Senator Shaheen, and members of the subcommittee, thank you very much for this opportunity to testify about the opioid epidemic plaguing our Nation's communities. It is an honor to present information to you from the viewpoint of a recovery community organization in Laconia, New Hampshire.

As the Executive Director of Navigating Recovery of the Lakes Region, I have spent the last 3 years working closely with community partners to provide recovery support services to residents in Belknap County, the Lakes Region and surrounding towns in New Hampshire. Most recently, Navigating Recovery became one of the primary spokes for the Doorway at LRG Healthcare as part of the hug—hub-and-spoke system led by Governor Sununu.

The hub-and-spoke model, also known as New Hampshire Doorway, is how the New Hampshire Department of Health and Human Services chose to disseminate the funds from the State Opioid Response Grant for the purposes of increasing access to medication-assisted treatment, reducing unmet treatment needs, and reducing opioid overdose—overdose related deaths through the provision of prevention, treatment, and recovery support services for opioid use disorder.

The goal of New Hampshire's plan is to create clear points of entry for any resident with an opioid use disorder, to access services no more than an hour driving distance from their hometown. The design is meant to feature regional approach for addressing the public health crisis at nine hubs throughout the State.

The SOR grant funding has been an incredible infusion of financial assistance to the State of New Hampshire in the fight against the public health crisis of OUD (opioid use disorder). Since the announcement of the funding and the opening of the nine New Hampshire Doorways, the State has been able to ensure residents that help is available, there are ways to access services, and fighting this disease has bipartisan support and commitment at all levels of government.

*[Clerk's note: The material can be found in "Material Submitted for the Record."]

It is important to note however, that even in a small State like New Hampshire each region started out with vastly different services as a base. This model does allow for each doorway to design and staff the hub and establish connections with community spokes to meet the needs of that particular region, but there are still gaps in services that the spending does not address.

Some of the challenges or barriers we still need to find solutions for are the fact that there are not any additional services on the other side of New Hampshire Doorways. We still have the same number of treatment beds as before, but now more people are trying to access them. We also have a workforce shortage that has left some positions unfilled at New Hampshire Doorway locations. Many of these positions require specific training, education, and certifications that take time.

Finally, the SOR grant focuses on opioid use disorder, but what about alcohol, methamphetamine, benzodiazepines, and other non-opioid addictions. We must not be so nearsighted that we only focus on overdose fatalities when alcohol is still the most widely used substance in the country and methamphetamine presents a whole array of challenges when it comes to treatment.

States with epidemic level overdose deaths are incredibly grateful for funding opportunities like the SOR grant. We truly appreciate the time and effort this Appropriation Subcommittee has spent addressing the public health crisis we are all committed to combating. This process has highlighted how incredibly innovative, collaborative, and hard working the community service providers are who treat people suffering from substance use disorder and co-occurring mental health diseases.

When faced with a crisis or an epidemic, people often feel overwhelmed and hopeless, but the SOR grant and New Hampshire Doorway Program has demonstrated that this public health issue will be fought head on by passionate providers and the support of Federal funding.

In a matter of just 6 months, New Hampshire Department of Health and Human Services was able to conceptualize the hub-and-spoke model as offered by Vermont, identify the nine regions of the State for the New Hampshire Doorway locations, and launch the program. I can only imagine how successful the program could be if we had more time to prepare.

Therefore, I earnestly ask this committee today that the more commitment we can have at the Federal level that States will receive funding again, gives us more time to prepare. States need certainties so that community service providers are ready to roll out programs in a timely manner. The earlier we know the funding is coming, the more we can do with the money.

Thank you very much for your time and I look forward to answering any questions you have for me today about how New Hampshire is using the SOR Grant funding and the role of recovery community organizations in this fight.

[The statement follows:]

PREPARED STATEMENT OF DAISY PIERCE, PhD

Dear Senator Blunt, Ranking Member Murray, and Members of the Subcommittee:

Thank you very much for the opportunity to testify about the opioid epidemic plaguing our Nation's communities. It is an honor to present information to you from the viewpoint of a Recovery Community Organization in Laconia, New Hampshire. As the Executive Director of Navigating Recovery of the Lakes Region, I have spent the last 3 years working closely with community partners to provide recovery support services to residents of Belknap County, the Lakes Region, and surrounding towns in New Hampshire. Most recently, Navigating Recovery became one of the primary "spokes" for The Doorway at LRGHealthcare as part of Governor Sununu's Hub & Spoke system. The Hub & Spoke model, also known as NH Doorway, is how the NH Department of Health and Human Services chose to disseminate funds from the State Opioid Response (SOR) Grant, for the purposes of increasing access to medication-assisted treatment, reducing unmet treatment needs, and reducing opioid overdose related deaths through the provision of prevention, treatment and recovery support services for opioid use disorder (OUD). This written testimony will outline the recovery support services that already existed in NH prior to the SOR Grant, the Hub & Spoke model design, and preliminary experiences.

RECOVERY COMMUNITY ORGANIZATIONS AND PEER RECOVERY SUPPORT SERVICES

As one of several Recovery Community Organizations (RCOs) in New Hampshire, Navigating Recovery of the Lakes Region is a non-profit, grassroots collaborative organization creating a supportive, recovery informed community for those afflicted with a Substance Use Disorder (SUD), and their family, friends, and coworkers. Navigating Recovery is focused on providing an open door for those seeking and/or embracing recovery as people begin and maintain the path for a productive life without alcohol or other drugs. The center endeavors to close the continuum of care gap between emergency departments, correctional facilities, fire departments, police departments, and treatment/rehab facilities. This is achieved primarily through peer-to-peer recovery coaching. Peer-to-peer coaching helps an individual willing to start their recovery journey to bridge the time before and after treatment services are available, when they are most susceptible.

The Lakes Region of NH is an area with a great need for a Recovery Community Organization. In 2015, Laconia, the largest municipality in the region, had 90 opiate overdoses resulting in 10 deaths, 70 overdoses with 5 fatalities in 2016, and in 2017 there were 146 overdoses and 8 deaths. These overdose statistics are only for Laconia, and do not include the other towns in the region that Navigating Recovery serves (including all of Belknap County). This demonstrates how the community reflects the greater New Hampshire statistics of substance use disorder, overdoses, and fatalities. In 2016, there were 437 opioid-related overdose deaths—a rate of 35.8 deaths per 100,000 persons—nearly three (3) times higher than the national rate of 13.3 deaths per 100,000. From 2013 through 2016, opioid-related deaths in New Hampshire tripled. Since Navigating Recovery opened its doors in November 2016, we have assisted over 900 community members, responded to over 250 overdose and substance use related hospital calls, and distributed over 200 Narcan (naloxone) kits.

Recovery Coaching is a peer-based service that is developed and provided mainly by persons who are in recovery themselves and as a result have gained knowledge on how to attain and sustain recovery. The U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration describes these as developing a one-on-one relationship in which a person with recovery experience encourages, motivates, and supports another person seeking their own path to recovery. The recovery coach may also connect the peer in recovery with professional and nonprofessional services and resources available in the community. Such services include:

- Helping participants sign up for health insurance
- Making referrals to resources for Primary Care Physician, Mental Health Center for co-occurring mental healthcare needs, a Licensed Alcohol and Drug Counselor (LDAC) for an evaluation to determine the level of care needed
- Linking participants with withdrawal management, or in-patient treatment/rehab facilities
- Linking participants with Medication Assisted Treatment or Intensive Out-patient Programs
- Hosting group meetings to expand social network support, such as 12-step or SMART Recovery

—Assisting with an assortment of other recovery related issues, such as helping participants find stable housing, identifying transportation options, getting ID cards, looking for employment, quitting smoking, etc.

In addition to connecting participants with other services and resources, recovery coaches provide interim support if a participant has to wait for access to those services. For example, if there is a 3–6 week wait for a bed at a treatment facility, the recovery coach will meet with a participant as often as necessary to help them maintain their recovery.

Finally, recovery coaches help participants to create a Recovery Wellness Plan, and work to reduce/remove barriers to assist the participant achieve the goals of that plan. Recovery Wellness Plans are individually designed for each participant's personal needs in order to maintain stable, long-term recovery. The wellness plan is a continually evolving road map, with achievable goals, that are adjusted accordingly as a person's recovery path progresses.

RCO's throughout the State recognize that recovery means more than abstinence from alcohol and other drugs. Recovery requires a person-centered, holistic, wrap-around approach to helping an individual and their loved ones achieve a healthy, productive lifestyle, where their SUD and any co-occurring mental health illnesses are effectively managed. It is important to note that RCOs do not provide any clinical services. All recovery support programs offered are non-clinical, peer-based. However, the professionals providing recovery coaching at RCOs are often Certified Recovery Support Workers (CRSWs), licensed by the NH Licensing Board for Alcohol and Other Drug Use Professionals. Of important note, since 2016 there has been an increase from one (1) RCO operating in NH to 12 RCOs with 14 locations.

Hospital Support Program

“Partners in Recovery Wellness” is a program between Navigating Recovery and LRGHealthcare. Since June 2017, recovery coaches and hospital staff have been working together to improve outcomes for patients with substance use disorders. This is an innovative and successful approach because it capitalizes on community partnerships and local resources. Partners in Recovery Wellness increases access to medication-assisted treatment, reduces unmet treatment needs, and aims to reduce opioid overdose related deaths through the provision of prevention, treatment and recovery activities for individuals and families afflicted and affected by SUD. This program includes the following:

- Certified Recovery Support Workers (licensed recovery coaches) from Navigating Recovery: 24/7 on-call support provided for any overdose survivor in the Emergency Department and CRSWs meet with any other patient at the hospital identified as having a SUD.
- In-person meeting with patient to help link them to Medication Assisted Treatment, rehab/detox, support group meetings, LADC/MLADC and IOP referrals, and telephone or face-to-face coaching, etc.; thereby beginning to close the treatment gaps.
- Narcan provided by CRSW to individual with SUD
- Provide family and friends with educational opportunities (science of addiction, naloxone trainings, healthy boundaries, etc.) and support services
- Medication Assisted Treatment induction through the Emergency Department
- Education to hospital staff about MAT so that they feel more comfortable explaining this type of treatment. The goal is to help staff to see SUD as a medical disease and to find ways to help them encourage treatment. Staff members are educated about the LRGH Recovery Clinic that operates out of both hospital campuses (Lakes and Franklin) and about how to make a soft hand off from the ED to the clinic.
- Educational opportunities for ED staff about how and when to do an induction with Suboxone (medication assisted treatment).
- Partners in Recovery Wellness: Improving Outcomes for Patients with SUD is a stigma reduction training provided to all hospital staff. The workshop is taught by Daisy Pierce, PhD and Corey Gately, MLADC, and has now been taught to other hospitals and healthcare providers across the State of NH.

NH STATE OPIOID RESPONSE FUNDING—THE HUB AND SPOKE MODEL

The goal of New Hampshire's plan is to create clear points of entry for any resident with an OUD to access services no more than an hour driving distance from their hometown. The design is meant to feature a regional approach to addressing the public health crisis at nine (9) “hubs” throughout the State.

The Doorway at LRGH is the hub located at Lakes Region General Healthcare in Laconia for 34 towns within a 1-hour driving distance, open Monday through Friday, 8am-5pm. The SOR Grant has provided The Doorway at LRGH the opportunity

and funding to bring together a Certified Recovery Support Worker (CRSW), a Licensed Alcohol and Drug Counselor (LADC), a Licensed Mental Health Counselor (LMHC), and administrative support into a shared space. This communal working environment brings together staff from various community “spokes”, creating a multifaceted approach to providing OUD supports without a wait time and transportation between organizations. The concept of The Doorway does resemble that of RCOs with the exception of having clinical professionals working side-by-side with non-clinical peer supports (i.e. Licensed Alcohol and Drug Counselors working in a shared setting with Certified Recovery Support Workers).

As described above, in the Lakes Region, LRGHealthcare and Navigating Recovery already had a working relationship through the 24/7 On-Call Hospital Support Program. This positioned the hub in this region to be able to quickly launch The Doorway with already established lines of communication, policies and procedures in place. When a person seeking help enters The Doorway at LRGH, that individual is met by a CRSW from Navigating Recovery. The CRSW begins by determining what the person’s most urgent needs are, linking them with the LADC for any evaluations necessary, and making the appropriate level of care referrals. For example, if the appropriate level of care includes medication assisted treatment, the CRSW can walk the person to the Emergency Department for their first dose of Suboxone. This is just one model of how the nine (9) different hubs are operating. In each region, the hub is staffed and operated based on the resources available and needs of that particular community.

Another significant change with the funds provided by the SOR Grant is the ability to assist an individual with non-reimbursable costs associated with treatment and recovery. When an individual who is currently experiencing homelessness comes to The Doorway for help, the team is able to identify the level of care necessary, make the referral phone calls to locate a treatment bed, and then help that individual find a safe place to sleep if the bed is not immediately available. Other examples include providing transportation to a treatment center or offering a meal to someone who is hungry. Working with this particular population, we are often faced with someone whose primary needs are shelter and food. We recognize that these needs must be met before we can begin to, or simultaneously address the best pathway to recovery for that person. In the Lakes Region, temporary shelter is by far the largest gap in services available.

Again, the identified largest gap in each region is dependent on the local resources that were previously available in that particular community.

The NH Doorway hubs are also directly linked with a statewide hotline: 2-1-1. Anyone standing within the State boundaries can dial 211 and be connected to a resource specialist who has access to the most up to date list of community service providers closest to that individual. Anyone can call at anytime to ask for help. Since the opening of the hubs, when a person calls 211 and needs to access OUD or co-occurring OUD and mental health services, the resource specialist will call the closest Doorway and connect the person over the phone. This statewide hotline has made it easier for someone to find out what resources are available.

EARLY OBSERVATIONS OF NH DOORWAY HUB AND SPOKE PROGRAM

The SOR Grant funding has been an incredible infusion of financial assistance to the State of NH in the fight against the public health crisis of OUD. Since announcement of the funding and the opening of the nine (9) NH Doorways, the State has been able to assure residents that help is available, there are ways to access services, and fighting this disease has bipartisan support and commitment at all levels of government.

It is important to note, however, that even in a small State like NH, each region started out with vastly different services as a base. This model does allow for each Doorway to design and staff the hub and establish connections with community spokes to meet the needs of that particular region, but there are still gaps in services that this funding does not address. For example, respite beds and temporary shelter are the greatest need in the Lakes Region. The city of Laconia, with a population between 16,000 to 17,000 people, only has one homeless shelter with 30 beds. Between the months of October and May, The Belknap House is a cold weather shelter open for families experiencing homelessness. The next closest homeless shelters are in Concord or Plymouth, each a 30-minute drive from Laconia. There are no respite beds (a safe place for a person who is under the influence of substances to sleep) available in the area. The expectation of the funding clearly states that the money cannot be used for bricks and mortar, which would be necessary to create new beds. This means NH Doorway at LRGH must use flex funds for a hotel room if someone has nowhere else to go. Therefore, these flex funds, meant to help with

costs of transportation, food, and temporary shelter, are one of the key elements of the SOR Grant.

Some of the challenges/barriers we still need to find solutions for:

- No additional services on the other side of NH Doorway. We still have the same number of residential treatment beds as before, but now more people are trying to access them. Additionally, not all treatment centers will take patients with co-occurring disorders, which reduces the services available for that population.
- Workforce shortages have left some positions unfilled at NH Doorway locations. Many of these positions require specific training, education, and certifications that take time.
- Many sober living houses are abstinence-based and do not accept residents on opioid-based medication assisted treatment.
- The SOR Grant focuses on OUD, but what about alcohol, methamphetamine, benzodiazepines, and other non-opioid addictions? We must not be so near-sighted that we only focus on overdose fatalities, when alcohol is still the most widely used substance in the country, and methamphetamine presents a whole array of challenges when it comes to treatment (no MAT, no withdrawals, can cause long-term brain damage and drug-induced psychosis).

CONCLUSION

States with epidemic level overdose deaths are incredibly grateful for funding opportunities like the SOR Grant. We truly appreciate the time and effort this appropriation subcommittee has spent addressing the public health crisis we are all committed to combatting. This process has highlighted how incredibly innovative, collaborative, and hard working the community service providers are who treat people suffering from SUD and co-occurring mental health diseases. When faced with a crisis or epidemic, people often feel overwhelmed and hopeless, but the SOR Grant and NH Doorway program has demonstrated that this public health issue will be fought head-on by passionate service providers and the support of Federal funding. This infusion of support helped to build upon the work RCOs had started by letting people affected and afflicted know there is something everyone can do to help, and it brings hope to both communities and individuals affected by SUD.

In a matter of just six (6) months, NH DHHS was able to conceptualize the hub and spoke model, identify the nine (9) regions of the State for NH Doorway locations, and launch the program. Due to this condensed timeline, for several months there was uncertainty about the dissemination of funds, and some community agencies are still left thinking that each hub has 1/9 of \$22.8 million to distribute to spokes. Requests for Proposals (RFPs) came out before community stakeholders really understood the hub and spoke model. Now that community forums have helped to educate regions about each of the local Doorways, other organizations want to be spokes, but the RFPs have already closed. If we were able to launch the program we did in such a short period of time, I can only imagine how successful the program can be with more advanced notice to prepare. Therefore, I earnestly ask that the more commitment we can have from the Federal level that States will receive funding again next year, gives us more time to prepare. States need certainty so that community service providers (contractors) can submit proposals and are ready to roll out programs in a timely manner; the earlier we know the funding is coming, the more we can do with it.

We have been referring to the “opioid crisis” or “opioid epidemic” for a few years now. I urge everyone to reframe how we discuss this problem. To begin with, we have a substance use crisis, not just an opioid epidemic. Very rarely do we work with an individual who has only ever used opioids. Most people suffering with SUD use a variety of substances, each one of them with their own dangers. The rate at which we are losing community members to overdoses is tragic, but opioids will only be replaced by another drug if we do not work diligently to address all substances. Furthermore, Substance Use Disorder has been an illness plaguing people since at least the 1800’s, and long before that alcohol has caused health problems and societal issues. We need to stop envisioning the approach to this public health crisis as similar to a post-natural disaster recovery effort. Although we often describe the wreckage SUD leaves in its wake as a tornado ripping through a community, our efforts to address the disease must be sustainable long-term.

Finally, we must continue to be proactive and bring together dedicated service providers to brainstorm how to we can advance our progress addressing this disease, even as the primary drug of destruction changes and funding sources come and go. As with so many other diseases, we must remember that this illness does not have a “one size fits all solution.” Based on our experiences so far, when it comes to replicating systems that work, it is important to recognize that community partnerships

are crucial! If each community service provider is willing to work together, and organizations are armed with the knowledge of what resources are available, we can close most of the gaps, and not only save more lives, but help to make those lives happy, healthy, and productive again.

Thank you very much for your time and commitment to helping us combat substance use disorder.

Senator BLUNT. Thank you, Director.

All of you did a good job with your 5 minutes. We will see if we can do an equally good job with ours. I do think there will be a chance for a second round of questions; if you have more questions and your time is up, let's remember that other people would like to ask their questions too.

Let me ask a couple of questions here to start with and then will go to Senator Murray after that.

STATE'S ROLE IN OPIOID CRISIS

Director Stringer, you mentioned, one, the importance of getting the money out the door and that SAMHSA has gotten that money to the States quickly, and my real question, I think, is on your observations about how important it would be to continue to work through the States. I assume that means as opposed to working directly with local providers.

You all know from the way we have dealt with this, we have not tried to prescribe a solution here because we do not know the solution, but we are giving the States a great deal of flexibility.

So, first of all, I am going to ask you Mark about the importance of working through the States and then Dr. Cropsey, I am going to come to you and talk about and ask you about ways we can evaluate how the States are doing. We have given money to the NIH (National Institutes of Health) specifically to do that, but I think there are other tools out there in addition to the NIH.

So, first of all Director Stringer, the importance of working with the States and the importance of getting that money out the door.

Dr. STRINGER. Sure, and I very much appreciate the question Senator. Working with the States, number one, allows the States the flexibility to direct those funds where the need is the greatest. Which is exactly what we did with the STR and the SOR grants where our worst problem has been in the Eastern region primarily, the Eastern region of the State in the Boot Hill, some in the Southwest. So we were able to target those areas with those funds.

Secondly, we were able to coordinate those funds with other Federal grant programs, with our existing programs funded with block grant, and with State general revenue, so that we did not have redundancy, we did not have inefficiency, but it was—it is a well-coordinated system that I am very proud of.

So I think that—I think again, that the flexibility, the consistency and the quality is what we see when these funds come through the States.

EVALUATION OF PROGRAMS

Senator BLUNT. I would assume from this panel that there is no disagreement with that, at least, until we find out what works, and maybe after we find out what works. But on that topic again, we've given specific directions, some specific money to NIH, but Dr.

Cropsey, I know a lot of your work has been in trying to figure out what treatment works. How do we evaluate whether inpatient is better than outpatient? The—is a 30 day intense program better or is a longer commitment, and just talk about evaluating what is out there and how we share what appears to be working and share what appears not to be working.

Dr. CROPSEY. Well, thank you.

So, we do know that obviously, medication-assisted therapy has been life-saving and has been critical in saving lives, as we have heard from other panelists. I think that is well known and well established.

I believe also that the behavioral treatments that go along with medication-assisted therapy, cognitive behavioral therapy, also, are critical in reducing addiction and are important.

You know, I think what is less known is if someone goes to a specific treatment facility, what happens when they leave 30 days, you know, 3 months, 6 months after that facility. And I think that if you were able to incentivize facilities to collect that kind of data or to provide resources to be able to collect that data, we would know, we would have a better idea of how we could figure out what happens after an inpatient treatment program or what happens after someone is in an intensive outpatient program.

Right now that data is not captured particularly well at the individual agency, like treatment facility level and so I do think that that would be important to be able to collect. And whether it be some sort of outside evaluator that partners with those agencies, or whether it is the agencies who are incentivized to collect that data.

Senator BLUNT. Thank you.

Senator Murray.

MEDICAID EXPANSION

Senator MURRAY. Well, thank you very much to all of you for your testimony. You know, the evidence really shows pretty clearly that States that opted to expand Medicaid increased access to substance use disorder treatment for millions of families and that expansion provided critical resources that made it possible for those states to implement those innovative systems like the hub-and-spoke model that you spoke about Ms. Tanzman.

That also made it possible for Washington State to adopt the hub-and-spoke model providing access to life-saving treatment for thousands of families with opioid use disorder, particularly by covering essential services like early intervention, and outpatient and residential treatment, and medication-assisted treatment.

So, that to me, is another reason why the administration's efforts to undermine Medicaid are really troubling.

Dr. Fotinos, I wanted to ask you: How would Washington State's response to the epidemic be impacted if Medicaid were scaled back or converted into a block grant program?

Dr. FOTINOS. In Washington State we know that the vast majority of people currently covered by Medicaid right now, who also have an opiate use disorder, are members of the expansion population. And what we know when people do not have access to treatment is the incidents of HIV and hepatitis C infection goes up, the

number of people who die due to overdose-related death goes up, also eliminating those persons' ability to have coverage would increase burdens on hospitals and clinics that would be using charity care essentially, to take care of folks when they were much more sick and needed a valve replacement for instance, as opposed to just daily medication.

The criminal justice system would see an increased number of people who were doing illicit activities to get their drugs; the child welfare system would see an increase in the number of children and parents referred because they were suffering from addiction and not able to manage it in the appropriate way. And those costs would then drive up healthcare cost; employers would have to pay more because the hospitals would charge more. So it would unfortunately start this cycle of increased costs, less support in help for the people who are struggling with this disorder and would really set us back a long way.

The expansion has allowed people to be able to have life-saving medications, the Federal funds have allowed us to provide the manpower and the supports that are outside the funds of Medicaid to really help providers manage what is such a complex condition.

Senator MURRAY. Dr. Berry how about you. How has the Medicaid expansion affected West Virginia's ability to respond?

Dr. BERRY. Well—to speak personally in the sense that prior to the expansion, many of the folks were coming in for treatment were private pay and so many just had to scrounge up the funds as best they could to get into treatment and to stay in the treatment. We had to do a good degree of charity care at the time.

After we became an expansion State, I did see a significant number of people being able to come in and afford treatment, and be able to stay, and retain in treatment. So, I do know at least for me personally in the practice that we have been doing in our area, it has been a significant improvement in the lives of the patients we have been able to treat.

FOSTER CARE INTERVENTIONS

Senator MURRAY. Okay. Thank you. You know, I often hear about the ripple effect that opioid crisis is having on children, families—the number of babies born with withdrawal symptoms due to neo-natal abstinence syndrome grew seven-fold from 2000 to 2014. The number of children in foster care, one of you mentioned this in your testimony, has risen by more than 10 percent since 2013, much of which has been attributed to substance abuse disorder. And we know from research that children who are removed from their family placed in an out of home care often suffer serious long-term consequences.

So for that reason I have fought very hard for more resources dedicated to early identification and intervention and treatment for substance abuse to infants and their mothers, with the goal of keeping these families together, safely. That has been incredibly important.

I wanted to ask, and I just have 45 seconds so I might have to come back to this, but what are some of the resources that have been shown to successfully connect infants and their mothers to

treatment and prevention - and prevent the need for foster care. Any of you?

Mr. Stringer and then Ms. Tanzman.

Mr. STRINGER. Senator, in Missouri we have specialized programs for women with children in which women—or children can come with their mothers to treatment settings.

Senator MURRAY. So, keeping them with their mothers.

Mr. STRINGER. Absolutely.

Senator MURRAY. Yes. Ms. Tanzman.

Ms. TANZMAN. We try to act a little earlier and work with women as they are pregnant to first of all get them in treatment. And so while we have very high rate of babies born exposed to opioids, that is often because their moms are in treatment, those children do very well, and in fact, our inpatient costs and length of stay for opiate exposed newborns is much less than the National averages. Indicating the difference between women in treatment and their outcomes compared to women who are using for instance, heroin from the streets.

We identify key linkage of programs to connect the OB/GYN and medical providers with our community partners. Our CHARMS program—Children and Mothers in Recovery—is an example of doing this through structured agreements between the different partners that play in children's care.

Expanding these types of services to not just the immediate birth and prenatal and postnatal period, but through 0 to 5, would make a really big difference, because that is such a critical window.

Senator MURRAY. Okay. I think this is so important because I hear so often that separating those mothers and sending those kids to foster care is actually the worst thing for the mother who is being treated, and obviously for the child, long-term. So, I am very interested in how we can do a better job here.

Senator BLUNT. Thank you Senator.

Senator Alexander.

Senator ALEXANDER. Thank you, Mr. Chairman and I want to thank you and Senator Murray for this hearing and for your early leadership on the opioids issue.

I often say to Tennesseans that I hope they look at Washington, D.C. as if it were a split screen television. Take last September, you had a big food fight over the Justice Cavanaugh nomination in one screen, but on the other screen you had 72 United States Senators of both parties working with five committees and House members to pass what the President said was "The most significant piece of legislation ever passed to deal with a public health epidemic." So, there is as Senator Leahy said, a strong bipartisan commitment to the subject we are discussing today.

We were careful in the bill that we worked on, Senator Murray and I are the ranking members on the committee that help do this, not to prescribe Federal prescription limits or a number of other Federal rules about how States dealt with the opioid epidemic. I have a strong bias about that as a former governor, and I'm glad we did that, because last week in our Health Committee we had a hearing on pain. And the reason we scheduled that was because whenever you have an action you usually have a reaction and when you take away what for many patients with chronic pain, the most

effective painkiller, you are going to create trouble for those patients, and we wanted to assess that.

As Chairman Blunt said, we knew that would—could be a problem and we have accelerated funding and consideration of alternative, non-addictive painkillers, but we have a ways to go. Many patients of chronic pain would not be completely satisfied, I don't think, Dr. Cropsey, with yoga and ibuprofen and therapy, as useful as they can be.

CDC OPIOIDS GUIDELINES

So, I wanted to ask you specifically about the Center for Disease Control guidelines. While the committee and the Congress did not prescribe a Federal law about prescription limits, CDC (Centers for Disease Control and Prevention) in 2016 did issue guidelines. And what we heard in our hearing is that many physicians, many people across the country accept those as law, and that even some physicians are completely giving up the prescription of opioids even in a small amount, for people who have had serious surgery for fear of getting in trouble with the drug agencies.

Do you believe, any of you, that the Center for Disease Control guidelines should be revised in any extent; and do you believe they are being taken as law when they are only advice?

Dr. Fotinos.

Dr. FOTINOS. That is an excellent question and I think it is complicated. I think that the message that a lot of physicians has gotten is that the opiate epidemic is their fault. It is their fault because they prescribed too many opioids and an obvious reaction to that has been, "Okay, well if it's my fault even though I didn't do anything, I'm just going to stop prescribing opioids altogether."

We know they don't work for chronic pain but I think when we have put so much emphasis on the fact that too many opioids are prescribed, and they are, there has been sort of, too-far of a pendulum swing.

I think that what we do not know is we do not know how many opiates are enough to treat particular types of pain. We know that more than a week is too many; we know that the longer people are on them the higher their risk of people becoming dependent is, so we know somewhere there is a right—

Senator ALEXANDER. Well, we had a witness who is head of the pain clinic at Mayo Clinic, who said that that depended on what a physician — and would say to a patient and that—and I pressed her a little bit for examples and she said, "Well, 3 days for maybe an emergency room problem or maybe as much as 16 days for after a knee surgery." Is there—that exceeds the CDC guideline.

Dr. FOTINOS. And, I think everyone is different. I think part of the challenge here is that we have to change how we talk about pain. Some pain is physical but a lot of pain is emotional and it relates not just to something we can see on an examination, and everybody's pain tolerance, and ability to manage it is different.

So, I think we have to, as providers, be thoughtful and taking care of the person in front of us, but from a larger population perspective we have to be mindful that often, too many medications are prescribed, and they are left in the community where they are

at risk of being used by people who either just want to see what it is like or who already have a dependency problem.

So, I do think they are reasonable guidance; should they be law, no, because everyone is different. That said, we know that there are too many opioids in the community that people have used and become dependent upon.

Senator ALEXANDER. Thank you, Mr. Chairman. My time is up but I expect we will be addressing this subject more in our HELP Committee.

Senator BLUNT. Thank you, Senator.

Senator Leahy.

AFFORDABLE CARE ACT

Senator LEAHY. Thank you Mr. Chairman, and Ms. Tanzman again, thank you for coming down from snow-covered Vermont to be here.

You talked about our hub-and-spoke system. 8,000 Vermonters in treatment for opioid use disorders, and I—in a State of around 600,000 people, that is a lot. What percentage of those 8,000 rely on Medicaid coverage?

Ms. TANZMAN. Well over 80 percent, Senator Leahy.

Senator LEAHY. How has the Affordable Care Act allowed Vermont to expand treatment?

Ms. TANZMAN. It has been incredibly important. I mentioned our Health Home State Plan amendment under section 2703 of the Act that allows us to create essentially a health home treating opioid use disorder as a chronic condition as you would any other chronic condition. We were able to use Medicaid funds, therefore, to support the nurses and counselors that we described deployed to the teams.

I would also like to say that the importance of insurance coverage for people to be able to stay in treatment, medication-assisted treatment is a long-term treatment, it is best given continuously over time, and so insurance coverage makes a critical difference. If you lose your coverage you may in fact, need to step away from treatment, which can be terribly dangerous.

Senator LEAHY. Thank you. And you mentioned the commercial coverage under a pilot in that. How did that improve access?

Ms. TANZMAN. Currently, if you are implementing a care guideline in for instance, a practice—a primary care practice, you want to treat all of your patients who have that condition with the same approach to treatment, regardless of whether they are insured or not. So for instance, if you are managing a panel for diabetes, everybody gets the same standard of care in your practice.

In our situation, because Medicaid is the only payer for the spokes staff and other payers do not pay for hub services, what happens is the Medicaid resources are spread more thinly across the whole population, because care providers are going to behave in an insurance agnostic way, as we want them to. So by increasing participation of other payers in medication-assisted treatment you allow that same standard of care to be supported across all of the people who have the condition.

CHILDREN AND RECOVERING MOTHERS COLLABORATIVE

Senator LEAHY. You know, when Senator Murray talked about pregnant women and the children, Vermont has worked to integrate medication assisted treatment on that. I'm told the program is called the Children and Recovering Mothers (CHARM) collaborative. How does that—what do you see from that in our State—because, and I mention this because we are such a rural State; you have some parts are very, very small. The town where my mother was born; the town my wife was born, very small towns. How does this work?

Ms. TANZMAN. So, it really works as an organizing structure to knit together the very different social service and healthcare service organizations that all have some responsibility for moms in early childhood. And it is a big complex number of different organizations that all have a piece of it.

And, so what they did with CHARMS, and then it has been—there are versions of this for instance, the Central Vermont Response Team in central Vermont, the SMART team in rural Northeast Kingdom, that combines collaboration between the healthcare providers so the OB/GYN or other providers who are taking care of a woman through pregnancy, because we need that expertise, married to the expertise of addictions treatment and care coordinators and also include partners often Probation and Parole may be involved, the Department of Children and Family Services may be involved.

And so what CHARM and all of these programs do is provide a small organizing backbone that helps integrate literally MOUs, or Memorandums of Understanding between all of the different partners about how they will each bring their unique expertise and resources to bear on a mom and her family and children. And so it is just an organizing framework to do what is essentially, a shared care plan.

FENTANYL

Senator LEAHY. And finally, I will submit some other questions for the record, but fentanyl—has that created as bad a problem as it appears to be?

Ms. TANZMAN. It is. Fentanyl is what is driving lethality, right now and it is—

Senator LEAHY. I see a lot of heads nodding yes. I think the whole panel—go ahead.

Ms. TANZMAN. And it makes me very careful about speaking about overdose death rates. We are I believe today in our largest city, in Burlington, there is a press conference that the mayor is holding because we have been able to in that region, in Chittenden County, to see a decrease in our overdose death rates.

But, if you look under the hood a little more, law enforcement will also tell you that the heroin supply coming into Chittenden County seems to be more of a black tar and does not seem to have quite as much fentanyl in it; whereas, the supplies coming in to southeastern Vermont have more fentanyl and we see continued spikes in overdose death rates. And so, it is like the wild card that can

drive lethality regardless of what we are doing in terms of service systems.

Senator BLUNT. Thank you Senator.

Senator LEAHY. Thank you, Mr. Chairman.

Senator BLUNT. Senator Capito.

Senator CAPITO. Thank you, Mr. Chairman. I thank you and the ranking member for this really great, informative panel. I want to thank Dr. Berry for coming from WVU. I thank you for your service and what you are doing today to help us understand it, and I would also like to welcome your wife Cindy, who I think is—I see her back there, and your son Noah. So thank you both for coming and for supporting this great—the cause that we have here.

I would like to go first. Well, I want to say something anecdotally because I think we need to make sure that we see that in 2015 this HHS funding in this area was \$271 million, in the last bill that we passed it was \$3.7 billion. I think there is a recognition with this panel and with all of your leadership, and certainly leadership in the Congress in general, that this is an emergency, a health emergency. Certainly West Virginia is having the highest overdose death per capita we know; we lived it, we know people, it is exceedingly sad.

WORKFORCE CHALLENGES

Dr. Berry, in an article you were quoted as saying, “The three hardest words for a user to say is, I need help. If they don’t get it when the window is open the opportunity quickly fades. Every community should be able to provide immediate access.”

I know that one of the things that you talked about and concerns really everybody on the panel, is the workforce challenges. How do you see that evolving in West Virginia? Do we need more para-professionals? Do we need more residencies in addiction treatment? How can we solve this problem?

Dr. BERRY. Yes, thank you, Senator. Absolutely. And you know, that—there is such a precious window of time that is an opportunity when people are ready to get help and we need to act on that as soon as we possibly can. And so there is nothing that has been more frustrating as a treatment provider over the last 15 years of doing this, to know so many people who have died on waiting lists.

Senator CAPITO. Right.

Dr. BERRY. People who have died trying to get into treatment, who wanted treatment.

Senator CAPITO. Is it getting better in terms of—

Dr. BERRY. So, in some ways it is getting better. Certainly, a number of the funds that we have been able to use through the STR and the SOR funds have helped. We have a dire need to increase the workforce, and I describe it as there are two generations that are affected by the addiction as far as suffering, but then there is also two generation of workforce areas that need to be developed.

We need to develop the areas of people who are current providers; these include the physicians, as well as social workers, as well as therapists, as nurses, PAs. So many of these providers have not gotten good addiction treatment in their training. We have

been woefully unprepared to provide that kind of training for existing providers. So we need to incentivize them and be willing to do it. They need to get reimbursed for the treatment; usually, costs a lot more to give treatment than the reimbursement that they get.

Senator CAPITO. Right.

Dr. BERRY. And then the other generation is the next generation of treatment providers that need to enter the workforce. So we need to do what we can to increase residency training slots, addiction psychiatry, addiction medicine slots, for instance, the Support Act with the \$25 million in funding that should go towards supporting residency loan repayment—

Senator CAPITO. Right.

Dr. BERRY [continuing]. Would be important, as well as the \$10 million in the Cures Act for the training demonstration programs. Give opportunities for these providers to learn how to do this in the rural setting, and once you have a provider in training to see treatment and see treatment works, then you have got them for the rest of their lives, because they know how valuable that is.

Senator CAPITO. Thank you. Thank you for that and we want to be supportive of those efforts because it is a spectrum disease, it—we have talked about children, babies. I would like to mention Lilly's Place in West Virginia does a great job with NAS (neonatal abstinence syndrome) babies treating them outside the hospital setting, keeping them as much as they can with the mother and it has been sort of, modeling across the country.

BUPRENORPHINE

I have also been impressed with what WVU is doing with their COAT buprenorphine program. Would you like to speak it—to that a little bit?

Dr. BERRY. Yes, I would love to. So, you know, this is a program that again, is one of those things that necessity is the mother of invention. We started prescribing buprenorphine in 2004 once we realized that there were not many other tools to keep people engaged in treatment and to keep them alive. And really when you are looking at any addiction or treatment for general there is two main goals. One is to keep the person alive and two is to increase their quality of life. We realized pretty quickly that if we were not offering buprenorphine people were not staying alive, and then we could not increase their quality of life. Once we started getting them on the medicine and keeping them in treatment, they started doing what they could to learn how to live. And we realized that if we just started doing this one patient at a time in a single medical visit, we were going to be swamped.

So, what we started doing was, we had group medical visits where we see 10 to 12 patients at a time within a medical visit directly linked after that with an hour therapy visit. And so we are able to have these small groups of patients who were able to help one another and then also get the help they need from us as the professionals, frequent visits as well.

And one of the things that we started doing in—in our MAT program is also having folks go to regular community peer support groups as well and making that a huge component. Because those

are in many of the communities and have a long—have a long track record of helping other folks.

Senator CAPITO. Right. Thank you. Thank you.

Dr. BERRY. Thank you.

Senator CAPITO. Thanks for being here.

Senator BLUNT. Thank you, Senator.

Senator Shaheen.

MEDICAID EXPANSION

Senator SHAHEEN. Well, thank you Mr. Chairman and thank you to you and Senator Murray for holding this hearing and thank you all very much for being here to testify and for the work that you are doing in your States.

I am thrilled that Dr. Pierce is here from New Hampshire, she heads, as she said, a recovery center in the Lakes Region of New Hampshire, which has been particularly hard-hit by the epidemic. And, I wanted to—I know that you wanted to respond to the question about what difference has Medicaid expansion made for treatment. Can I get you to do that now?

Dr. PIERCE. Yes, thank you for that question. So as a recovery community organization we are a local nonprofit, so we are always thinking about revenue sources and with the Medicaid expansion program, we have been able to now become certified at the National level and at the State level so we can begin billing Medicaid, as part of Medicaid expansion for recovery support services. So, these are for nonclinical services that are provided by peers in recovery themselves.

So we have created a system in which someone who with lived experience who is in long-term recovery, can become a certified recovery support worker. They actually have a profession, they get a certification at the State level and their work giving back to their peers is now billable through Medicaid.

Also through Medicaid expansion, recovery community organizations like Navigating Recovery are part of the integrated delivery network system in New Hampshire, and through that integrated delivery network system, we have been able to have incredible levels of care coordination.

We focus mainly on people with substance use disorder and high utilizers of the emergency department and we—through that we now have technical assistance that allows all community service providers to have a shared coordination care plan, which means that when somebody that we work with ends up in the emergency department we are immediately notified. If that person is also working with their mental health clinician, that clinician is notified; their primary care physician is notified. So we are all on the same page about where that person is in real time and we can—you know, have intervention in that moment.

RECOVERY SERVICES

Senator SHAHEEN. One of the things that several people mentioned is the importance of the recovery services that are available. I think one thing that we are now beginning to recognize, and I know everybody here understands this, but that substance use dis-

order is a chronic condition. It is something that has to be treated throughout your whole life.

So, can you talk about how important those recovery services are to people as—who may have gone through, maybe getting medication-assisted treatment and other treatment plans, but who really need the services that come through recovery centers.

Dr. PIERCE. So, recovery supports are provided before, during and after treatment. So it allows somebody to establish a connection with a recovery coach that will be with them for as long as they need that person in their life.

So, one, it is free other than billing Medicaid, so it is affordable for somebody who is maybe experiencing other high costs of treatment. We help somebody with employment, housing, transportation, getting their children back. We work with probation and parole. We work with educational programs, prevention and intervention, so if their children are in high school or at an appropriate age where we can work with them, we start working with them as soon as we can.

So we map out recovery at the whole life process, not just abstinence from alcohol and other drugs, but everything else that is involved in someone's life, a recovery support system is what helps as the basis of that.

IMPORTANCE OF FEDERAL FUNDING

Senator SHAHEEN. Thank you. One of the things that Senator Capito talked about was the increase in resources, and I think everybody who spoke talked about how important that increase has been to address this epidemic in your States.

Can I just ask each of you to give a very brief answer to what is the alternative if this Federal funding goes away? What do you see coming in to replace it, and what will happen in your State to address this epidemic?

I will ask you to go first Dr. Pierce.

Dr. PIERCE. Well as a small nonprofit, I am thinking bake sales. [Laughter.]

Senator SHAHEEN. Yes. So, there is no alternative.

Dr. PIERCE. Right. No.

Ms. TANZMAN. People would lose access to treatment and you would stop developing strong systems of care for addictions.

Senator SHAHEEN. Dr. Cropsey.

Dr. CROPSEY. In Alabama as a clinician before these Federal funds, I had no place to refer people with addiction who were uninsured. So, we would go back to those days when people just die.

Senator SHAHEEN. Mr. Stringer.

Mr. STRINGER. Yes, Senator we would definitely have to take a step backwards, particularly in terms of the number of people that we can serve with evidence-based treatments.

Dr. FOTINOS. In Washington, one of the most successful ways in which we have increased the ability to provide medication is to provide practices with nurses and care coordinators to support them; the Federal funds support those folks. Providers would not be able to treat the number of people that they do, and more folks would die.

Senator SHAHEEN. Dr. Berry.

Dr. BERRY. We will fight as hard as we can, but my fear is that we would continue to see the death rate increase exponentially.

Senator SHAHEEN. So it sounds like you would all agree that the progress that we have made in addressing this epidemic is directly related to the Federal resources that have been available, and that we need to make sure that those resources continue to be available if we are going to defeat this epidemic.

Thank you, Mr. Chairman.

Senator BLUNT. All right, thank you Senator.

Senator HYDE-SMITH.

TELEMEDICINE

Senator HYDE-SMITH. Thank you, Mr. Chairman and ranking member and thank you for the panel that is here today. It sure has been informative.

You know, I live in a very rural State like many of the other members here, in Mississippi, and it is a great place to be but it is challenging when we have the addiction problems and trying to treat that.

We have set up a program through the University Medical Center and the Department of Mental Health that does provide the Telemed programs, that, you know, when somebody has a severe addiction, or moderate addiction that, they have availability to.

Dr. Cropsey, can you tell us maybe, anything in Alabama, because I am relating to you and that southeastern corner of the United States that you have done that can address this rural issue in making sure that those who live daily with addictions, that we are doing all we can do. I compare Mississippi to Alabama in many cases and, as I said, a great place but just, the challenges are there. Do you have any insight or something you could share, possibly, maybe similar to Telemed programs?

Dr. CROPSEY. To be honest, in our rural communities it is still a very—it is very challenging. People will try to come to Birmingham and other places—medical centers to get treatment, but we do not have as many programs as we need. It is a—it can be a very resource poor State in that way, I guess, similar to Mississippi.

So, you know, I think naloxone has been a harm reduction strategy that has been helpful, but again, trying to reach people in the rural community has still remained a challenge.

Senator HYDE-SMITH. That is—well, thank you for sharing what you have.

Mr. Stringer, can you tell us more about how the Missouri Department of Mental Health is partnered with the Missouri Telehealth network to address the opioid epidemic?

Mr. STRINGER. Sure, Senator. That is a great question we have—of the people we serve with our SOR and STR dollars, about 30 percent have had some kind of Telehealth service, and most of those are people who are in very rural settings. So, that is one way that we have partnered, and that project is expanding.

The other one, I think the other partial solution to the rural situation is just very aggressive training of people who are certified peer specialists; people who been there, people who can go out, can spread out across the country, across the State and be available to

make connections, to make human connections with people, to facilitate connections to Telehealth and then to be there for recovery support.

Senator HYDE-SMITH. Thank you very much. And one more, since I have a little time.

OPIOID RESEARCH

You know, of course the opioid misuse is growing no doubt, but methamphetamines and the synthetic products like spice remain, you know, just a huge substance abuse challenge in Mississippi.

Dr. Berry, have you found that the additional opioids research have helped also address other abuse of other drugs like, the meth?

Dr. BERRY. Yes, you know, what we are seeing is again, that this is constantly evolving. So what has been good as far as the attention that has been placed on the opioids, it is—helped us really focus on strategies that work. I would say, and argue that, from my experience in what I see nationally, and based on the evidence that the best strategies incorporate not only medications, when possible. We have medications for opioids; we do not have medications for methamphetamine.

So, if we could develop and continue to pour research dollars into developing medications like we have for the opioid users, that would be great. But we have also got time-tested psychotherapies and social therapies as well that have been around and that we have known those are effective, and as much as we can, incorporate every piece of those elements. Those are things that we have learned and we can continue to build upon, but we need to have these systems in place so that people can access this care and work through those systems.

Senator HYDE-SMITH. Good. Thank you very much, Mr. Chairman.

Senator BLUNT. All right, thank you Senator.

Senator Manchin.

Senator MANCHIN. Thank you Mr. Chairman, and thank all of you. I am so sorry, I was in another meeting and—Energy—enough—I am sorry.

Senator BLUNT. No, no you are fine.

COMPREHENSIVE OPIATE ADDICTION TREATMENT CLINIC

Senator MANCHIN. You sure? Energy and Resources—and I am sorry I missed some of this, but it is so important.

Dr. Berry, it is really good to have you here and your wife Cindy, and know I see them in back and I appreciate everybody coming.

We have had many conversations and I do not think—I do not need to reiterate what Senator Capito has spoken about, about the horrific rate, that, and the scourge it has caused in our State. We led the Nation in drug overdose again, over 2½ times the National average. We have talked about that. It shows it is an 11 percent increase compared to the States 2016 rate; preliminary data shows the prescription opioid deaths fell in 2018. The numbers overall remain high with an increase of synthetic opiate deaths that we have been talking about, and West Virginia remains the hardest hit in the Nation.

I want to talk about, Dr. Berry, if you can, on the comprehensive opiate addiction treatment clinic, or the COATs; what we have been doing, what you have done, what extent that has been going around the State. If you have been able to expand upon that, has other parts of the State taken that up, any other parts of the country. Have they worked with you or reached out?

Dr. BERRY. Yes, they have. Just to give you kind of a picture and the context of the problem, there was a time when we were treating 500 patients within our university-based treatment program and had about 600 people on the waiting list to try to get in.

And once we were able to have resources from, like the STR, initially and then the SOR funds, and now the State decided to make a concerted effort to try to expand the model that we found worked, then we were able to develop somewhat of a hub-and-spoke type model where we train some of these other providers at local communities to become experts in this. The idea being learn one, teach one or do one, then teach one.

Since that time we have been able to expand to another about 550 patients that would not have been able to be treated before, and patients who are closer to their local home, because it is so important that if we are—again, looking at this as a long-term chronic condition, that we need to be able to keep people in their communities. They may have to go somewhere else to get stabilized, that may be the case but not always, but—the primary mission is to get them back home, get them back in their communities and have treatment providers who are competent and capable to do that then.

Senator MANCHIN. Let me just speak to that because that is the biggest challenge we have. Our State, because of the addiction all over our State, every community could warrant having an addiction center, basically a treatment center.

Dr. BERRY. Yes.

Senator MANCHIN. We do not have the resources for that.

Dr. BERRY. Yes.

Senator MANCHIN. I have a bill called Lifeboat, and I would encourage all of my colleagues here—Lifeboat basically says this, the pharmaceutical industry, basically has put a product out that they knew it was a business model, it was not a healing or a health model. The opiates come on the market, did not come on basically to try to relieve your pain or help you improve the quality of your life. They come onto addict you and basically hold you hostage for what is happening in this pharmaceutical industry.

So I said this, they should pay at least one penny per milligram for every opiate that they produce and sell in America. That one penny produces over \$2 billion a year. Two billion would go over the most affected areas that got hit the hardest. We could help rural areas, we cannot help them now. In your State, we—there is not enough money going around. Dr. Berry will tell you in our State, the hardest hit county I have is down in McDowell County, right? Not one center can—treat down there, and the people do not have enough money to travel anywhere to treat.

This is—not, it is—and we have not even seen the tip of the iceberg. Look at the children that are being affected. What is coming on in the next decade? We have not even seen what is going to, yet.

If you think you have got it bad now, you wait another 10 years and see.

LABELING OPIOID PRESCRIPTIONS

So anything labeling. One little thing. We will go on. I led a bill now and all of our colleagues are on this, it is labeling, changing the labeling of how you use these opiates. It is not for long term, these were supposed to be intended for short-term use basically not even be used out of the hospital and if so, only for 2 or 3 days. Do you think, and I would—I guess it would be Dr. Cropsey—if you could comment on that because—do you think that would be a step in the right direction to help a little bit? Because the doctors have not done it voluntarily, they are just giving it out like M&Ms.

Dr. CROPSEY. Yes. I think that that could be one solution you know, and I mentioned before the alternatives to therapies for chronic pain. This is something that should start at the beginning rather than opioids as the first step for chronic pain. And now we are in a situation where we have a lot of people who are prescribed opioids for chronic pain and we do not know the best strategies to try to get them transitioned to something that is not an opioid.

We know that when we start reducing their opioids some people will relapse and will relapse to other drugs like heroin or fentanyl. So, it is really—it is very much a problem that we need to—some answers through research to try and figure out. Also, how to best detox people is also another important issue.

Senator MANCHIN. But would you all support the labeling, changing the labels on opiate prescriptions?

Dr. CROPSEY. I think that might be a very good idea.

Senator MANCHIN. Any comments on that, because my time is up. I am so sorry. You want—real quick?

Ms. TANZMAN. Our health commissioner, Commissioner Levine would say in—we prescribed, so, probably too many opioids too long and too often. In Vermont we are seeing a decrease in the number that we are prescribing and clearly the labeling is saying take as prescribed should really be more like take as needed, for example, and—

Mr. MANCHIN. How about no longer than 3 days?

Ms. TANZMAN. Right, but, even so with our decrease right now in prescribing, we are still prescribing three times as many as we did in 1999.

As a Medicaid payer we are really struggling to figure out, well, now what should we be buying in terms of chronic pain management, because we cannot just take one tool away and not have it create tremendous pain and suffering for people who are, in fact, accustomed to using these opioids long term.

Senator BLUNT. Thank you Senator.

Senator Rubio.

MEASUREMENT OF OPIOIDS

Senator RUBIO. Thank you all for being here. A lot of attention gets paid to the problem overall and there has been some questions already about opioid use for chronic pain. I do not know what the numbers are at this point, but back in 2011, 25 percent of disabled Medicaid beneficiaries under 65 were using an opioid for chronic

pain. I do not know if that number has declined, or what have you, but, there are a couple of things I think that are interesting tools and I wanted to get your perspective.

The first is the, maybe I am saying it the wrong way, the morphine equivalent calculation. I know Washington State is an example, as one State that has one of these tools available online, and I know practitioners in the pain field do use it.

There is a correlation even. There is no safe use of opioid for chronic pain, but there is a correlation between the morphine equivalent and the rates of opioid dependence. There is a terminology used that is not your typical when users are out there in the street shopping for opioids, but after chronic opioid use for a specific period of time there is some level of dependence and that lessens when you get under a certain morphine equivalent.

Is that a tool that is widely available, the morphine equivalent calculator for all practitioners? Is that tool being applied in the pain management field, in general?

I don't know who to give it to but, whoever.

Dr. FOTINOS. I can just comment from Washington's perspective. It is a tool that you can find a number of different calculators on line, so there are availability tools. I believe Oklahoma actually puts that into their prescription monitoring program so that when something is prescribed, and then these will show up. So there are some clever ways to do that, and you are absolutely right, the higher the dose of opiate morphine equivalence that someone's on, the greater the risk of overdose death.

What we also know in Washington is that the majority of people who died of an opiate related overdose death have other drugs with them. So it is just as important to be mindful of prescribing any other sedative drugs, like Valium, or other benzodiazepines or—

Senator RUBIO. Anything that is respiratory or that is suppressive.

Dr. FOTINOS. Absolutely, and so the combination is equally important to be mindful of the amount.

Senator RUBIO. But, in the—just in the prescription field, when a practitioner has that calculator available it is not just about the milligrams, you know, 50 milligrams of one thing is not the same of another substance. So, in order to find sort of, not just a lower intensity drug, but to ensure that the dosage level is safe—the higher you get in that scale of morphine equivalent—is that an accurate and good measure of risk even in the acute phase?

Dr. BERRY. Yes, it is an accurate measure.

Senator RUBIO. And is widely used?

Dr. BERRY. I cannot speak for other States. I know that in West Virginia it is part of our prescription drug monitoring program and then also, at least in our university-based setting you have the tool available, so you could always immediately just hit a button and calculate that.

Dr. FOTINOS. I would add that the one challenge we faced, we have put in some prescription limits and trying to make folks mindful of the MME, but people who are on methadone for long-term treatment for their opiate use disorder, or even buprenorphine now, you kind of have to throw those calculations

out of the window, because their—have developed tolerance with their treatment.

Senator RUBIO. Right.

Dr. FOTINOS. So, they will require a lot more medication in the event of a surgery or an injury.

CHRONIC OPIOID USERS

Senator RUBIO. Well, and at its core the reason why opioid use for chronic pain is problematic is because there is no dose you can sustain for the rest of your life; you will develop a tolerance and have to continue to increase it until you get to levels that are problematic.

So, here is the second question, just hypothetical. A 52-year-old disabled, Medicaid recipient was injured in a workplace accident years ago, suffers from chronic pain, and has been on different pain medications over the years.

This person is functional. It is not somebody who is overdosing. There are a lot of people out there that fit this mold, right? They are not overdosing, they are not out there, you know, shopping in the street or what have you, but if they stop using from one day to the next they are going to have real problems for a significant period of time.

What do you do for someone like that, do they go into a treatment center? Do they go to their physician or for a tapering schedule; how is that demographic managed? Because I think that is the piece that does not show up at the emergency room overdose but has a problem that if they were cut off from a supply because of some new law. They are going to have some really bad days ahead of them, and could lead to some of those behaviors.

Ms. TANZMAN. Absolutely agree. And as physicians and practices begin to look at their patients who they are prescribing high levels of MME equivalents to, we are finding them systematically in our primary care roles and in other roles.

We are struggling to figure out what are the best range of treatments to help provide as alternatives and also, how to help focus more on people's functioning like walking and moving and working, not so much on their pain symptoms, because we may not be able to fully remediate the pain symptoms, but the importance of improving function has all of the difference in terms of quality of life.

Senator BLUNT. Thank you, Senator.

Senator Durbin, and then if anybody has second questions, we will have a few minutes for them.

Senator Durbin, thank you.

PRESCRIBING GUIDELINES

Senator DURBIN. Yes, Mr. Chairman, a few years ago there was a committee hearing and they disclosed that the pharmaceutical industry asked for permission to produce 14 billion—14 billion opioid doses a year—14 billion. So that every adult in America could then fill a prescription for 3 weeks of opioids. I thought to myself, How did they ever come up with 14 billion and who approved it?

Well, they came up with 14 billion because they thought they could make money selling 14 billion opioid doses and it was ap-

proved by the Drug Enforcement Administration of the United States Government.

Think of that. At a time when we are facing the worst drug epidemic in our history, a Government agency is giving this industry permission to make 14 billion tablets. And how does that fit with what the CDC sends out as a notice to doctors? It says here "When you prescribe, doctor, start low and go slow. For acute pain—acute pain—prescribe fewer than a 3-day supply, less than a 3-day supply, more than 7 days rarely required."

And here the industry, the pharmaceutical industry, asked for 14 billion opioid doses despite another agency in the Government saying, "This is preposterous. It is beyond any good medical practice."

So, being a Senator, I decided to raise hell, about 14 billion and boy did we make progress. You know what we now have as an annual production quota? Thirteen billion.

[Laughter]

Senator DURBIN. Thirteen billion, and we are having hearings here about figuring out what to do with the results of that. And the thing that troubles me greatly is, we dance around the obvious. We dance around the fact that somebody is writing a prescription for opioids to reach 13 billion, or something near it. Somebody is ignoring this and the somebody is a doctor, or a dentist, or a nurse practitioner.

What is going on here? Why are they not responding to this crisis? Why not have some real response when it comes to prescribing? What have you seen in your own States? Have the medical societies and doctors awakened to the reality that they are pushing more pills than can possibly be justified under CDC guidelines?

Anybody? Yes, Dr. Fotinos.

Dr. FOTINOS. We have seen a decrease in the number of prescription opiates prescribed over the last several years of about 44 percent and that is—I think a lot of reasons for that, one of the things that we have been more successful at recently is giving reports to providers. Some of the Washington State Hospital Association decided to, by large healthcare institutions, get the reports of their prescribing doctors by specialty. So, they show them here is how many chronic opioids you prescribed; here is how many you prescribed with people on sedatives and hypnotics.

And one thing a provider does not want to do is be different in a bad way from their peers. So, they have also looked at that to say, are you following prescribing guidelines? And that sort of individual feedback has been really helpful in correcting some provider behavior. That is one of the tools we have used.

FEDERAL FUNDING PRIORITIES

Senator DURBIN. I sure hope we do. In Illinois, we wrote to all the medical societies, only one, the Chicago Medical Society said continuing medical education was going to be required of every doctor to come in and pay attention to this. In the meantime there are courts where these doctors who ignore this can be held responsible for violating a standard of care.

I only have a minute and a half but I want to make one point. This is an Appropriation Subcommittee. I am honored to be on it.

We talk about money. We are providing some money to you and your States, as we should, to face this drug epidemic.

When Senator Shaheen asked the question, I believe it was Dr. Pierce who said if we did not get this money we would have bake sales to try to deal with it.

So I want you to reverse your thinking to an alternative universe for a moment. In 1998 we reached a master tobacco settlement agreement, we sued the tobacco companies across the board. State after State ended up recovering \$250 billion over 25 years and the purpose of that, among other things, was to respond to the tobacco public health crisis. What happened? The money was diverted. The money was spent on highways, and stadiums, and pension fund liability issues in the States.

Now there is currently a case pending in Cleveland, and this case, this multidistrict Federal litigation could in a matter of weeks, come up with a similar settlement against the pharmaceutical industries and the opioid producers. They could conceivably decide to dedicate some of that money to try to respond to what we are talking about today in this hearing.

My question to you and the organizations you belong to is, What should we ask for? What are the top three things we should ask this court to consider when it comes to this drug epidemic? Is it loan forgiveness for those who will major or get graduate degrees in areas where we do not have enough professionals? What is it? Have your organizations or any of you thought of the highest priorities that you would spend Federal dollars on to deal with this?

The floor is open for a few minutes, a few seconds.

Dr. BERRY. Sure. I had mentioned earlier about the importance of the workforce and that we need to equip the current treatment providers and the future treatment providers. And so, the Support Act as well as the Cures Act, and loan forgiveness, as far as the training programs that are so necessary. So if we need to be thinking in the future of how we are we are going to have any ability to counteract this epidemic, we need to have people who are working in it.

Senator DURBIN. Thanks.

Thanks, Mr. Chairman.

MENTAL AND BEHAVIORAL HEALTH

Senator BLUNT. Let me get to another topic here on the question of what we would do without this \$3.7 billion. I just want to be sure the record reflected that in 2015 we had the Affordable Care Act, this is not in my view a hearing about that. We had States—most States that were going to expand Medicaid, had, but that was not doing the job; in 2015 60 percent of the people estimated that needed mental health help did not get it; 25 percent of that 60 percent did not know where to get it, and some others just chose not to get it but it generally was not available.

I continue to think that treating behavioral health like all other health is important addition to our system.

So, Director Stringer, we are one of the eight States in the eight State pilot, where we are doing that with certified community behavioral health centers. You and I were at one of them last Friday

and really one of the most rural counties in our State. We had pretty good access for this pilot period all over the State.

Would you talk a little bit about how that was—that being available at the same time we got into the opioid response, made a difference in how our State could respond to that.

Mr. STRINGER. Sure, Senator—and we heard from a lady at the roundtable who benefited from the comprehensive set of services that were available there, so that she was able to get treatment for her substance use disorder, as well as for her mental health needs, as well as for her living needs, and consequently was successfully in recovery.

So I think the comprehensive approach that you and Senator Stephen Allen have designed has really, again—it has transformed healthcare. And when I say healthcare now, in the spirit of what you are talking about, I am including mental healthcare and substance use disorders.

So, when we—when someone comes in to one of our certified community behavioral health clinics now, they are seeing not as a diagnosis but as a person with complex needs that we address in a holistic way, and as thoroughly as possible. And we continue those services so that person gets in recovery, stays in recovery, and thrives.

Senator BLUNT. Beginning to see at any emergency room numbers responding to that or part of the pilot is to, frankly, see what impact this has on people's overall health needs if you are also being—treating their behavioral health needs like you would treat any other health problem. Do you see, 2 years into this or a year and a half into this are you beginning to see anything you can share with us?

Mr. STRINGER. Yes, we have absolutely seen improvements in a number of domains, and I can get that data to you Senator.

Senator BLUNT. Okay.

Mr. STRINGER. But, we were followed out—as Dr. Gaudi and I left the roundtable discussion we were followed out by a juvenile judge who came up to our vehicle and was saying how much he appreciated some of the services made available through the CCBAC, that were again comprehensive, that were—that allowed us to go into schools, that allowed us to go really, where people are, find them, and give them the assistance that they needed.

So we are seeing improvements in healthcare, we are seeing improvements in a criminal justice system, we are seeing improvements in employment, and just, an overall quality of life.

Senator BLUNT. Right. In one of the—Oklahoma is one of the other States. And I was in a meeting the other day where they said at one of their major hospitals that has developed through the law enforcement and other network, other places to go, a 70 percent reduction in the emergency room in that system. Because almost all of the behavioral health people that were coming there now have a better path to somewhere that they can not only just go that night but can also begin to develop a permanent place to be.

Senator Murray.

CDC FUNDING

Senator MURRAY. Yes, thank you Mr. Chair, and I just have one more appropriations related question. On the CDC funding side of this, in addition to the new funding that this subcommittee provided to States through block grants, we did give CDC a lot of new money to address opioids through a public health approach.

Let me just ask you quickly, Dr. Fotinos, What are some of the investments, for example Washington State made with that, those dollars?

Dr. FOTINOS. A number of the CDC funds have been used for overdose prevention, so helping to establish a training program to put naloxone out in the communities to train the providers, train first responders. We have seen a huge uptake in utilization and dispensing of naloxone and the numbers of folks that are receiving it for overdose reversal.

There has also been some of that money used to increase surveillance, so when someone is admitted to the emergency room that is—we are developing a system to sort of, have that real time notification. We also have a hospital and an emergency room based system called EDIE that also can generate notices to providers when their patients show up for an opioid overdose.

A lot of the money has been sent to local health jurisdictions to help them figure out what they need regionally to respond to the epidemic. And some of those funds have been used to support staff to work on overdose reports; some of the ones I mentioned earlier that we can give feedback to providers, who may or may not know their patient has experienced an overdose.

Senator MURRAY. Okay, some of the rest of you can give the committee response back in writing about how some of that funding is being used.

And Dr. Fotinos, is it true that your grant funding ends in August?

Dr. FOTINOS. There are a number of different CDC funds. I can look and share with you a list of the Department of Health, how they are spending those monies and the duration of them.

Senator MURRAY. Okay. I just wondered what would happen if that grant is not continued.

Dr. FOTINOS. Well, we do know that the staffing that provide the overdose reports is going away, but the hospital association has picked that up and the Department of Health has received some funds to continue that at a different level. But again, we would reduce the ability to train folks to use naloxone, some of those surveillance activities would be cut. Some of that money has also been used to help train coroners who may not be medically trained to accurately identify overdose deaths so that we could actually have an accurate count. It is also being used to improve some of our surveillance systems so we can know how many babies are born affected with substance exposure. So really it is being used to help support infrastructure as well, so we can get accurate information and respond.

Senator MURRAY. Okay, very helpful. Thank you, Mr. Chairman.

SUBCOMMITTEE RECESS

Senator BLUNT. Well, thanks Senators. Thank you all of our witnesses, we really appreciated what you—the information you brought to us today.

The record will stay open for one week for additional comments. The subcommittee will stand in recess.

[Whereupon, at 11:51 a.m., Thursday, February 28, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

MATERIAL SUBMITTED FOR THE RECORD



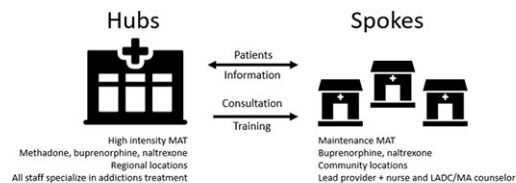
Hub & Spoke

Vermont's Opioid Use Disorder Treatment System

Hub and Spoke is Vermont's system of Medication Assisted Treatment, supporting people in recovery from opioid use disorder. Nine Regional Hubs offer daily support for patients with complex addictions. In over 75 local Spokes, doctors, nurses, and counselors offer ongoing addiction treatment fully integrated with general healthcare and wellness services. This framework efficiently deploys addictions expertise and helps expand access to opioid use disorder treatment for Vermonters.

Medication Assisted Treatment: The Evidence-Based Approach to Opioid Addiction

Medication Assisted Treatment (MAT) uses medication such as methadone and buprenorphine, as part of a comprehensive opioid use disorder treatment program that includes counseling. Medication Assisted Treatment is not the only treatment for opioid addiction, but it is the most effective treatment for most people. It is supported by the American Medical Association, the American Academy of Addiction Psychiatry, and the American Society of Addiction Medicine. Federal regulations designate two settings where Medication Assisted Treatment can take place, Opioid Treatment Programs (OTPs) and Office Based Opioid Treatment (OBOT) settings. Vermont takes this structure as a starting point, and strengthens and connects the elements.



Hubs Offer Intensive Treatment for Complex Addictions

Hubs are Opioid Treatment Programs, with expanded services and strong connections to area Spokes. There are currently 9 Hubs in Vermont. Each Hub is the source for its area's most intensive opioid use disorder treatment options, provided by highly experienced staff.

- Hubs offer the treatment intensity and staff expertise that some people require at the beginning of their recovery, at points during their recovery, or all throughout their recovery.
- Hubs provide daily medication and therapeutic support.
- Patients receiving buprenorphine or vivitrol may move back and forth between Hub and Spoke settings over time, as their treatment needs change.
- Hubs offer all elements of Medication Assisted Treatment, including assessment, medication dispensing, individual and group counseling, and more.



- Additional Health Home supports are made available at Hubs through the Hub & Spoke staffing and payment model. These include case management, care coordination, management of transitions of care, family support services, health promotion, and referral to community services.
- In addition to treating their own patients, Hubs offer trainings and consultation to the Spoke providers.

Spokes Provide Ongoing Treatment in Community Settings

Spokes are Office Based Opioid Treatment settings, located in communities across Vermont. At many Spokes, addiction care is integrated into general medical care, like treatment for other chronic diseases.

- The Spokes are mostly primary care or family medicine practices, and include obstetrics and gynecology practices, specialty outpatient addictions programs, and practices specializing in chronic pain.
- Prescribers in Spoke settings are physicians, nurse practitioners, and physician's assistants federally waived to prescribe buprenorphine. They may also provide oral naltrexone or injectable Vivitrol.
- People with less complex needs may begin their treatment at a Spoke, other patients transition to a Spoke after beginning recovery in a Hub.
- Spoke care teams include one nurse and one licensed mental health or addictions counselor per 100 patients. These Spoke staff provide specialized nursing, counseling and care management to support patients in recovery, this staff assures team-based care and helps primary care providers balance MAT patient care with the needs of their full patient panel.

State Oversight, Supplemental Funding, Quality and Measurement Support

- The Hub & Spoke concept was first introduced by John Brooklyn, MD and the model was designed and operationalized by the State of Vermont through the Blueprint for Health, the Department of Vermont Health Access, and the Vermont Department of Health's Division of Alcohol and Drug Abuse Programs.
- The State of Vermont pays for Hub and Spoke services via Medicaid. The Hub programs bill a monthly bundled rate, and the Blueprint distributes funds to support Spoke staffing through its existing Community Health Team payment infrastructure.
- The State of Vermont provides oversight for the program, helping communities monitor treatment needs, waitlist length, average time to treatment, and program performance.
- The Blueprint for Health provides each Vermont community with a data profile showing Hub & Spoke patient demographic data and key program measures, to support data-driven quality improvement.

Evidence of Program Impact

- Access to treatment has grown since program inception, with more than 6000 people now participating.
- The Blueprint for Health uses claims and clinical data to evaluate program impact and program costs. The Blueprint is working with other state agencies to incorporate additional data, such as Corrections data, into its evaluation.
- A peer-reviewed article published in the journal *Substance Abuse Treatment* showed that health care costs for Vermonters in Medication Assisted Treatment were lower than for Vermonters with opioid addiction not in Medication Assisted Treatment, even when including the substantial treatment costs.

PROGRAM OVERVIEW

INTRODUCTION

Vermont is proposing a Medicaid Health Home program under Section 2703 of the Affordable Care Act to create a coordinated, systemic response to the chronic condition of opioid addiction among Vermont's Medicaid population; these individuals also are at risk of developing additional chronic conditions including alcohol abuse, depression, and anxiety. The Health Home initiative focuses specifically on enhancing the provision of Medication Assisted Therapy (MAT) for individuals with opioid addiction. MAT, such as methadone and buprenorphine in combination with counseling, is recognized as the most effective treatment for opioid addiction.

The Health Home initiative will be implemented state-wide in three phases by region through sequential State Plan Amendments beginning January 1, 2013, in the Northwest region of the State. Phase Two begins July 1, 2013 in Central and Southeastern Vermont. Phase 3 begins January 1, 2014 in the balance of the state.

Health Homes for Vermonters with opioid addiction have two related service provider configurations: "designated providers" called *Hubs*, and "teams of health care professionals" called *Spokes*. New clinical staff is added to both the *Hubs* and the *Spokes* specifically to provide the six Health Home services.

The *Hubs* are regional specialty addictions treatment centers regulated as Opioid Treatment Programs (OTP) and are operated by community behavioral health agencies. Vermont will develop five *Hubs* to provide regional, specialty Health Home and MAT services. The *Spokes* are teams of health care professionals led by physicians who prescribe buprenorphine in practices regulated as Office-Based Opioid Treatment Programs (OBOT). Vermont will embed teams of health care professionals within each OBOT physician's practice to provide the Health Home services. Payment methodologies, one for *Hubs* and a different one for *Spokes*, are built upon the existing payment infrastructure of their service provider configurations.

CHRONIC CONDITION OF OPIOID ADDICTION

Substance addiction includes a set of cognitive, behavioral and physiological symptoms in which a person continues to use the substance despite significant substance-related problems. The repeated use of opioids results in patterns of tolerance (requiring increasing doses of the substance to achieve effects) and withdrawal (a set of physiological symptoms) for most people. However, in addition to tolerance and withdrawal, individuals with addiction also exhibit compulsive drug taking due to intense feelings of "craving" for the substance. Opioid addiction

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includes compulsive, prolonged self-administration of opioid substances that are not for a legitimate medical purpose and are used in doses that are greatly in excess of the amount needed for pain relief.

Opioid addiction is a chronic, relapsing illness diagnosed by a physician based on the presence of at least three of seven criteria over a 12-month period. Medication Assisted Therapy (MAT) is defined by the Center for Substance Abuse Treatment (CSAT) as “the use of medications, in combination with counseling and behavioral therapies, to provide a whole patient approach to the treatment of substance use disorders.” The two primary medications used to treat opioid addiction are methadone and buprenorphine. Individuals with opioid addiction may remain on MAT indefinitely, akin to insulin use among people with diabetes.

BUILDING BLOCKS FOR HUB AND SPOKE HEALTH HOMES

Global Commitment to Health 1115 Demonstration

The majority of Vermont’s Medicaid program operates under the Global Commitment to Health Demonstration. The Global Commitment (GC) Demonstration extends until December 31, 2013, with the expectation that it will be continued after that date once the terms are revised to reflect changes under the Affordable Care Act. The GC Demonstration will also provide the foundation for the State Plan Amendment proposal under section 2703 of the Affordable Care Act.

The GC Demonstration operates under a managed care model that is designed to provide flexibility with regard to the financing and delivery of health care in order to promote access, improve quality and control program costs. The Agency of Human Services (AHS), as Vermont’s Single State Medicaid Agency, is responsible for oversight of the managed care model. The Department of Vermont Health Access (DVHA) is the entity delegated to operate the managed care model and has sub-agreements with the other State entities that provide specialty care for GC enrollees (e.g., mental health services, developmental disability services).

One of the major drivers for entering into the GC Demonstration was to help bend the curve on the growth of Vermont’s Medicaid costs – a goal that has been achieved. Vermont’s actual spending over the 8.25 years of the waiver is projected to be \$8.2 billion -- \$650 million less in expenditures than projected without the waiver (i.e., Demonstration savings). There are a number of ways the GC Demonstration has helped Vermont achieve this success. First, the waiver provides the State with the ability to be more flexible in the way it uses its Medicaid resources, enabling Vermont to fund creative alternatives to traditional Medicaid services that improve quality of care and control costs. Examples of this flexibility include the following: new payment mechanisms (e.g., case rates, capitation, combined funding streams, capacity-based payments)

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rather than fee-for-service; the ability to pay for services not traditionally reimbursable through Medicaid (e.g., pediatric psychiatric consultation), and; investments in programmatic innovations for Medicaid beneficiaries (e.g., the Vermont Blueprint for Health).

Blueprint for Health

The *Blueprint for Health* (Blueprint) is Vermont's state-led reform initially focusing on primary care in Vermont. Originally codified in Vermont statute in 2006, then modified further in 2007, 2008, and finally in 2010 with Vermont Act 128 amending 18 V.S.A. Chapter 13 to update the definition of the Blueprint as a "program for integrating a system of health care for patients, improving the health of the overall population, and improving control over health care costs by promoting health maintenance, prevention, and care coordination and management."

Under the Blueprint, Vermont's primary care practices are supported to meet the National Committee for Quality Assurance (NCQA) Patient-Centered Medical Home (PCMH) Standards. In addition, primary care practices in collaboration with local community partners plan and develop *Community Health Teams* (CHT) that provide multidisciplinary support for PCMHs and their patients. The teams are scaled in size based on the number of patients served by participating practices within a geographic area called a Health Service Area (HSA) at a ratio of five FTE for every 20,000 patients served. CHT members are functionally integrated with the practices in proportion to the number of patients served by each practice. The CHTs are a core resource available to the patients and the practices free of barriers (e.g., co-pays, fees) because they are funded by Vermont's large health insurance payers; BCBSVT, Cigna, MVP, Vermont's large self-insured plans, and Medicaid and Medicare all participate (Vermont is part of the national Multi-Payer Advanced Primary Care Practice Demonstration). This support and the Blueprint's statewide implementation make Vermont's PCMH initiative unique in the nation.

Blueprint Payment Reforms

Leaving the existing provider fee-for-service payments untouched, the Blueprint adds two key payment reforms:

1. A *Per Member Per Month (PMPM) Quality Payment* made by all payers to primary care providers with a qualifying score on the NCQA PCMH standards. Because the *PMPM Quality Payment* amount increases with higher scores, this payment reform incentivizes improvements in quality of care.
2. A *Capacity Payment* to support the salaries and expenses of the Community Health Team (CHT) staff. This payment is scaled at \$350,000 for every 20,000 patients, providing approximately five full time equivalent (FTE) staff for every 20,000 patients.

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Vermont's commercial and public payers all make the *PMPM Quality Payments* to qualifying primary care providers and share equally in the *Capacity Payments* that support the cost of the CHTs. The Medicaid portion of the *Capacity Payment* is made monthly to a *lead administrative agent* in each of Vermont's 14 *Health Service Areas (HSA)*. The *Capacity Payment* is based on a quarterly calculation of attributed patients to the participating primary care practices within an HSA.

Blueprint Community Health Teams and the Vermont Chronic Care Initiative

The *Community Health Teams (CHT)* are designed locally by participating primary care providers along with area health and human services partners. Typically, the teams are comprised of nurse care managers, health coaches, social workers, and behavioral health clinicians. These multi-disciplinary teams are hired by the Blueprint *lead administrative agents* for each HSA and are deployed to work in the participating primary care practices. The CHTs work with any patient within these practices, including Medicaid beneficiaries. However, the highest risk and highest cost Medicaid beneficiaries are referred to the Vermont Chronic Care Initiative (VCCI) for care management. VCCI nurses and social workers are State of Vermont employees located throughout the state; they are not hired or overseen by the administrative agents that oversee the CHTs. VCCI provides short term (typically three months) intensive case management to this select population. Once patients are stabilized, they are referred back to the CHTs for ongoing support services.

Currently, there are 116 primary care practices independently recognized as patient-centered medical homes by the NCQA that are participating in the Vermont Blueprint for Health. Collectively these practices serve 460,000 Vermonters. Statewide, 114 FTE CHT staff work in the primary care practices, transforming the scope of primary care. Vermont will meet its legislative mandate to include all willing primary care providers in the Blueprint payment and practice reforms by October 2013.

Blueprint Lead Administrative Agents

The Blueprint is administratively organized into 14 geographically distinct Health Service Areas (HSA) with a single *lead administrative agent* in each area. The role of the *administrative agent* is to lead and convene the work involved with creating an integrated health system. These entities perform the following functions:

- Administer the *Capacity Payments* that support the CHTs and the provider *PMPM Quality Payments*;
- Plan and operate the CHTs (hire, supervise or subcontract for CHT staff);
- Recruit new primary care providers to the Blueprint and support their work to become NCQA recognized as PCMHs;

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- Convene working teams that assure the exchange of health information from practice-based Electronic Medical Records through the Vermont Health Information Exchange (VHIE) to the Blueprint Central Clinical Registry;
- Convene and support learning health system activities, including development and dissemination of key performance reports, learning collaboratives, and training events, and;
- Plan and implement new initiatives, including *Hub and Spoke* Health Homes for Vermonters with opioid addiction.

The Department of Vermont Health Access/Blueprint has performance-based contracts with each *lead administrative agent* to provide these administrative services. The *administrative agents* are health care organizations that are enrolled Medicaid providers, have strong fiduciary and administrative capabilities, and are recognized health care leaders in their communities. They include hospitals, federally qualified health centers, and/or community mental health centers, and do not provide Health Home services.

Opioid Treatment Programs (OTP) and Office-Based Opioid Treatment (OBOT)

Methadone and buprenorphine are the primary pharmacological treatments for opioid addiction. Although they have similar effects, two different federal regulations govern their use, resulting in distinct provider types. In Vermont, typical of many states, this has resulted in separate programs for methadone and buprenorphine.

Methadone treatment for opioid addiction is highly regulated and can only be provided through specialty Opioid Treatment Programs (OTP), of which Vermont currently has only four. OTPs adhere to specific regulations for providing comprehensive methadone addictions treatment. Before 2000, Medication Assisted Therapy (MAT) for opioid addiction could only be provided in these specialty OTPs. The *Drug Addiction Treatment Act of 2000* (DATA 2000), under section 3502 of the Children's Health Act of 2000 (HR 4365), significantly changed medical treatment for opioid addiction by allowing physicians to prescribe buprenorphine for MAT in a general medical office, referred to as Office-Based Opioid Treatment (OBOT).

A physician must complete a required 8-hour online course, obtain an X-DEA license by demonstrating qualifications as defined in the DATA 2000 (Public Law 106-310, Titles XXXV, Sections 3501 and 3502), and obtain a waiver from the Substance Abuse and Mental Health Services Administration in order to provide MAT for opioid addiction in an OBOT. DATA 2000 enables office-based physicians to treat patients for opioid addiction with Schedules III, IV and V narcotic controlled substances specifically approved by the FDA for addiction treatment.

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DATA 2000 restricts the number of patients a physician may treat with buprenorphine for opioid addiction. In the first year of obtaining the X-DEA license and waiver a physician may only treat up to 30 patients. In the second year, the physician may request additional authority to treat 100 patients at the same time, which is the maximum number of concurrent patients allowed.

During the period May through July, 2013, 115 physicians were prescribing buprenorphine for opioid addiction to Medicaid beneficiaries in Vermont; most prescribe to fewer than 20 Medicaid beneficiaries, some to 20-40, and a smaller number of physicians prescribe to between 50-100 patients. The common practice specialties include family medicine, internal medicine, OB/GYN, and psychiatry. Vermont's *Hub and Spoke* Health Home initiative will build a systematic network of Health Home services to support these highly diffused providers and better integrate the services provided by the OTPs and OBOTs.

HEALTH HOME HUB AND SPOKE TREATMENT SYSTEM FOR OPIOID ADDICTION

Overview

The comprehensive, integrated treatment system Vermont is implementing for Medicaid patients receiving Medication Assisted Therapy (MAT) for opioid addiction, called the *Hub and Spoke* initiative, builds on the strengths of the existing provider infrastructure:

- Specialty methadone Opioid Treatment Programs (OTPs);
- Physicians who prescribe buprenorphine in Office-Based Opioid Treatment (OBOT) settings, and;
- Local *Blueprint* Community Health Team (CHT) and Patient-Centered Medical Homes (PCMH).

Under the *Hub and Spoke* Health Home approach, each patient undergoing MAT will have an established physician-led PCMH, a single MAT prescriber, a pharmacy home, access to Community Health Team (CHT) primary care supports, and access to *Hub* or *Spoke* nurses and clinicians with expertise in opioid addiction treatment. Providers of opioid addiction treatment will have access to new staff resources and support to effectively care for current patients, as well as to support additional care of new patients.

Hubs

Hubs are *Designated Providers* as described in Section 1945(h)(5). Plans are underway to expand upon the current OTPs to create five (5) regional specialty addictions treatment center

PROGRAM OVERVIEW

Hubs in Northwest, Southwest, Southeast, Central and Northeast Vermont. *Hubs* build upon the existing OTP system by developing into regional specialty treatment centers that provide the six (6) Health Home services in addition to the traditional comprehensive methadone addictions treatment they currently provide. *Hubs* serve as the regional consultants and subject matter experts on opioid addiction and treatment. As the OTPs, *Hubs* are the only entities providing methadone treatment. In addition, *Hubs* provide care to a subset of clinically complex buprenorphine patients and also provide support for tapering off MAT, when indicated. *Hubs* must demonstrate the capacity to either provide directly or to organize comprehensive care and continuity of services over time to replace episodic care based exclusively on addictions illness. Instead, they will provide coordinated care for all acute, chronic, and/or preventative conditions in collaboration with primary care providers and CHTs. *Hub* funding will be supplemented to augment staffing in order to add the Health Home services to the traditional addictions treatment the *Hubs* already provide. Enhanced *Hub* Health Home staffing will dedicate slightly more than six FTE clinical staff for every 400 MAT patients. *Enhanced funding is sought for a percentage of these costs.*

Spokes

A *Spoke* is a *Team of Health Care Professionals* providing ongoing care for patients receiving buprenorphine in OBOTs. The *Spoke* system provides MAT with buprenorphine to patients who are less clinically complex than the patients receiving buprenorphine in the *Hubs*. A *Spoke* is comprised of a *Designated Provider* who is the prescribing OBOT physician, and the *team of collaborating health and addictions professionals* who monitor adherence to treatment, coordinate access to recovery supports, and provide counseling, contingency management, and case management services. *Spoke* Health Home services will be provided to Medicaid beneficiaries by registered nurse care managers and licensed clinician case managers with expertise in opioid addiction treatment who are added administratively to existing CHTs. The enhanced staffing is modeled at one FTE nurse and one FTE licensed clinician case manager for every 100 MAT patients. *Since these staff resources are added specifically to provide the six Health Home services, enhanced funding is sought for 100% of their cost.*

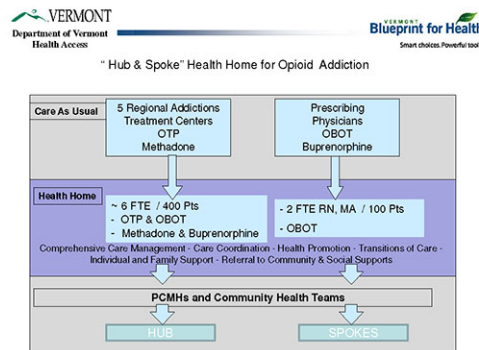
The new staff will be hired or subcontracted by the Blueprint *lead administrative agent* and will be functionally and administratively part of the local Community Health Team (CHT). As with other CHT staff, the *Spoke* Health Home nurses and clinician case managers will be deployed directly into the OBOT physician practices to provide the six Health Home services. As most physician practices prescribe to fewer than 100 buprenorphine patients, the new *Spoke* staff will be shared across multiple practices in the same way current CHT staff is shared among participating PCMHs.

*Vermont Health Homes for Opioid Addiction
Hub & Spoke*

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Vermont Medicaid Health Homes Vision



HUB AND SPOKE HEALTH HOME SERVICES

The *Hub and Spoke* Health Home initiative adds new health care staff to both the *Hub designated providers* and the *Spoke teams of health care professionals* to provide Health Home services for Vermonters with opioid addiction, and links both types of addictions treatment systems with the Blueprint primary care PCMH and CHT infrastructure to functionally integrate care across the health and addictions treatment systems. The Health Home staff at the *designated Hub* behavioral health agencies and the *Spoke teams of health care professionals* will assure integrated and holistic care across the health, human services, long term, recovery, and community support systems of care through the provision of Health Home services.

Comprehensive Care Management

Comprehensive care management includes activities undertaken to identify patients for MAT, conduct initial assessments, formulate individual plans of care, and manage patient care across the health, substance abuse and mental health, social services and long term systems of care.

Identification: MAT patients are identified via a variety of methods, including but not limited to:

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- Provider referrals
- Prior authorization for buprenorphine claims and utilization data
- Vermont Chronic Care Initiative

Eligibility Determination: Only a licensed physician can make a clinical diagnosis of opioid addiction and ultimately decide upon the choice of medications (methadone or buprenorphine). Physicians are responsible for documenting that the patient:

- Meets the DSM-IV diagnostic criteria for opioid addiction;
- Is screened as appropriate for MAT.

The Vermont Department of Health, Division of Alcohol and Drug Abuse Programs (ADAP) develops decision support tools to aid in the process of determining whether a patient is more appropriate for treatment provided in a *Hub* or a *Spoke*.

Assessment and Care Plan Development: All eligible beneficiaries receive a comprehensive biopsychosocial assessment (e.g., addiction severity index, PHQ, American Society of Addiction Medicine placement criteria) of their health care needs upon entry into either a *Hub* or *Spoke*. Based upon the initial assessment, an individualized plan of care is developed.

- The physicians (*Hub* Medical Director, *Hub* Psychiatrist, *Spoke* buprenorphine prescriber) are responsible for the initial diagnosis and determination of clinical needs.
- The RNs and licensed clinician case managers in both *Hubs* and *Spokes* are engaged from the beginning to assure the patient's medical and non-medical needs are coordinated (social and personal health needs required to embrace recovery).
- Patients and families are actively engaged in developing the care plan and participate in shared decision-making.



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Care Coordination and Referral to Community and Support Services

Once an individualized plan of care is developed, the Health Home RNs and licensed clinician case managers are primarily responsible for monitoring its implementation (with patient engagement) through appropriate coordination, referrals, and follow up of services and supports across treatment and human services providers.

- The RNs monitor medical treatment progress, including medication adherence. Physicians provide care coordination services related to prescribed medication (medication management).
- The RNs and licensed clinician case managers play a key role in assuring continued patient participation in the individualized care plans.
- The RNs and licensed clinician case managers assure appropriate linkages are made with the Vermont's Agency of Human Services field directors for social services (e.g., child welfare, housing, corrections, and employment) and with the existing Community Health Teams, which have established relationships with the primary care community.
- The RNs and licensed clinician case managers develop and maintain up to date information about resources beyond those covered in the Medicaid service package, including community and peer based programs.

Care Transitions

Care transitions focus on streamlining the movement of patients from one treatment setting to another, between levels of care, and between health, specialty mental health and substance abuse, and long term care providers.

- RNs and licensed clinician case managers are primarily responsible for developing collaborative relationships among health home providers and hospital ERs, discharge planners, long term care services and support providers, primary care providers, specialty mental health and substance abuse treatment services.



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Individual and Family Supports

The RNs and licensed clinician case managers are primarily responsible for supporting the resilience of patients and their families through various activities, including but not limited to: advocacy, assessments of individual family strengths and needs, education about the Agency of Human Services resource systems, and facilitating participation in the ongoing development and revision of care plans.



Health Promotion

Health promotion activities are part of every plan of care and include activities that promote patient activation and empowerment for shared decision-making in treatment, healthy behaviors, and self-management of health, mental health, and substance abuse conditions. Depending on the needs of the individual, the patient may elect to engage in one-on-one activities or group educational health promotion programs.

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- Health promotion activities may be conducted by any member of the health home team but the RNs and licensed clinician case managers are the primary practitioners responsible for coordinating activities.
- Physicians will need to order/prescribe new interventions (e.g., nutritional counseling, NRT therapy, etc.).



PAYMENT METHODOLOGIES FOR HUB AND SPOKE HEALTH HOME SERVICES

Both the *Hubs* and *Spokes* will combine services currently reimbursed in Vermont's State Medicaid Plan with the new Health Home services. Under the terms of the ACA Section 2703 State Plan Amendment, Vermont will seek 90-10 matching funds *only* for the *Hub & Spoke* costs directly linked to providing the Health Home services. The remaining services will be matched at the current state match rate.

There are two payment methodologies and two payment streams: one for *Hubs* and one for *Spokes*.

Hub Health Home Payment Methodology

Hub Health Home Staffing and Cost Model

The methodology to develop costs for the *Hub* Health Home enhancements is based on the costs to employ key health professionals (salary and fringe benefits) who will provide the Health Home services. The staffing enhancements for Health Homes were developed in collaboration with current methadone providers (OTP) and are based on a model of 400 MAT patients served

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at a regional treatment center. The resulting Health Home enhanced staffing model represents, on average, a 43% increase from Vermont's current statewide average rate for methadone treatment as usual (statewide average rate of \$4,144 per patient per year). *Hub* Health Home services represent 30% of the total *Hub* costs.

The Health Home *Hub* staff and their approximate annual costs for 400 patients are shown below:

Hub Health Home Scale Model: (400 patients)	
Staffing	Annual FTE costs
Health Home Director (1FTE)	\$95,000
Health Home Nurse (1FTE)	\$90,000
MA Clinician Case Managers (2 FTEs)	\$120,000
MD (15% FTE)	\$ 45,400
Psychiatry (20% FTE)	\$70,000
MA Addictions Counselors (30% 6 FTEs)	\$106,000
Total Salary	\$526,400
Fringe benefits @ 35% of salary	\$184,000
Total Hub Health Home Staffing Costs	\$710,400
Annual Health Home per patient cost	\$1,776
Per Patient Per Month	\$148.01

The cost of Health Home staffing enhancements to the *Hub* OTP programs equals \$1,776 per patient per year. The Health Home services combined with the traditional OTP services result in an average annual statewide rate of \$5,920 per patient.

OTP Statewide Average Methadone Rate without Health Homes	Health Home Staff Enhancement Statewide Average	Hub Rate (Health Home + OTP Statewide Average)
\$4,144/year	\$1,776/year	\$5,920/year
\$345.36/month	\$148.01/month	\$493.37/month

Hub Health Home Payments

The *Hub* payment is a monthly, bundled rate per patient. The *Hub* provider initiates a claim for the monthly rate, using the existing procedure code for current addictions treatment and a modifier for the Health Home services. The provider may make a monthly claim using the modifier on behalf of a patient for whom the provider can document the following two services in that month:

- One face-to-face typical treatment service encounter (e.g., nursing or physician assessment, individual or group counseling, observed dosing); and,

PROGRAM OVERVIEW

- One Health Home service (comprehensive care management, care coordination, health promotion, transitions of care, individual and family support, referral to community services).

If the provider did not provide a Health Home service in the month, then they may only bill the existing procedure code without the Health Home modifier for the current average rate of \$345.36 per month.

Under the terms of the ACA Section 2703 State Plan Amendment, Vermont will seek 90-10 matching funds for *only* the Health Home enhancements, or 30% of the total *Hub* costs per Medicaid patient.

Vermont's single state Methadone Treatment Authority is the Division of Alcohol and Drug Abuse Programs (ADAP) of the Vermont Department of Health. ADAP executes performance-based contracts with the OTP providers. These contracts are revised to reflect the Health Home services and increased coordination with the Blueprint for Health participating primary care practices and the local Community Health Teams. The monthly payment process for the *Hubs* is administered by the Department of Vermont Health Access as described above.

Spoke Health Home Payment Methodology

Spoke Health Home Staffing and Cost Model

Payment for *Spoke* Health Home services will be based on the costs to deploy one FTE RN and one FTE licensed clinician case manager for every 100 patients across multiple providers within a Health Service Area. The costs are modeled for 100 buprenorphine patients as follows:

Spoke Staffing Scale Model: (100 patients)		
Staffing	Annual FTE cost	
1 FTE RN Care Manager	\$85,000	\$85,000
1 FTE Clinician Case Manager	\$55,000	\$55,000
Total Annual Salary		\$140,000
35% fringe benefits		\$49,000
Total Annual Personnel Costs		\$189,000
Operating		\$ 7,500
Total Estimated Annual Costs per 100 patients		\$196,500 (\$1,965 per patient)
		\$163.75 PPPM

PROGRAM OVERVIEW

Spoke Health Home Payments

Spoke payments are based on the average monthly number of unique patients in each Health Service Area (HSA) for whom Medicaid paid a buprenorphine pharmacy claim during the most recent three-month period in increments of 25 patients. Building on the existing Community Health Team infrastructure, new *Spoke* staff are supported through *Capacity Payments*. For administrative efficiency, *Spoke* payments will be made to the *lead administrative agent* in each Blueprint Health Service Area as part of the existing Medicaid Community Health Team payment.

Buprenorphine pharmacy claims are not affected and *Spoke* physicians will continue to bill fee-for-service for all typical treatment services currently reimbursed by the Department of Vermont Health Access (DVHA).

Spoke Provider	Payment Mechanism	Purpose of Payment
Physician	Fee-for-Service payment to physician, under current Medicaid State Plan	Buprenorphine treatment
Nurse + Clinician Case Manager	Capacity payment to Blueprint administrative entity, based on numbers of unique Medicaid beneficiaries receiving buprenorphine	Care management, care coordination, transitions of care, health promotion, individual and family support, and referral to community services

Spoke Caseload Determination

Each month, the DVHA clinical unit creates a report reflecting the unique Medicaid beneficiaries with at least one paid buprenorphine (e.g., Subutex®, Suboxone®) claim, linked with the prescribing physician. The caseload within each Health Service Area (HSA) is then calculated based on the average number of unique patients with a paid pharmacy claim in the most recent three consecutive months for all prescribers in the HSA. The average monthly caseload for each HSA is rounded up to the next 25 beneficiaries. Rounding builds *Spoke* staffing in increments roughly equivalent to a 50% FTE position and helps assure adequate staffing for caseload growth in a quarter. This rounded, average monthly caseload number is then multiplied by the Per Patient Per Month *Spoke* cost to arrive at the monthly *Spoke* payment amount.

The Blueprint maintains a roster of local buprenorphine prescribers in each HSA. The *Spoke* staff resources are deployed by the Blueprint *lead administrative agent* to the prescribing practices proportionate to the number of patients served by each practice.

PROGRAM OVERVIEW

Spoke Prospective Caseload Adjustments

A Blueprint HSA may request a prospective adjustment for an upcoming quarter if:

- A current physician plans to enlarge his/her buprenorphine practice by at least 25 patients;
- A new buprenorphine practice of at least 25 patients is planned.

Spoke Payment Process

The monthly *Spoke* payment amount for each HSA is revised on a quarterly basis based on the average monthly number of unique patients for whom Medicaid paid a pharmacy claim for buprenorphine during the most recent three-month period.

The Blueprint provides the revised monthly *Spoke* payment amount for each HSA to DVHA's fiscal agent at the beginning of each quarter for processing. For administrative ease, the *Spoke* payments are added to DVHA's monthly payment for the Blueprint Community Health Teams (CHT), resulting in one combined monthly payment by DVHA to each Blueprint HSA *lead administrative agent* for costs associated with both core CHT and *Spoke* Health Home services.



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Impact of Medication-Assisted Treatment for Opioid Addiction on Medicaid Expenditures and Health Services Utilization Rates in Vermont



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ABSTRACT

In the face of increasing rates of overdose deaths, escalating health care costs, and the tremendous social costs of opioid addiction, policy makers are asked to address the questions of whether and how to expand access to treatment services. In response to an upward trend in opioid abuse and adverse outcomes, Vermont is investing in statewide expansion of a medication-assisted therapy program delivered in a network of community practices and specialized treatment centers (Hub & Spoke Program). This study was conducted to test the rationale for these investments and to establish a pre-Hub & Spoke baseline for evaluating the additive impact of the program. Using a serial cross-sectional design from 2008 to 2013 to evaluate medical claims for Vermont Medicaid beneficiaries with opioid dependence or addiction (6158 in the intervention group, 2494 in the control group), this study assesses the treatment and medical service expenditures for those receiving medication-assisted treatment compared to those receiving substance abuse treatment without medication. Results suggest that medication-assisted therapy is associated with reduced general health care expenditures and utilization, such as inpatient hospital admissions and outpatient emergency department visits, for Medicaid beneficiaries with opioid addiction. For state Medicaid leaders facing similar decisions on approaches to opioid addiction, these results provide early support for expanding medication-assisted treatment services rather than relying only on psychosocial, abstinence, or detoxification interventions.

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1. Introduction

1.1. Opioid Epidemic

Opioid addiction continues to grow as a public health problem with significant impacts on morbidity and mortality, health care expenditures, crime, and health outcomes. In 2013, 1.9 million Americans were dependent on pain relievers, and 517,000 were dependent on heroin (Substance Abuse and Mental Health Services Administration (SAMHSA), 2014a). Kolodny et al. estimated that this figure was closer to 5 million when including individuals with active opioid prescriptions who may also have been addicted (Kolodny, Courtwright, Hwang, et al., 2015). While use of prescription opioids has held steady or declined since 2002, heroin use has increased (Substance Abuse and Mental Health Services Administration (SAMHSA), 2014a). The growth in heroin use has carried over to patterns in mortality, which is increasing nationally (Department of Health and Human Services, 2015). In 2010, 3036 deaths resulted from heroin overdoses and 16,651 deaths from

opioid pain reliever overdoses. In 2013, heroin overdose deaths more than doubled to 8257 while opioid pain reliever overdose deaths dropped slightly to 16,235 (National Institute on Drug Abuse, 2015). Furthermore evidence associates nonmedical use of pain relievers with subsequent heroin use (Muhuri, Groer, & Davies, 2013), highlighting the link between licit and illicit drug use and the need to address both as a continuum of the same epidemic.

Vermont's experience mirrors the national trend. Nonmedical use of prescription pain relievers among Vermonters age 12 years and older declined between 2012 and 2013 (from 4.6% to 3.7%; p -value <0.01), (Substance Abuse and Mental Health Services Administration (SAMHSA), 2014b) even as opiate-attributed deaths (from 39 to 68 per year) and overdoses (from 1.4 to 2.2 discharges per 10,000 people) increased from 2010 to 2013 (Vermont Department of Health, 2014a). Between 2008 and 2012, the average number of infants exposed to opiates at birth more than doubled, increasing from 17.8 births per 1000 hospital deliveries to 39.8 (Vermont Department of Health, 2014b). One possible explanation for the increase in adverse opioid-related outcomes is an increase in heroin use. The additions treatment system intake experience appears to support this conclusion. From 2011 to 2013, the number of Vermonters receiving treatment for prescription opiates and heroin increased from 2864 (654 for heroin and 2210 for

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prescription opiates) to 3971 (1375 for heroin and 2596 for prescription opiates) – a 38.6% overall increase, with a 110.2% increase for heroin and a 17.5% increase for prescription opiates (Vermont Department of Health, 2014b).

The combination of increasing overdose deaths, opiate-exposed newborns, and demand for treatment services constituted a public health emergency, and Vermont policymakers determined that a systemic response was needed. However, in a small, rural state, policymakers must consider the cost of expanding access to treatment for opioid addiction and the impact on overall health care and medical service expenditures.

1.2. Treatment for Opioid Abuse or Dependence

Medication-assisted treatment (MAT) is defined by the U.S. Department of Health and Human Services' Center for Substance Abuse Treatment as "the use of medications, in combination with counseling and behavioral therapies to provide a whole patient approach to the treatment of substance use disorders" (Substance Abuse and Mental Health Services Administration (SAMHSA), 2016). The approach involves long-term use of medications and is akin to insulin use among people with diabetes. Evidence has demonstrated that MAT, the combination of medication and counseling, is more effective at treatment retention and reduction of heroin and prescription opiate abuse than using time-limited medication (i.e., opioid detoxification or tapering) or psychosocial and abstinence interventions; the latter approaches are associated with higher rates of relapse (Fullerton, Kim, Thomas, et al., 2014; Thomas, Fullerton, Kim, et al., 2014). Furthermore, maintenance MAT is associated with improved birth outcomes when given to opioid-addicted pregnant women, although neonatal abstinence syndrome remains a concern (Fullerton et al., 2014; Thomas et al., 2014). Both Fullerton et al. and Thomas et al. found mixed results on whether MAT affected the use of other illicit drugs, criminal behavior, and risk factors for human immunodeficiency virus (HIV) or hepatitis C virus (HCV). Other studies, however, do indicate an association between MAT and reduced overall mortality and specifically while in prison, recidivism, and treatment engagement among those recently released from prison (Degenhardt, Larney, Kimber, et al., 2014; Farrell-MacDonald, MacSwain, Cheverie, Tiesmaki, & Fischer, 2014; Larney, Gisev, Farrell, et al., 2014; Zaller et al., 2013).

1.3. Cost of Medication-Assisted Treatment for Opioid Abuse or Dependence

While the effectiveness of maintenance MAT in reducing opioid use has been demonstrated, the treatment itself comes with higher direct costs than tapering, abstinence, or psychosocial interventions. In 2009, \$866 million was spent across all payers on substance abuse prescription medicine, 93% of which went towards buprenorphine, one of the drugs used to treat opioid addiction (Substance Abuse and Mental Health Services Administration (SAMHSA), 2013). While the costs of methadone are negligible, the daily dosing and other services provided in opioid treatment programs (OTPs) where methadone is dispensed are relatively high.

However, the question remains as to whether MAT costs can be offset by reductions in other health care expenditures. Relatively few studies have examined the total cost of health care services for opioid addicts. Two studies have looked at data from commercial health insurance claims on the overall health care costs and utilization rates for those using MAT compared to those treated without MAT (Baser, Chalk, Fiellin, & Gastfriend, 2011; McCarty et al., 2010). McCarty et al. found that over a five-year period, members on MAT had 50% lower total annual health plan costs than those who had two or more visits to an addiction treatment department and no methadone and 62% lower than those with zero or one visit for addiction treatment and no methadone (McCarty et al., 2010). Baser et al. found that after a six-month period, those with MAT had significantly lower overall annual

health plan costs compared to those with no medication (\$10,192 vs. \$14,353; p -value <0.0001) (Baser et al., 2011). The difference was driven largely by lower inpatient services and non-opioid-related outpatient services for the group receiving medication (Baser et al., 2011).

McAdam-Marx et al. reported in 2010 that Medicaid beneficiaries with opioid abuse, dependence, or poisoning had nearly triple the total medical costs adjusted for baseline sample characteristics compared to beneficiaries matched by age, gender, and state with no opioid abuse diagnosis (\$23,556 vs. \$8436; p -value <0.001). The opioid dependence/abuse group also had higher prevalence of comorbidities, such as psychiatric disorders, pain-related diagnoses, and other substance abuse conditions (McAdam-Marx, Roland, Cleveland, & Oderda, 2010). While this study considered overall cost, it did not address MAT costs in particular or any impact treatment may have had on overall cost.

Focusing specifically on a Medicaid population is important for two reasons. First, Medicaid beneficiaries as a population remain at greater risk for substance abuse, including opioid addiction and overdose. Approximately 12% of Medicaid beneficiaries between ages 18 and 64 years has a substance use disorder (Mann, Frieden, Hyde, Volkow, & Koob, 2014). In Washington State, the U.S. Centers for Disease Control and Prevention (CDC) found that between 2004 and 2007, 45.5% of fatal prescription opioid painkiller overdoses involved people enrolled in Medicaid (Coolen, Best, Lima, Sabel, & Paulozzi, 2009). Second, Medicaid's share of all substance abuse expenditures has increased from 9% to 21% between 1986 and 2009 (Substance Abuse and Mental Health Services Administration (SAMHSA), 2013). This equates to Medicaid spending approximately \$5 billion in 2009 on substance abuse treatment, an amount that includes federal, state, and local funds. This dollar amount and the findings by McAdam-Marx et al. (2010) indicate that state Medicaid programs have an interest in understanding the potential impact of expanding MAT services on total expenditures and utilization of medical services.

This study examines Vermont's Medicaid expenditures for opioid addiction treatment and other medical and non-medical services, including special Medicaid services (SMS), which are services uniquely reimbursed by Medicaid that target social, economic, and rehabilitative needs (e.g., transportation, home and community-based services, case management, dental, residential treatment, day treatment, mental health facilities, and school-based services). More explicitly, it compares the health care expenditures between two groups with opioid addiction: those receiving MAT ("MAT group"), specifically methadone or buprenorphine, and those receiving non-medication treatment approaches, such as behavioral therapies alone ("non-MAT group"), with the goal of assessing the cost effectiveness of MAT and establishing baseline data against which expanded and enhanced treatment access can be evaluated.

2. Material and Methods

2.1. Data Source and Sample Population

This study reviewed annual medical expenditures and utilization rates (per person) for Vermont Medicaid enrollees from 2008 to 2013 who were identified as having an opioid addiction or dependency. The data source for this study was Vermont's all-payer claims database, the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES). Due to limitations arising from the statutorily-mandated de-identified status of VHCURES, this study could not use a cohort design, but instead relied on annual cross-sectional data for each year in the study period.

The study population included members with Medicaid coverage, ages 18–64 years, who had claims in VHCURES indicating treatment for opioid addiction between the calendar years 2008 and 2013. Within each year, members participating in MAT were compared to members with opioid addiction receiving non-MAT therapies. Expenditures and

Table 1
Summary health & demographics for the study population, unique count of Medicaid patients for the years 2008 to 2013.

Demographic/Health characteristic	MAT		Non-MAT		χ^2 P-value
	Member count	%	Member count	%	
N	6158	71.2%	2494	28.8%	
Age (in years), females*					
18–34, female	2450	79.0%	711	64.3%	<0.001
35–44, female	634	20.4%	222	20.1%	
45–64, female	294	9.5%	205	18.6%	
Age (in years), males*					
18–34, male	2259	73.8%	898	64.6%	<0.001
35–44, male	724	23.7%	271	19.5%	
45–64, male	330	10.8%	256	18.4%	
3 M TM Clinical Risk Group (CRG)*					
Opioid-addicted only (CRG category 1) [†]	644	10.5%	494	19.8%	<0.001
Acute illness or minor chronic disease (CRGs 2–4)	275	4.5%	334	13.4%	
Single dominant or moderate chronic disease (CRG 5)	5350	86.9%	1522	61.0%	
Significant chronic disease, multi-organ system (CRG 6)	1637	26.6%	605	24.3%	
Cancer/Catastrophic condition (CRGs 7–9)	56	0.9%	45	1.8%	
Women with pre- and perinatal care (denominator is females)	962	31.0%	142	12.9%	<0.001
Hepatitis C virus (HCV) diagnosis	1267	20.6%	249	10.0%	
Medicaid in the prior year	5473	88.9%	2035	81.6%	
Serious mental health disorder	1328	21.6%	509	20.4%	0.234
Chronic disease					
Asthma	1384	22.5%	448	18.0%	<0.001
Attention deficit hyperactivity disorder (ADHD)	803	13.0%	203	8.1%	
Coronary heart disease	33	0.5%	19	0.8%	
Chronic obstructive pulmonary disorder (COPD)	137	2.2%	69	2.8%	0.134
Depression	3125	50.7%	1072	43.0%	<0.001
Hypertension	425	6.9%	215	8.6%	
Diabetes	161	2.6%	92	3.7%	

* Since individuals can be in multiple age and clinical risk groups over the span of the study period, the sum of the percentages exceeds 100%.

[†] Members without additional comorbidities or complicating diagnoses.

selected utilization measures were evaluated for the MAT and non-MAT groups over the six-year period.

The inclusion criteria for the MAT group were based on claims data for the two primary drugs used in MAT: methadone and buprenorphine. Methadone is dispensed only at designated treatment facilities (Opioid Treatment Programs or OTPs). Prior to 2013 in Vermont, buprenorphine was prescribed only in general medical offices by authorized physicians (Office Based Opioid Treatment or OBOT). Members receiving methadone treatment were selected using the Healthcare Common Procedure Coding System (HCPCS) program code H0020 in the claims data. Members receiving buprenorphine treatment were selected using a list of National Drug Codes (NDCs), with the exclusion of any form of buprenorphine when prescribed specifically for pain management. In addition, patients under any treatment for chronic pain were excluded.

The non-MAT comparison group was also identified using claims data. These included members who never received MAT and had at least two opioid addiction diagnoses (i.e., ICD-9 codes 304.00, 304.01, 304.02, 304.70, 304.71, 304.72) on different dates of service, suggesting ongoing addiction. The opioid addiction treatment for the non-MAT population included individual and group outpatient services, intensive outpatient programs, partial hospitalization, detoxification, and residential treatment services identified from the claims data using HCPCS and revenue codes.⁴ As in the MAT group, patients under any treatment for chronic pain were excluded.

For each calendar year, MAT and non-MAT members were evaluated using demographics and health status (Table 1). Demographic measures included age, gender, and county of residence. Health status indicators included major mental health disorders (i.e., schizophrenia,

major depression, bipolar and other psychoses), selected chronic disease diagnoses (i.e., asthma, attention deficit hyperactivity disorder (ADHD), chronic obstructive pulmonary disorder (COPD), congestive heart failure, coronary heart disease, depression, diabetes, and hypertension), and 3 MTM Clinical Risk Group (CRG) categories, which were used to identify differences in health status for other conditions (e.g., cancer) among the MAT and non-MAT populations. For purposes of ensuring a large enough subsample, the CRG categories were grouped into five categories: opioid-addicted only (which included those addicted or dependent on opioids with no comorbidities or complicating diagnoses); having a history of significant acute disease, a single minor chronic disease, or minor chronic disease in multiple organ systems; having a single dominant or moderate chronic disease; having significant chronic disease in multiple organ systems; and having dominant chronic disease in three or more organ systems, metastatic and complicated malignancies, or catastrophic conditions. Members with claims indicating pre- and perinatal care or HCV positivity were also identified. A measure of continuity of enrollment in Medicaid ("Medicaid in the Prior Year") was assigned for a member who was enrolled in Medicaid during both the study period year and the prior year.

2.2. Statistical Analysis

To reduce the effect of extreme outlier cases, total expenditures were capped at the 99th percentile for each group (Centers for Medicare and Medicaid Services, 2014).

Demographic data for each group was compared with a χ^2 goodness of fit test with the significance level set at 0.05 (Table 1). Multivariable linear regression models were used to evaluate the expenditure and utilization dependent variables that were derived from claims data. Expenditure and utilization measures included those listed in Table 2.

The "Total Expenditures" model included the costs of all medical services and the costs associated with opioid addiction treatments for both the MAT group and the non-MAT group, as described above. The "Total Expenditures without Treatment" model excluded all opioid addiction treatment costs to determine the impact of MAT on medical

⁴ HCPCS and Revenue Codes: G0176, G0177, H0001, H0002, H0004, H0005, H0006, H0014, H0016, H0020, H0022, H0028, H0031, H0032, H0036, H0037, H0046, H0047, H2017, H2018, H2019, H2020, H2027, H2033, H2035, H2036, S9475, T1006, T1007, T1011, T1012, O907, 90.801, 90.802, 90.804, 90.805, 90.806, 90.807, 90.808, 90.809, 90.810, 90.811, 90.812, 90.813, 90.814, 90.815, 90.845, 90.846, 90.847, 90.849, 90.853, 90.857, 90.862, 90.875, 90.876, 90.880, H0015, S9480, T1008, O905, O906, H0010, H0011, H0012, H0013, H0018, H0019, T2048, 1002, 90.816, 90.817, 90.818, 90.819, 90.821, 90.822, 90.823, 90.834, 90.826, 90.827, 90.828, 90.829, H0017, H2013, H0008, H0009, H0035, S0201, H2034, 1004

Table 2
Adjusted average annual expenditures and utilization rates^a.

	MAT group	Non-MAT	Difference ^b	P-value
Expenditures				
Total expenditures	\$14,468	\$14,880	–\$412	0.07
Total expenditures without treatment	\$ 8794	\$11,203	–\$2409	<0.01
Buprenorphine expenditures	\$2708	–\$47	\$2755	<0.01
Total prescription expenditures	\$4461	\$2166	\$2295	<0.01
Inpatient expenditures	\$2132	\$3757	–\$1625	<0.01
Outpatient expenditures	\$345	\$604	–\$259	<0.01
Professional expenditures	\$674	\$981	–\$307	<0.01
SMS expenditures ^c	\$2872	\$4160	–\$1288	<0.01
Utilization (rate/person)				
Inpatient days	1.54	3.00	–1.46	<0.01
Inpatient discharges	0.30	0.52	–0.22	<0.01
ED visits	1.44	2.48	–1.04	<0.01
Primary care physician visits	15.27	9.81	5.46	<0.01
Advanced imaging	0.29	0.54	–0.25	<0.01
Standard imaging	0.76	1.43	–0.67	<0.01
Colonoscopy	0.01	0.02	–0.01	<0.01
Echography	0.46	0.53	–0.07	0.002
Medical specialist visits	0.49	0.82	–0.33	<0.01
Surgical specialist visits	3.04	1.89	1.15	<0.01

^a SMS refers to special Medicaid services and include transportation, home and community-based services, case management, dental, residential treatment, day treatment, mental health facilities, and school-based services.

^b Multivariable regression analysis, adjusted for gender, age, calendar year, clinical risk groups, Medicaid in the prior year, hepatitis C virus (HCV) status, and pre- and perinatal care.

^c Difference = MAT – non-MAT.

expenditures alone. All expenditure outcomes and utilization rates listed in Table 2 were adjusted for partial enrollment within the calendar year and the independent variables included MAT status, gender, age group, pre- and perinatal status, HCV status, “Medicaid in prior year” status, and health status as measured by CRGs. Chronic diseases and mental health disorders were excluded from the regression because they were encompassed by the CRGs. The independent variable of MAT v. non-MAT was created as a binary (0/1) variable, as were “Women with pre- and perinatal care”, HCV, and “Medicaid in the prior year”. The remaining were multi-level indicator variables – the model adjusted for age and gender groups using males 18–34 as the reference group, and health status based on CRG groups using “opioid-addicted only” as the reference group.

All statistical analysis was done with SAS version 9.3.

3. Results

3.1. Sample Population and Demographics

Over the period from 2008 to 2013, we identified 6158 unique Medicaid beneficiaries with a diagnosis for opioid misuse and health care claims for MAT, and 2494 unique Medicaid patients with a diagnosis of opioid misuse but no claims for MAT. Table 1 compares the health status and demographics for Medicaid members who received MAT and non-MAT treatment between 2008 and 2013. The MAT group was slightly younger with higher proportion of 18–34 year olds in both genders (79.0% vs. 64.3% for females and 73.8% vs. 64.6% for males). Overall the MAT group was more likely to be female (50.3% vs. 44.3%; p -value <0.001). In line with this trend, MAT members had a higher rate of pre- and perinatal care compared to non-MAT (16% vs 6%). MAT members also had a higher prevalence of known positive tests for HCV (21% vs 10%) and were more likely than non-MAT to have continuity of coverage in Medicaid as indicated by having Medicaid in the prior year (88.9% vs. 81.6%). The prevalence of members with serious mental health disorders (e.g., schizophrenia, major depression, bipolar and other psychoses) in MAT was slightly higher than non-

MAT (22% vs. 20%), but the difference was not statistically significant (p -value = 0.23).

Table 1 also compares risks groups and prevalence of select conditions between the two groups. Based on the χ^2 goodness of fit test, there was significant difference in the distribution of the risk groups among the MAT and non-MAT groups. The non-MAT group had higher proportions categorized as opioid-addicted only (i.e., those with opioid addiction or dependency but without comorbidities or complicating diagnoses) or as having acute illness or a minor chronic disease. The MAT group had higher proportions with a single dominant or moderate chronic disease or a significant chronic disease in multiple organ systems. Both groups had low rates of cancer and catastrophic conditions. Of the selected chronic conditions with significant differences between the two groups, MAT had higher prevalence of ADHD, depression, and asthma and a lower prevalence of hypertension and diabetes.

3.2. Multivariable Regression Results

Table 2 shows the adjusted expenditure and utilization rates per person for the MAT and the non-MAT groups and the differences between the two study populations. In all categories of expenditures except prescriptions, members of the MAT group had lower costs. For total medical expenditures, including treatment costs, the MAT group's annual expenditures were \$412 less than the non-MAT group's expenditures, although this difference was not significant (p -value: 0.07). When opioid addiction treatment costs for both groups were excluded, the difference in annual expenditures of the MAT group relative to the non-MAT group grew to –\$2409 (p -value: <0.01). In each of the four expenditure subcategories (inpatient, outpatient, professional services, and special Medicaid services expenditures) the MAT group's medical expenditures were significantly lower, with the largest difference seen in inpatient expenditures (–\$1625). For the utilization categories (Table 2), the MAT group has significantly lower utilization rates per person across all categories except for primary care physician visits and surgical specialist visits.

The expenditure models also found that, independent of MAT status, a positive diagnosis of HCV was associated with significantly higher costs for both models: \$3518 (p -value: <0.01) in the “Total Expenditures” model and \$2679 (p -value: <0.01) in the “Total Expenditures Without Treatment Costs” model. Conversely, being enrolled in Medicaid in the previous year was associated with lower costs: –\$1169 (p -value: <0.01) in the “Total Expenditures” model and –\$630 (p -value: 0.01) in the “Total Expenditures Without Treatment Costs” model.

4. Discussion

4.1. Findings

The results indicated that the overall difference in annual average expenditures was lower for the MAT group, even with the cost of MAT, but not significantly lower. However, when opioid addiction treatment costs were removed, the MAT group had substantial and statistically significant lower health care costs overall compared to the non-MAT group. This was especially noteworthy given the MAT group's higher rates of pre- and perinatal care, HCV positivity, and more severe health status according to risk groupings (higher proportions of young females and higher rates of pre- and perinatal care were expected because pregnant women were prioritized for MAT treatment, especially in OTPs). Evaluation of the utilization rates suggests that reduction in cost was due, in part, to lower inpatient admissions and outpatient hospital emergency department visits. The higher rate of primary care visits for the MAT group was expected since buprenorphine is prescribed in general medical offices. It may also indicate that MAT may be successfully linking patients with preventive care services. The increased utilization of the surgical specialists and the decreased utilization of imaging services will require additional analysis to identify the reasons for

these trends. Overall, however, this study, in conjunction with the many studies supporting MAT treatment efficacy, suggests that expanding Vermont's MAT services for its Medicaid-enrolled population has the potential to produce better opioid addiction treatment results and lower overall health care costs compared to other approaches to opioid addiction treatment.

The findings also indicate that more continuous enrollment in Medicaid was associated with reduced expenditures independent of the MAT program. One interpretation of this result is that newly insured members tended to have higher initial health care utilization if they had been without it beforehand, and their continued enrollment led to a reduction in health care expenditures. Further study is needed to evaluate this conclusion and its implications on expanding MAT services.

Another point addressed in the results is the prevalence of HCV among the opioid-addicted population. As noted in Table 1, 20.6% of MAT members and 10.0% of non-MAT members were diagnosed with HCV between 2008 and 2013. By comparison, chronic HCV prevalence in the US is approximately 0.8% (Centers for Disease Control and Prevention (CDC), 2016). Further inquiry into the reasons behind this difference should be pursued, such as whether there is increased HCV screening for MAT patients, a possibility supported by another study (Larney, Grebely, Falster, et al., 2015), or greater referral among Medicaid beneficiaries with HCV to MAT services. Additionally, further analysis should evaluate the factors contributing to cost such as severity of HCV-associated disease and treatment-seeking patterns. HCV treatment is expensive, especially the combination therapies involving the relatively new sofosbuvir and ledipasvir approved after the time frame for this study; however, these drugs have significantly reduced side effects and treatment times (6–12 weeks vs. 24–48 weeks) and produce higher cure rates (85%–95% vs. 50%–80%) than the traditional pegylated-interferon with riboviron therapy (Centers for Disease Control and Prevention (CDC), 2016). Should MAT provide a means for improved HCV detection through increased screening, MAT may have the added benefit of reducing HCV transmission (Tsu, Evans, Lum, Hahn, & Page, 2014; White, Dore, Lloyd, Rawlinson, & Maher, 2014) and the medical complications that arise from chronic HCV infection.

4.2. Limitations

While VHCURES data have been validated as a reliable data source (Hoffer & Stein, 2014), they do have some limitations relevant to this study. First, as mentioned above, the de-identified status of VHCURES makes cohort studies difficult; therefore we used annual cross-sectional for each year in the study period.

Second, the dataset did not allow for the estimation of methadone costs in isolation. The HCPCS program code, which is used to identify MAT members receiving methadone and their treatment costs, combines medication and health home services. Furthermore, methadone is not present in pharmacy claims, limiting the ability to find treated members and isolate methadone medication costs.

Third, the data may include some bias due to the influence of outliers. While outliers were capped at the 99th percentile, they could still potentially influence the results given the small sample size. However, since the yearly dollar amounts were consistent (data not shown), this influence is likely minimal.

Finally, a few unmeasurable confounders could also have introduced bias to this study such as unaccounted differences in the severity of opioid addiction between the MAT and non-MAT groups and access to treatment. Additional studies on these factors would improve further evaluations of MAT.

5. Conclusion

Given that total health care expenditures did not differ significantly (p -value: 0.07) even with the higher costs of MAT services and medications, the outlook for a statewide program focused on providing

maintenance MAT is favorable. While the total addictions treatment costs were higher for the MAT group, these were offset by much lower health care utilization and expenditures, indicating an insignificant overall cost difference between the MAT and non-MAT groups. While causation cannot be determined in this study, the results, along with strong evidence that maintenance MAT is more effective at achieving treatment retention and reducing opioid use (Fullerton et al., 2014; Thomas et al., 2014), present a persuasive argument for expanding a MAT-centered opiate addiction treatment program throughout the state of Vermont.

Toward the end of this study's time frame (mid-2013), Vermont, through its health care delivery reform program, the Vermont Blueprint for Health, began to roll out a comprehensive services design built on MAT and the opportunity for Health Homes offered under the Affordable Care Act. The goal of this program, also known as Hub (OTPs) and Spoke (OBOT or buprenorphine-prescribing providers), was to expand access to methadone, enhance methadone treatment programs by linking Health Home Services with primary and community services, and providing clinical staff to support and complement primary care providers waived to prescribe buprenorphine.

The results of this study serve as a strong baseline by which to evaluate Vermont's Hub and Spoke program and to assess whether the reduction in medical costs have continued under the program's service enhancements. Additionally, the methodology employed in this study will be expanded to analyze the impact of MAT beyond health care, such as on incarceration rates, employment rates, and rates of child and family services. These subsequent studies will provide a fuller understanding of the societal costs and savings of opioid addiction and treatment.

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Vermont Hub-and-Spoke Model of Care For Opioid Use Disorder: Development, Implementation, and Impact

John R. Brooklyn, MD and Stacey C. Sigmon, PhD

Background: Opioid use disorders (OUDs) are reaching epidemic proportions in the United States, and many geographic areas struggle with a persistent shortage in availability of opioid agonist treatment. Over the past 5 years, Vermont addiction medicine physicians and public health leaders have responded to these challenges by developing an integrated hub-and-spoke opioid treatment network.

Methods: In the present report, we review the development, implementation, and impact of this novel hub-and-spoke model for expanding OUD treatment in Vermont.

Results: Vermont's hub-and-spoke system has been implemented state-wide and well-received by providers and patients alike. Adoption of this model has been associated with substantial increases in the state's OUD treatment capacity, with Vermont now having the highest capacity for treating OUD in the United States with 10.56 people in treatment per 1000. There has been a 64% increase in physicians waived to prescribe buprenorphine, a 50% increase in patients served per waived physician, and a robust bidirectional transfer of patients between hubs and spokes based upon clinical need. Challenges to system implementation and important future directions are discussed.

Conclusions: Development and implementation of a hub-and-spoke system of care has contributed substantially to improvements in opioid agonist treatment capacity in Vermont. This system may serve as a model for other states grappling with the current opioid use epidemic.

Key Words: buprenorphine, hub-and-spoke system, opioid dependence, opioid use disorder, treatment

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Opioid use disorders (OUDs) are reaching epidemic proportions in the United States, and opioid-related consequences (eg, overdoses, premature death, infectious disease, criminality) have resulted in economic costs of \$56 billion annually (Becker et al., 2008; Wisniewski et al., 2008; Clausen et al., 2009; Birnbaum et al., 2011; Paulozzi, 2012; Jones et al., 2015b; Substance Abuse and Mental Health Services Administration [SAMHSA], 2016c). Whereas many geographic areas have experienced a persistent shortage in opioid treatment availability, this problem is particularly urgent in rural areas struggling with high rates of opioid dependence and few treatment options (Office of National Drug Control Policy, 2008; Rosenblum et al., 2011; Sigmon, 2014, 2015; Sigmon et al., 2016).

In 2000, Vermont was 1 of 8 states in the United States without opioid agonist treatment (OAT) for OUD. Opioid-dependent Vermonters traveled to neighboring states for methadone (MTD) treatment. After passage of Vermont Senate bill 303 in May 2000 allowing MTD treatment in Vermont, the first opioid treatment program (OTP) opened in October 2002 with a 100-patient capacity. A waiting list quickly developed, indicating continued unmet need for OAT in Vermont. Passage of the Drug Abuse Treatment Act (DATA) in 2000 and the introduction of buprenorphine in 2003 provided a new OAT option in Vermont. Use of buprenorphine expanded throughout Vermont with support from favorable Medicaid coverage, American Society of Addiction Medicine-sponsored waiver trainings, and incentives to support adoption of office-based opioid treatment (OBOT). Vermont emerged as a US leader in per capita number of OBOT providers (SAMHSA, 2006a, 2006b; Department of Justice, 2012). However, most OBOT physicians were treating only a small handful of patients, due in part to concerns about induction logistics, reimbursement challenges, potential for medication diversion, lack of support for providers with managing complex patients, and lack of psychosocial services for patients (Becker and Fiellin, 2006; Kissin et al., 2006; Barry et al., 2008; Netherland et al., 2009). As a result, it remained difficult for opioid-dependent Vermonters to find an available OBOT provider, and the waitlist delay at our state's OTP grew to almost 2 years (Department of Vermont Health Access, 2012; Sigmon, 2014, 2015).

This prompted recognition of the need for a specialized clinic which could induct patients onto buprenorphine before transfer to OBOT, retain complex patients, and also receive returning patients who destabilize during OBOT. Similar to networks used in the management of other chronic diseases

such as cardiology, infectious disease, and endocrinology (Lee et al., 2003; Nobilio and Ugolini, 2003), it was proposed that OAT could benefit from a system which integrates a center of addiction expertise (ie, the OTP as hub) with a network of providers in regional catchment areas (ie, OBOT providers as spokes). With the creation of Vermont's Blueprint for Health, OUD was designated as a chronic condition, and addiction medicine physicians and public health leaders developed the Care Alliance for Opioid Addictions Initiative, which became known as the hub-and-spoke system (Simpatico, 2015; Casper and Folland, 2016). In this report, we review the development, implementation, and impact of this novel hub-and-spoke model for expanding OUD treatment in Vermont.

METHODS

Hubs

Vermont was divided into 5 geographic regions, each with a "hub clinic" organized around an existing OTP that was given prescriptive authority to dispense buprenorphine along with MTD under its existing OTP licensure (Government Publishing Office, 2012). A gradual, staggered deployment of hubs began in January 2013 across all 5 regions. Briefly, hub staff assess patients' medical and psychiatric needs at intake and determine the most appropriate treatment placement (eg, in the OTP with MTD or buprenorphine, with spoke providers for OBOT). Entry points into the hubs also include hospitals and emergency rooms (especially after an overdose reversal or medical treatment for injection-related diseases), residential programs, Department of Corrections, and community mental health programs (Fig. 1).

Patient transfers between hubs and spokes are bidirectional. First, hub-to-spoke transfers are a primary aim of the

system. Once patients are determined to be stable on buprenorphine, they are assessed for potential referral to a spoke provider (described more below). If the patients have no primary care provider, they are linked with a medical home for ongoing health care and buprenorphine. In geographic areas without OBOT providers, a Medication-Assisted Treatment (MAT) team in each region calls on physicians and encourages them to become certified through trainings offered by the Care Alliance. Second, patients can be transferred from a spoke back to the hub if they destabilize in the OBOT setting. As all hubs are staffed by a board-certified addiction specialist, spoke physicians can receive ongoing consultation on any questions regarding patients in their care. Return transfers of patients from the spoke physician to the hub are prioritized to ensure that providers feel supported and patients receive continuity of care.

Funding for the hub-and-spoke system was tied to Section 2703 of the Affordable Care Act, which allows for Home Health Services as Community Health Teams and provides a bundled, monthly rate (subsidized by Medicaid or a state grant) for 1 standard clinical service and 1 medical service per month. An enhanced rate is available for 1 monthly additional health home encounter (eg, comprehensive care management, care coordination, individual and family support, referral to community services). Buprenorphine cost is carved out from the OTP cost structure, which is based on MTD. Suboxone film is preferred by Vermont Medicaid to a generic combo or mono buprenorphine product, with prior authorization required for doses over 16 mg. To reduce diversion risk, all dosing is observed and dissolving for 5 minutes is required before patients leave. The use of less-than-daily dosing of buprenorphine (Amass et al., 1998; Bickel et al., 1999) is often used to give patients more flexibility before they earn take homes.

Integrated Health System for Addictions Treatment

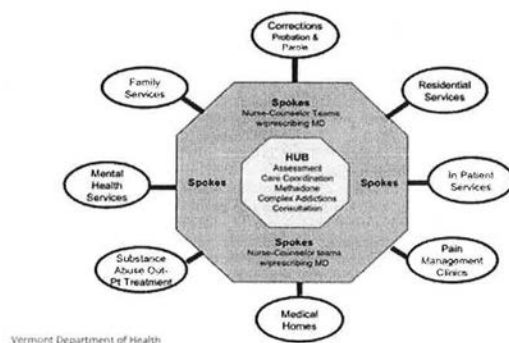


FIGURE 1. Components and referral sources for an integrated hub-and-spoke system for addiction treatment.

Spokes

In each of Vermont's 5 regions, waived physicians were paired with that region's hub and designated as spoke providers. Spokes have direct access to hubs for consultation on referrals, screenings, and induction logistics. Any waived physician is eligible to become a spoke provider, with the hope that with the extra support of the hub-and-spoke system, they will expand their patient capacity. Spoke providers include family practitioners, internists, psychiatrists, obstetricians, and pediatricians in Federally Qualified Health Centers, private group practices, hospital-owned practices, and solo practices.

Each spoke is supported by a MAT team consisting of 1 full-time equivalent registered nurse and a master's-level licensed behavioral health provider per 100 Medicaid OBOT patients. The MAT team is provided by the Vermont Chronic Care Initiative at no cost to the practice through a 90/10 funding split leveraged from the Affordable Care Act and Centers for Medicare and Medicaid (Casper and Folland, 2016). MAT team full time equivalents are split based on number of patients per practice, with the team traveling to multiple sites for physicians with few patients and a team embedded in practices with a large number of OBOT patients.

The MAT team nurse meets with new patients, reviews contracts and consents, arranges for insurance authorization, arranges for urine drug testing, authorizes buprenorphine refills to pharmacies, and oversees diversion control through random call-backs and monitoring of Vermont's Prescription Monitoring System. The behavioral health provider coordinates counseling services, manages acute crises, provides brief supportive counseling or check-ins, helps with practical issues (eg, housing, insurance, transportation issues), and coordinates referrals from the spoke practice and hub. Consistent with Vermont's MAT guidelines, all patients receive a behavioral health assessment and counseling services provided by a counselor either in the practice or outside of it. Whereas the MAT team counselor can provide brief counseling or case management, this was not intended as a substitute for needed psychosocial services in OUD treatment. The MAT team meets regularly with the spoke physician(s) to discuss cases, protocols, and coordination among staff. When a patient has a positive drug screen, rather than reflexively discharging the patient or transferring to the hub, the MAT team works to evaluate the patient's needs and provide additional clinical support.

To support state-wide dissemination and implementation of the hub-and-spoke model and establish consistency in all practices, a learning collaborative was developed (Nordstrom et al., 2016). It offers in-person and web-based lectures to spoke physicians and MAT staff covering safe prescribing, use of evaluation tools, treatment plan development, responses to relapse, patient noncompliance, and diversion control. The learning collaborative includes a focus on evidenced-based practices so that hubs and spokes share a common set of practices, which have since been published as the Vermont MAT Practice Guidelines (Vermont Department of Health Access, 2015).

Finally, we identified the need for a brief assessment that would offer an efficient evaluation of patient severity at

treatment intake and help physicians to pair patients with the most appropriate care. We developed the Treatment Needs Questionnaire (TNQ) to identify the treatment setting (ie, OTP vs OBOT) and not necessarily the type of agonist therapy best suited to each patient. The lead author (J.B.) sketched together a set of variables that were important in determining the severity of need, loosely based on the Addiction Severity Index (ASI; McLellan et al., 2006). Further refinements based on clinical expertise and reviews of the scientific literature (eg, Sullivan et al., 2010; Bukten and Skurtveit, 2014; Faraed et al., 2014; Perrault et al., 2015) led to a brief 21-item screener. It assesses areas of psychosocial functioning (eg, legal, drug and alcohol use, transportation, chronic pain, social support) with individual items summed for a possible maximum score possible of 26 (Fig. 2, available online in digital appendix). Higher scores indicated greater severity and thus the patient's potential need for a more intensive treatment approach (eg, hub rather than spoke). The TNQ has been incorporated into the intake assessment at all hubs and is often used as a triage tool by spoke providers.

RESULTS

The hub-and-spoke model supported a substantial increase in Vermont's OUD treatment capacity. According to Vermont Medicaid data, in April 2012, 650 people were on MTD in OTPs and 1700 were on buprenorphine in OBOTs for a 30:70 split. During its initial 3 years of implementation, approximately 900 patients were served in hubs in January 2013 to over 2800 by September 2015 (Fig. 3). There was a reduction in wait lists, but as more people sought treatment, these waiting lists remained unchanged in certain regions. The Southeast and Southwestern Vermont hubs nearly eliminated their waiting list, and the Central and Northeast Vermont hubs eliminated their waiting lists by March 2016. The Northwestern hub had reduced the waiting time for entry from 6 months to 2 months by March 2016 (Fig. 4).

By December 2014, of the 7212 people with a diagnosis of OUD, 5298 were getting OAT for a 73% rate of penetration (Casper and Folland, 2016). By September 2016, there were 3147 people in the hubs (2172 on MTD and 975 on buprenorphine) and 3457 (2621 Medicaid recipients) on buprenorphine in the spokes or 48:52 split in OTP to OBOT (hub to spoke). With 6604 patients on OAT and Vermont's total population of 625,000, this represents 1.05% of all Vermonters on OAT or 10.56 people treated per 1000 people up from 2012 when it was 3.76 people per 1000.

With regard to other aspects of the hub-and-spoke system, between 2012 and 2016, the number of waived physicians in Vermont increased from 173 to 283, reflecting a 64% increase. Density of buprenorphine patients per provider improved, with a 50% increase in those prescribing for more than 10 patients. By September 2015, 23% of spoke providers had >30 patients and 10% had >50 patients. From January 2014 to December 2015, 225 "stable" patients had transferred from hubs to spokes. In addition, the safety net component of the hub-and-spoke system is most evident in the transfer of "unstable" patients from the spokes to the hubs. The most recent data show 73 patients moving from spokes to hubs from July 2015 to January 2016. In addition,

TREATMENT NEEDS QUESTIONNAIRE

Patient Name/ID: _____ Date: _____ Staff Name/ID: _____

Ask patient each question, circle answer for each	Yes	No
Have you ever used a drug intravenously?	2	0
If you have ever been on medication-assisted treatment (e.g. methadone, buprenorphine) before, were you successful? (If never in treatment before, leave answer blank)	0	2
Do you have a chronic pain issue that needs treatment?	2	0
Do you have any significant medical problems (e.g. hepatitis, HIV, diabetes)?	1	0
Do you ever use cocaine, even occasionally?	2	0
Do you ever use benzodiazepines, even occasionally?	2	0
Do you have a problem with alcohol, have you ever been told that you have a problem with alcohol or have you ever gotten a DWI/DUI?	2	0
Do you have any psychiatric problems (e.g. major depression, bipolar, severe anxiety, PTSD, schizophrenia, personality subtype of antisocial, borderline, or sociopathy)?	1	0
Are you currently going to any counseling, AA or NA?	0	1
Are you motivated for treatment?	0	1
Do you have a partner that uses drugs or alcohol?	1	0
Do you have 2 or more close friends or family members who do not use alcohol or drugs?	0	1
Is your housing stable?	0	1
Do you have access to reliable transportation?	0	1
Do you have a reliable phone number?	0	1
Did you receive a high school diploma or equivalent (e.g. did you complete > 12 years of education)?	0	1
Are you employed?	0	1
Do you have any legal issues (e.g. charges pending, probation/parole, etc)?	1	0
Are you currently on probation?	1	0
Have you ever been charged (not necessarily convicted) with drug dealing?	1	0

Totals

_____ + _____

Total possible points is 26

Scores 0-5 excellent candidate for office based treatment

Scores 6-10 good candidate for office based treatment with tightly structured program and on site counseling

Scores 11-15 candidate for office based treatment by board certified addiction physician in a tightly structured program or HUB induction with follow up by office based provider or continued HUB status

Scores above 16 candidate for HUB (Opioid Treatment Program-OTP) only

FIGURE 2. Treatment Needs Questionnaire (for online/digital appendix). ©2015 JR Brooklyn & SC Sigmon, Licensed under CC BY-NC-ND 4.0 version 1/21/16.

over 250 patients from various OBOT providers that went out of business or moved were absorbed by hubs or spokes.

Of all Vermonters, 86% are enrolled in a Primary Care Medical Home (PCMH) as defined by the National Committee for Quality Assurance (NCQA). Once the multidisciplinary MAT teams were added to these PCMHs, creating

spokes, full coverage existed for all opioid users receiving MAT (National Academy of State Health Policy, 2014). The first hub (Chittenden Center) completed its baseline NCQA data assessment and became the first OTP to receive Medical Home status in the United States. The VT Blueprint for Health provides a project manager and embedded staff to monitor the quality of care for each hub. All other hubs are working on

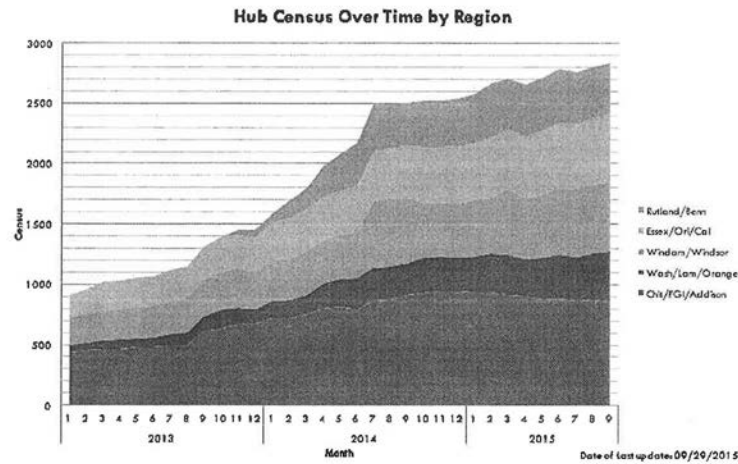


FIGURE 3. Patient census data presented for Vermont's 5 regional hubs over time (January 2013–September 2015).

NCQA status, so if an opioid user is not in a spoke, they can receive basic medical services in the hubs.

Cost impacts have been assessed by the Vermont Child Health Improvement Program (VCHIP). Before expansion of OAT in Vermont in 2012, individuals with at least 2 claims for OUD or opioid dependence in a calendar year had healthcare

costs derived from Medicaid Claims Data that were higher than those without claims (Mohlman et al., 2016). Since 2013, these overall healthcare costs, including the cost of OAT, have dropped by 7% to 10% (Krantz, 2014). The Department of Vermont Health Access projected in testimony to the Vermont legislature in March 2014 that for the 2164 patients estimated

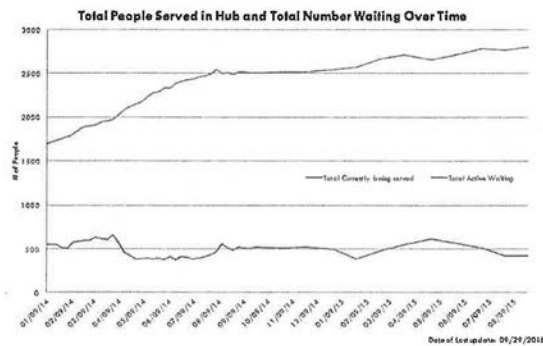


FIGURE 4. Total number of individuals served in hubs and number of individuals waiting for treatment over time (January 2014–August 2015).

to be served state-wide, the savings will be \$6.7 million (Chen and VanDonsel, 2015). A recent article by Tkacz and Volpicelli (2014) reinforces the cost savings of OAT.

DISCUSSION

We believe that the Vermont model is unique in the United States as a state-wide system to integrate OUD disorder and OAT into mainstream medicine, eliminating the "silo effect." From an integrated care perspective, as described by (Heath et al., 2013), the hub-and-spoke model follows a continuum from collaboration to integration. There is a similar program in Baltimore, MD—the COOp model—which allows unstable OAT patients from local physicians to come into a more structured program for a time, and stabilize and return to their home program (Stoller, 2015), and in Rhode Island, a program now exists to link buprenorphine prescribing in Medical Health Homes (Storti, 2016). Our program combines elements of both and is unique in linking all OBOT and OTP programs in a seamless way, state-wide, and linking patients with medical homes. The model has benefited from a fully funded program through Medicaid expansion and political and governmental support that is also unique in the United States.

Vermont now has the highest capacity for treating OUD in the United States, with 13.8 patients potentially treated per 1000 people (Jones et al., 2015a, 2015b), and currently are at 10.56 per 1000 as noted above. If current physicians prescribed to the limit of their waivers, the state would have close to 150% capacity in its spoke system. From the data, there is an overall increase in access to OAT, an increase in physicians waived to prescribe BPN, an increase in patients served per waived physician, a robust transfer of patients to and from each component, and a cost of care for OUD that remains at least neutral. Increased education on OAT and OUD through the Learning Collaborative, the use of the TNQ to triage more effectively, and Vermont policies that promote the treatment of OUD has increased the patients under treatment. The provision of MAT team services to assist with clinical, logistical, and administrative tasks reduces the resistance of providers to prescribe buprenorphine (Netherland et al., 2009).

The primary challenges encountered during implementation of the Vermont hub-and-spoke system include staffing shortages, particularly among nurses and clinicians, and difficulty ensuring accurate data collection across a network of treatment sites. There are also still areas in the state with few buprenorphine prescribers. Efforts are underway to change this, with the University of Vermont Medical Center supporting buprenorphine education with medical students and residents. Additional efforts are also needed to evaluate the drug abstinence and cost outcomes associated with the hub-and-spoke model, and also to establish the validity of the TNQ for assessing patients' treatment needs.

In summary, the landscape of OAT capacity in Vermont has dramatically improved. The development and implementation of a hub-and-spoke system of care has contributed substantially to this improvement and may serve as a helpful model for other states grappling with the current opioid use epidemic.

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Elements of a Comprehensive Public Health Response to the Opioid Crisis

Mark Levine, MD, and Michael Fraser, PhD, MS

The U.S. Centers for Disease Control and Prevention's report of 116 overdose deaths a day from prescription and illicit opioids in 2016 underscores the need for urgent action to prevent overdose deaths, promote evidence-based programs for treatment and recovery, and implement programs and policies that support the primary prevention of addiction (1, 2). Significant attention has been paid to the government response to the opioid epidemic and the efforts needed to guide federal and state agencies and assets to address the crisis. The public health response to date at federal and state levels has consistently focused on several major tactics: implementing prescription drug monitoring programs, expanding medication-assisted treatment, and improving the availability of naloxone. Building on the work of Butler (3), we posit that the opioid crisis requires an even more coordinated and comprehensive approach that includes robust prevention efforts; draws on leadership, partnership support, community engagement, and clinical expertise; and utilizes the available evidence.

We understand the desire policymakers and practitioners have for a "silver bullet" or an "easy" fix to address pressing public health problems. However, no single public health tactic or policy will end the opioid crisis. Instead, "silver buckshot" may more aptly describe the many efforts needed to address the nationwide epidemic of addiction and overdose deaths. The complex nature of this epidemic and its broad, pervasive, and substantial impact on communities and society at large justify a multipronged set of strategies and solutions. The comprehensive approach presented here builds on successful efforts by states and territories. It incorporates national "roadmaps" and "frameworks" that have been developed individually to guide government responses to the opioid crisis but have not fully addressed all of the tactical approaches to ending it (4-10). At a minimum, an outcomes-based approach would include strategies that 1) reduce the rate of death from unintentional opioid overdose; 2) alleviate the effect of the opioid crisis on children (neglect, abuse, and state custody), families, and communities; 3) reduce the supply of prescription opioids and related opportunities for diversion while developing integrated approaches to pain management; 4) ensure widespread and timely availability of medication-assisted treatment; 5) use evidence-based programs to prevent substance use disorder; and 6) offer opportunities for persons with opioid use disorder to sustain recovery and achieve their full potential.

The 6 key elements that frame our comprehensive approach are as follows.

Leadership, with key leaders in government and nongovernment agencies and in communities statewide, establishes a shared vision for comprehensively addressing opioid use disorder throughout the jurisdiction.

Partnership and collaboration promote the cross-cutting, multisector work needed to comprehensively address opioid use disorder. Clear objectives, defined strategies and tactics, and an understanding of the various cultures and business practices of partner groups (including clinicians and health care systems) are critical for success.

Epidemiology and surveillance capacity is a core asset of public health agencies. A comprehensive approach directs this strength to improve prevention, treatment, and recovery response by using real-time public health data for decision making and to inform the development and implementation of programs and policies.

Education and prevention include building individual and community resilience, addressing health-related social needs, implementing evidence-based campaigns to educate and build awareness, and engaging communities in addressing the root causes of addiction.

Treatment and recovery may or may not be part of a public health agency's purview. However, public health leaders should work to assess local policies and ensure that they promote evidence-based, comprehensive services for substance use treatment and recovery support that are accessible without waitlists to the population at large (including pregnant women and incarcerated persons). Leaders should partner to develop policies that support such activities statewide where needed.

Harm reduction and overdose prevention efforts (such as syringe services programs) provide opportunities to intervene and refer individuals to treatment. Public health leadership in implementing such programs is an important part of a comprehensive strategy, yet it requires significant attention to the political milieu in a jurisdiction, to fostering public understanding of the science of addiction, and to reducing stigma.

The **Table** enumerates each element and the tactics it comprises. Although public health agencies do not have direct responsibility for all of the elements described, leaders need to assess these strategies and ensure their implementation by relevant sectors. We posit that states and territories that adopt this approach and tailor it to relevant local and regional contexts will see reductions in opioid use disorder and overdose deaths by virtue of the strategy's comprehensive nature and the additive effect of working across public health, health care delivery, and other sectors to create change. We also acknowledge the critical importance of a seventh

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Table. Comprehensive State and Territorial Approach: Elements With Key Strategies

Element 1: Leadership Key strategies include ensuring the following: - Engagement of gubernatorial and cross-cabinet/executive branch leadership - Support and engagement of state and territorial legislator and key legislative policy staff - Support and engagement of community leadership - Support and engagement of public and private health care delivery leadership - Support and engagement of education, corrections, housing, economic development, and social services leadership
Element 2: Partnership and collaboration Key strategies include the following: - Engaging cross-cabinet state and territorial agencies, departments, and commissions (e.g., attorneys general, health and human service agencies, justice and corrections agencies, and licensure boards) - Engaging substate districts, including local public health agencies - Engaging surrounding/neighbor states - Engaging public and private insurers, community health centers, urgent care centers, hospitals, integrated health care systems, and other health care delivery partners - Engaging federal funding sources and agencies - Supporting multistate collaboration and data sharing with local, state, and federal law enforcement agencies - Supporting public health collaboration with medical, veterinary, dental, and pharmacy associations and provider communities - Engaging social service agencies and community-serving private and public agencies and organizations - Engaging the media - Engaging the faith community - Engaging business leaders and chambers of commerce - Engaging community groups and coalitions
Element 3: Epidemiology and surveillance Key strategies include the following: - Ensuring timely collection and analysis of data, including PDMP and clinical data, to drive public health action - Developing key indicator dashboards with real-time reporting to agency leadership and partners - Standardizing overdose reporting across the state, improving classification of opioid overdose deaths on death certificates, linking reporting systems to national efforts, and requiring overdose deaths to be reported in existing notifiable disease systems - Maximizing the link to publicly available information and establishing data sharing agreements between state agencies (e.g., public health, health care services, behavioral/mental health, education, employment, housing, and social services) - Examining variability in the incidence and prevalence of opioid use disorder by specific populations and/or in-state regions to customize response efforts
Element 4: Education and prevention Key primary prevention strategies implemented across the lifespan include the following: - Culturally appropriate education and awareness campaigns to raise awareness and address the stigma associated with addiction - Evidence-based strategies to prevent ACEs by strengthening family environments for at-risk children, including evidence-based home visiting and positive youth development programs - School-based primary prevention programs, including peer education and leadership programs in schools and colleges - Implementation of the Drug-Free Communities program - Community mobilization, including developing and expanding community coalitions - Development and implementation of programs that address health-related social needs, including housing, education, employment support, and food security Key strategies to limit the supply of opioids (such as judicious prescribing and rational pain management) include the following: - Developing/implementing pain management core competency education for practicing clinicians and students, including dentists and other prescribers - Mandating the use of PDMPs as clinical and surveillance tools; permitting physician delegates to query PDMP systems; and providing clinicians with deidentified, specialty-specific data to help them self-monitor prescribing habits - Improving PDMP linkage to electronic health record systems/clinical providers - Permitting the sharing of PDMP data between health systems, including the U.S. Department of Veterans Affairs and military facilities, and public health agencies - Permitting the sharing of PDMP data between states and territories - Incentivizing the use of evidence-based pharmacologic and nonpharmacologic alternatives to opioids for pain - Expanding policies that strengthen regulation of pain clinics - Developing policies that promote the implementation of prescribing guidelines and rules - Implementing/expanding policies that require electronic prescribing of opioids - Strengthening the authority of licensure boards/commissions to sanction overprescribing and/or failure to follow prescribing guidelines - Support for detailing/in-service trainings in clinical settings, such as physician practices
Element 5: Treatment and recovery Key strategies to promote evidence-based efforts to diagnose and treat opioid use disorder (such as treatment and recovery at the state and territorial level) include the following: - Treatment capacity - Supporting efforts to scale and spread SBIRT in clinical settings, such as EDs and primary care practices, to identify risky substance use behaviors - Increasing insurance coverage, including leveraging the Medicaid waiver process - Expanding the availability of MAT across diverse clinical settings (addiction specialty centers, primary care, EDs, OB/GYN, and psychiatry) and making it widely available to all persons who require it, including justice-involved and incarcerated persons

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Table—Continued

Developing an adequate workforce of Drug Enforcement Agency “X-waivered” physicians, nurse practitioners, and physician assistants (buprenorphine-naloxone prescribers) through strategies that incentivize provider participation in health home models (e.g., “spokes” in hub-and-spoke models)
Scaling and spreading health home models that integrate and coordinate services and support across primary care, acute care, behavioral health care, and long-term care or have added counseling services and treatment for polysubstance use and, where appropriate, co-located HIV and hepatitis screening, treatment, and recovery services
Supporting/expanding the use of peer recovery coaches in the ED and other hospital/large integrated delivery system settings
Establishing or expanding specialty treatment services for pregnant women and their infants
Establishing or expanding telehealth programs to increase access to care in rural, underserved areas
Establishing or expanding diversion to treatment programs and use of drug courts by law enforcement agencies
Enforcing mental health parity laws
Expanding support for the treatment and recovery workforce
Assessing land use and other local or state ordinances that may impede construction of treatment and recovery facilities
Recovery supports
Creating statewide networks of recovery centers with comprehensive and evidence-based services and supports
Promoting training and deployment of peer recovery coaches statewide
Promoting access to stable recovery housing
Promoting employment supports and opportunities for persons in recovery
Element 6. Harm reduction and overdose prevention
Key strategies to promote evidence-based harm reduction and overdose prevention activities include the following:
Expanding safe drug-disposal systems and sharps collection
Disseminating occupational health and safety standards for emergency/first responders
Disseminating safe storage guidelines for opioid medications to the public
Implementing evidence-based syringe services programs that include referral to treatment and naloxone distribution
Implementing statewide naloxone “standing orders”
Expanding naloxone distribution programs, including training for first responders and the public on its use
Implementing the Good Samaritan law or similar protections for persons who help those experiencing an overdose
Increasing screening and treatment for co-occurring depression, suicidal ideation, anxiety, and PTSD to mitigate risk for opioid misuse
Implementing use of fentanyl test strips as a self-testing strategy to prevent overdose
Continuing to assess the efficacy and potential legal status of supervised injection facilities under specific circumstances as the evidence base emerges

ACE = adverse childhood event; ED = emergency department; MAT = medication-assisted treatment; OB/GYN = obstetrics and gynecology; PDMP = prescription drug monitoring program; PTSD = posttraumatic stress disorder; SBIRT = screening, brief intervention, referral to treatment.

element: enforcement. Although enforcement lies beyond the purview of public health action, law enforcement and justice systems must be engaged to affect the drug supply, trafficking, and criminal activity that contribute to the opioid crisis.

A limited evidence base supports many of the prevention, treatment, and recovery efforts that currently make up local, state, and federal responses to the opioid crisis. Where evidence exists, it informs our proposed approach, but the many tactics described here need to be evaluated and assessed. As evidence is published and shared, the framework will be updated. In addition to building the evidence base for this work, sustainable funding mechanisms must be identified to support these elements, and the political environment to take a comprehensive approach needs to be cultivated. In our estimation, many federal agencies offer grant programs, which together cover almost all of the strategies. Although more money is needed to scale up and spread public health action, stakeholders also need to align their activities to avoid duplication of effort and to realize efficiencies that may be gained across programs or within specific communities.

The elements of our approach are meant to guide action in domains where public health agencies can and should lead. We suggest that the combination of these strategies in 1 coherent public health approach that is tailored for regional cultures and contexts will have a lasting effect in states and communities. We urge the clinical community, our state and territorial public

health colleagues, and local and federal partners in public health to assess each element and the proposed tactics and work with partners for rapid implementation.

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Assessment of medication for opioid use disorder as delivered within the Vermont hub and spoke system

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Hub and spoke

ABSTRACT

Opioid overdose deaths in the United States have risen dramatically in the past decade. In response to this public health crisis, Vermont created an innovative system called the “hub-and-spoke” (H & S) system, initiated in January 2013. The H & S system has 7 regional “hubs” that offer methadone and buprenorphine, as well as intensive support, and 77 local “spokes” (primary care settings) that offer buprenorphine (and naltrexone to a much lesser extent). Questionnaires were administered to 80 participants in the H & S system (stratified by geographic region, treatment site, and gender) and 20 participants with opioid use disorder not currently in treatment. Data included demographics, drug and alcohol use; opioid use; injection use; education/employment; criminal justice involvement; family and relationship functioning; health and healthcare utilization; multiple areas of mental health functioning; opioid overdose; satisfaction with life areas; stigma; and perceived treatment effectiveness. In-treatment group participants reported use and functioning for the 90 days prior to the date of the interview (T₂) and, retrospectively, a comparable 90-day period prior to treatment entry (T₁). Out-of-treatment group participants were queried about functioning at the time of the interview (T₂) and 12 months earlier (T₁). Individuals not in treatment showed no meaningful changes in any domain from T₁ to T₂. Conversely, participants currently in treatment in the H & S system showed large reductions in substance use, overdoses, emergency department visits, police contacts, and family conflict, and improvements in mood and satisfaction with all areas of life, except work/school participation. Additionally, 85% of in-treatment participants reported 90-day abstinence from opioid use compared to 0% of out-of-treatment participants at T₂. These findings illustrate that medication for opioid use disorders, as delivered in the H & S system in Vermont, is highly effective for reducing opioid use and overdose and improving functioning in many life domains.

1. Introduction

Opioid overdose deaths in the United States have risen dramatically in the past decade, and some experts predict that these deaths will continue to increase over the next decade (Bilau, 2017). Opioid-related consequences (e.g., criminality, infectious diseases, overdoses, premature death) have resulted in economic costs of \$56 billion annually (Becker, Sullivan, Tetraault, Desai, & Fiellin, 2008; Birnbaum et al., 2011; Clausen, Waal, Thoresen, & Gossop, 2009; Jones, Logan, Gladden, & Bohm, 2015; Paulozzi, 2012; Substance Abuse and Mental Health Services Administration, 2016; Wisniewski, Purdy, & Blondell, 2008). In 2011, Vermont Medicaid officials, leaders in public health and addiction medicine, university personnel, and politicians

collaborated to respond to the emergence of a severe opioid addiction problem. Through this effort, Vermont created an innovative system to increase treatment capacity and expand the range of services provided to individuals with opioid use disorders. The expansion of medication for opioid use disorders (MOUD), with methadone and buprenorphine emphasized, was prioritized because these medication-based treatments have strong empirical support (U.S. Department of Health and Human Services, Office of the Surgeon General, 2016).

The result of Vermont's initiative is the “Care Alliance for Opioid Addiction,” which has become known as Vermont's “hub-and-spoke” (H & S) system (Simpatico, 2015). The H & S system began in January 2013. As of 2017, the state's H & S system comprises seven hub clinics and 77 spoke sites, organized by geographic regions— Northwest,

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Northeast, Central, Southeast, and Southwest. Each region has a “hub” (or two hubs), which are licensed specialty opioid treatment programs (OTPs) with the authority to dispense buprenorphine and methadone to treat individuals with opioid use disorders (OUDs). “Spokes” are medical practices that provide office-based opioid treatment, primarily with buprenorphine.

Clinical services, duties, and staffing differ between hubs and spokes. Hubs have an extensive staff of MDs with extensive training and experience in delivering MOUD, staff physicians, nurses, advanced practice nurses, registered and licensed practical nurses, and counselors who provide intensive specialty-care addiction treatment. Behavioral treatment staff include licensed clinical social workers, alcohol and drug counselors, and case managers. In hubs, patients are inducted and stabilized on buprenorphine or methadone and services include urine drug testing; pregnancy and infectious disease screening; birth control information; and annual physical exams.

Spokes, on the other hand, are primary care settings, staffed by one or more waived buprenorphine prescribers and a medication-assisted treatment (MAT) team (one full-time equivalent registered nurse [RN] position and one counselor per 100 patients on MAT). The embedded RN and counselor help the physician manage patients, and these MAT teams can be shared among community physicians, based on the number of patients per practice. RNs meet with new patients, review treatment contracts and consents, arrange insurance authorization, conduct urine drug testing, handle random callbacks for diversion prevention, provide medication refills, and check prescription history in the Vermont Prescription Monitoring System. The counselors, or case managers, coordinate counseling services; manage acute crises; provide supportive counseling or check-ins; help with housing, insurance, and travel issues; and manage waits for service. The MAT team regularly meets with the physician(s) to discuss cases, develop treatment plans, and monitor progress.

In many of the hub and spoke settings, the most appropriate treatment setting (i.e., hub or spoke) for each patient is guided by using The Treatment Needs Questionnaire (TNQ; Brooklyn & Sigmon, 2017). This instrument was developed by clinicians in Vermont to provide guidance in patient placement in either hubs or spokes, in the absence of an established, validated instrument. Higher scores on the TNQ are associated with individuals with greater clinical complexity, and are treated in hubs. Those with lower scores are treated in spokes. In addition, the Office-Based Outpatient Treatment Stability Index (OSI) allows spoke clinicians to conduct ongoing assessments concerning the stability of their patients on buprenorphine to ensure treatment in spokes is appropriate (Nordstrom et al., 2016).

Using the H & S system, Vermont has expanded access to MOUD over the past 5 years (Brooklyn & Sigmon, 2017). In October 2016, the Vermont Department of Health awarded the University of Vermont (UVM) Center for Behavior and Health, a grant to conduct an evaluation of the Vermont H & S system for the treatment of OUDs. The purpose of this evaluation was to determine the impact of MOUD as provided within the service delivery framework of the Vermont H & S system. The focus of the evaluation was on multiple domains of patient functioning and the perceived utility of MOUD services for opioid users in Vermont. Specifically, the evaluation aims were to:

1. Collect quantitative data from patients reflecting the changes in their drug use and areas of functioning from treatment admission to at least 3 months into treatment, and compare data from patients treated in hubs with data from patients treated in spokes.
2. Assess in-treatment patient perspectives about the most positive and negative aspects of treatment in the H & S system.
3. Assess family members/significant others' perspectives about the strengths and weaknesses of MOUD for individuals in the H & S system.
4. Determine why some opioid-dependent individuals in Vermont either (a) fail to access treatment in the Vermont H & S system or (b)

discontinue treatment in the H & S system, and compare the changes in functioning of out-of-treatment individuals with those currently in treatment.

5. Determine the extent to which the H & S system is providing adequate access to opioid care throughout the state of Vermont.

This paper will examine the quantitative findings related to Aim 1 above.

2. Methods

The evaluation project was developed by University of Vermont researchers in collaboration with Vermont Department of Alcohol and Drug Abuse Programs (ADAP) staff. One hundred (100) participants (80 in-treatment; 20 out-of-treatment) completed a structured questionnaire administered by experienced interviewers (Rawson and McCann). All evaluation activities were reviewed and approved by the University of Vermont Institutional Review Board (IRB) and the IRB from the State of Vermont.

2.1. In-treatment participants

The quantitative evaluation of functioning used data from 80 individuals in treatment within the H & S service system. Patients (50% male and 50% female) in treatment from all H & S regions (proportional to regional populations) were included. Interviews were conducted in 5 hub clinics and 22 spoke sites. Of the 80 participants, 40 were receiving methadone treatment from the hubs (OTPs) and 40 were receiving buprenorphine treatment from spokes (e.g., primary care practices). We did not recruit patients treated with buprenorphine in the OTPs. All participants were recruited by responding to flyers posted in the hub and spoke clinic waiting rooms. Study candidates called the UVM research office, were briefly screened and, if appropriate, were scheduled for an appointment. Eligible participants were (1) currently receiving MOUD in the H & S system for at least 3 months; (2) 18 years of age or older; (3) able and willing to provide informed consent to participate; and (4) alert, aware of time and place, not experiencing psychotic symptoms, rational, and not severely intoxicated in the opinion of the interviewer.

2.2. Out-of-treatment participants

Twenty individuals were recruited from syringe-service programs and other community locations (places that allow public postings, such as libraries, laundromats, gas stations, etc.) in the cities of Burlington, Rutland, and St. Johnsbury. Eligible participants had either never received MOUD ($n = 10$) or had received MOUD in the previous 3 years but were no longer in treatment ($n = 10$).

2.3. Questionnaire (quantitative) data collection

Questionnaire data were collected from January 6, 2017, to June 20, 2017. The questionnaire battery contained four sections: (1) sociodemographic characteristics; (2) drug history, drug use, and other behavior and functioning; (3) participants' views of their treatment, their perspectives on the most important elements of treatment, and the extent to which they experienced stigma when in treatment; and (4) open-ended questions about perception of treatment experiences. The third section of the battery was not administered to out-of-treatment participants. All participants ($n = 100$) were asked about drug and alcohol use; opioid use; injection use; education/employment; criminal justice involvement; family and relationship functioning; health and healthcare utilization; multiple areas of mental health functioning; opioid overdoses; and satisfaction with life areas; the 80 in-treatment participants were also asked about stigma; and treatment effectiveness. If a participant reported a lifetime mental health diagnosis or was ever

prescribed medication by a physician for a mental health condition, the participant was categorized as having a mental health condition. Participants were asked to confirm that the report of a mental health condition was based upon a professional assessment rather than self-diagnosis. This method is less reliable than conducting a *Diagnostic and Statistical Manual of Mental Disorders* (DSM; American Psychiatric Association, 2013) assessment using the Structured Clinical Interview for DSM (SCID) or other structured assessment. However, the scope of the project made a formal psychiatric assessment infeasible. In addition, in-treatment participants ($n = 80$) were asked about their perceptions of stigma and their views of the treatment received and its overall effectiveness.

Questionnaire items were drawn from the Addiction Severity Index (McLellan et al., 1992), Patient Health Questionnaire 9 (Kroenke, Spitzer, & Williams, 2001), the Substance Abuse Perceived Stigma Scale (Luoma et al., 2007), and the Treatment Effectiveness Assessment (Ling, Farabee, Liepa, & Wu, 2012).

Self-reported opioid and other drug use and functioning (as described above) were collected at two time points (T_1 and T_2). In-treatment group participants reported drug use and functioning for the 90 days prior to the date of the interview (T_2) and retrospectively for the 90-day period prior to entering treatment in the H & S system (T_1). The out-of-treatment group participants reported use and functioning for the 90 days prior to the date of the interview (T_2) and retrospectively for the comparable 90-day period in the previous year (T_1 ; 12 months previously). The average time between T_1 and T_2 was 30 months for the in-treatment group and was set as 12 months for the out-of-treatment group. To assist all participants ($N = 100$) with providing accurate self-reports (for the T_1 periods) time-line follow-back methods were used (Sobell, Sobell, Klajner, Pavan, & Basian, 1986).

The questionnaire administration took 45 to 60 min to complete. Two experienced interviewers administered the questionnaires using a conversational, non-judgmental style. All questionnaires were administered in a private office at UVM, private office space at a hub clinic or primary care office, or a syringe exchange site. All participants were compensated with a \$40 gift card for their involvement.

2.4. Data analysis

A trained research assistant entered all questionnaire data into SPSS version 23. One-third of the data were randomly verified by a senior research associate to ensure integrity of the data. Correlations, means, standard deviations, and ranges were used to provide a description of study participants. Paired sample t -tests provided a description of changes from pretreatment to the current time point. Due to the small sample size, data were not normally distributed. Nonparametric tests were utilized for small sample size and skewed data to determine statistical significance. Statistically significant changes between a matched-pair T_1 and T_2 continuous data were analyzed using the Wilcoxon signed-rank nonparametric test. In addition, associations were examined using a chi-square and Fisher's exact test to assess p values of small cell sizes for categorical data.

3. Results

3.1. Demographics

Most participants were non-Hispanic White (95%), and 32% were single/divorced. The sample had a mean age of 37.6 years and a mean of 12.5 years of education. Less than a third (27%) were on probation or parole. There were no significant differences in the demographics between the in-treatment participants and the out-of-treatment participants (See Table 1).

Table 1
Demographic characteristics of all participants by treatment status ($N = 100$).

	In treatment ($n = 80$)	Out of treatment ($n = 20$)	Total ($N = 100$)
Age (in years), M (SD)	38.2 (11.1)	35.0 (8.1)	37.6 (10.6)
Age, %			
18 to 25	7.5%	15%	9%
26 to 35	40%	50%	42%
36 to 45	30%	20%	28%
Over 45	22.5%	15%	21%
Race, %			
Non-Hispanic White	95%	95%	95%
Latino or Hispanic	3.8%	–	3%
American Indian or Alaska Native	0.3%	5%	2%
Marital status, %			
Single (never married)	46.3%	50%	47%
Married/living together as married	32.5%	30%	32%
Divorced	21.3%	20%	21%
Education (in years), M (SD)	12.6 (2)	12.4 (1.2)	12.5 (1.9)
Parole or probation %	26.3%	30%	27%

3.2. Family/social relationships, housing status, and health status

Over half (58%) of all participants ($N = 100$) reported having a significant other. Among those participants who were currently in a relationship, 65.6% ($n = 38$) reported being in a relationship with a current or former drug user. In-treatment participants more often reported that they were in relationships with current/former drug users who were currently in treatment for drug use, compared to out-of-treatment participants (83.3% vs. 37.5%, respectively), χ^2 (1, $N = 38$) = 6.842; $p = .019$, Fisher's exact test.

A majority (73%) of all participants reported that they had children. Almost half (46.6%) of all participants reported a history of psychiatric illness. Participants also reported high rates of testing for HIV (94%) and hepatitis C (93%). Of those tested, nearly one-third (32.3%) reported being positive for hepatitis C, and one person reported an HIV + status. These rates were comparable for in-treatment and out-of-treatment participants.

3.3. Drug use and treatment history

3.3.1. Non-opioid substance use history

All participants ($N = 100$) reported significant histories of non-opioid substance use. Over 90% of participants reported lifetime use of tobacco (93%), alcohol (96%), and cannabis (96%), with a mean age of first use of approximately 14 years for all 3 substances. In addition, 97% of participants reported lifetime use of cocaine. Less frequently reported lifetime substance use included hallucinogens (73%), sedative/tranquilizers (71%), and amphetamines (60%).

3.3.2. Opioid use history

Table 2 presents the opioid use history for the 100 participants. Among all participants, the average years of opioid use at the time of the interview was 14.3 years. Mean age of initiation was 21.3 years, with 47% reporting use of opioids before the age of 18. At the time of the interview, 92% of participants reported illicit opioids (heroin/fentanyl) as the primary opioid used. Most (84%) participants began using prescription opioids prior to illicit opioids or medications. Use of "street" methadone or buprenorphine was common (81%). Of these 81 participants, 90.1% used buprenorphine, 2.5% used methadone, and 7.4% used both buprenorphine and methadone without prescriptions.

The mean age of first illicit opioid (heroin/fentanyl) use was 25 years, whereas the mean age of first injection was, on average, 2 years thereafter ($M = 27.2$ years). Of the 70 participants who

Table 2
Opioid use history of all participants by treatment status (N = 100).

Opioid use	Lifetime use % (n) (N = 100)	In treatment (n = 80)	Out of treatment (n = 20)	Total (N = 100)
Prescription opioids without a doctor's prescription	98%	21.8 (8.6)	19.4 (5.8)	21.3 (8.2)
Age first used, M (SD)				
Illicit opioids	92%	25.7 (9.9)	22.4 (8.9)	25.0 (9.7)
Age first used, M (SD)				
Opioid treatment medication, without prescription.	81%	27.3 (10.0)	28.6 (8.7)	27.6 (9.7)
Age first used, M (SD)				
Opioid injection	70%	27.3 (11.7)	26.9 (10.3)	27.2 (11.2)
Age first injected, M (SD)				
Participants that used opioids before the age of 18, %	47%	46.3%	50%	47%
Participants that reported using prescription opioids prior to illicit opioids or medication, %	84%	82.5%	90%	84% (84)
Years of opioid use, M (SD)		14.7 (8.5)	12.8 (7.5)	14.3 (8.3)
Range		1-44	2-30	1-44
Years addicted to opioids, %				
5 years or less		10%	20%	12%
5 to 10 years		25%	20%	24%
10 to 20 years		47.5%	45%	47%
More than 20 years		17.5%	15%	17%

injected, a majority (85.7%) reported heroin as the first drug ever injected. One individual reported buprenorphine as the first opioid ever used. Prescription opioids were primarily administered by oral and intranasal methods, but when participants transitioned to illicit opioids, injection became the primary route of administration.

3.3.3. Treatment history

One third (33.8%) of in-treatment participants (n = 80) were in treatment for the first time at the time of the T₂ interview. The remaining 66.3% of in-treatment group participants reported a mean of 2.3 previous treatment episodes and the entire sample reported a mean treatment duration of 33.2 months (Range: 3–141 months) at the time of the T₂ interview.

3.4. Non-opioid use

The change in days of use from T₁ to T₂ varied by substance. Among the in-treatment group (n = 80), there was a statistically significant reduction in use in all non-opioid substance use categories (p < .01, Wilcoxon signed-rank test), except tobacco and cannabis. There was no reduction in substance use among the out-of-treatment group (n = 20).

3.5. Opioid use

Out-of-treatment participants (n = 20) reported opioid use on over 80% of the days during the 90-day periods at both T₁ and T₂. As illustrated in Fig. 1, participants in the in-treatment group showed statistically significant reductions in the use of all categories of opioids. Use of any opioids among participants in treatment (n = 80) declined from a mean of 85.8 (SD = 13.9) days (out of 90) at T₁ to 3.0 (SD = 12.8) days at T₂ (p < .001, Wilcoxon signed-rank test), and 85% reported no opioid use of any type at T₂. Additionally, 62.5% of in-treatment participants reported 90-day abstinence from all drug use except tobacco, alcohol, or cannabis. There was also a substantial reduction in days of injection from T₁ to T₂ for the in-treatment group. Participants in the out-of-treatment group showed no reductions in opioid use or days of injection.

3.6. Areas of functioning

The in-treatment group (n = 80) showed statistically significant changes in areas of function related to health, employment, criminal involvement, family, and mood. There were no changes in the out-of-treatment group. See Table 3.

3.6.1. Medical services and overdose

Utilization of emergency departments (EDs) declined from a mean of 3.5 days during the 90-day T₁ period to 0.4 days at T₂ (p = .003, Wilcoxon signed-rank test). In aggregate, during the 90-day T₁ period, participants made 282 ED visits compared with 31 visits at T₂. Other measures of medical service utilization did not change significantly. Overdoses decreased dramatically from T₁ to T₂. Twenty of the 80 in-treatment group participants had experienced at least one overdose where they lost consciousness during the 90-day period before treatment admission (T₁), whereas at T₂, there were no overdoses in the previous 90 days.

3.6.2. Employment and school participation

The mean days of attending school or other training for those in treatment increased from 1.4 (SD = 5.6) days at T₁ to 5.0 (SD = 15.1) days at T₂ (p = .042, Wilcoxon signed-rank test). There was no significant change in days employed.

3.6.3. Criminal justice involvement

The mean days of being stopped by police or arrested decreased from 3.1 times in the 90-day T₁ window to 0.3 times at T₂ (p < .001, Wilcoxon signed-rank test). In addition, the mean self-reported days of engagement in illegal activities decreased from 32.4 days at T₁ to 3.1 days at T₂ (p < .001, Wilcoxon signed-rank test).

3.6.4. Family conflict and mood

All measures of family conflict and days with negative moods (depression, anxiety, or anger) decreased significantly among in-treatment participants from T₁ to T₂.

3.6.5. Satisfaction-with-life scores

There were no statistically significant changes in satisfaction-with-life scores from T₁ to T₂ for the out-of-treatment group. Conversely, T₂ satisfaction ratings improved in all six domains (drug use, school or work, medical situation, family social relationships, legal, and emotional health) among the in-treatment group (p < .001, Wilcoxon signed-rank test for all T₁ to T₂ comparisons).

3.7. Comparison of patient characteristics and outcomes with hub and spoke participants

Although there was considerable regional variation, in general, individuals were guided to treatment in hubs or spokes based on the severity of their OUD, with patients, using the treatment needs

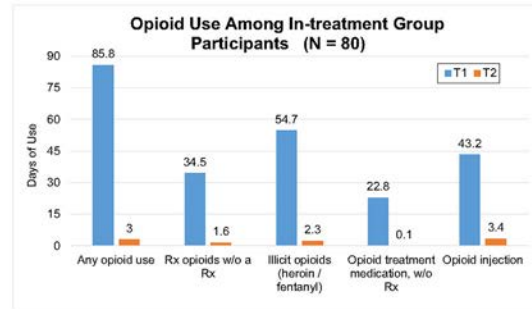


Fig. 1. Opioid use among in-treatment group participants (N = 80).

Table 3

Other areas of functioning among in-treatment participants (N = 80).

In the past 90 days	In treatment (n = 80)
Medical visits and overdose	
ED visits, # of times	
T1, M (SD)	3.5 (8.6) ^a
T2, M (SD)	0.4 (1.0)
Overnight hospital, # of days	
T1, M (SD)	1.9 (6.5)
T2, M (SD)	0.6 (5.6)
Outpatient or doctor's visits, # of times	
T1, M (SD)	2.8 (5.8)
T2, M (SD)	3.2 (5.9)
Overdose (Yes in the past 90 days)	
T1, %	25%
T2, %	0%
Employment and school participation	
School or other training, # of days	
T1, M (SD)	1.4 (5.6) ^a
T2, M (SD)	5.0 (15.1)
Worked, # of days	
T1, M (SD)	25.6 (30.9)
T2, M (SD)	27.7 (31.7)
Criminal justice involvement	
Stopped or arrested by police, # of days	
T1, M (SD)	3.1 (10.1) ^a
T2, M (SD)	0.3 (1.0)
Illegal activities, # of days	
T1, M (SD)	32.4 (38.3) ^a
T2, M (SD)	3.1 (24.4)
Incarcerated, # of days	
T1, M (SD)	1.9 (6.5)
T2, M (SD)	0.6 (5.6)
Family conflict and mood	
Serious family conflict, # of days	
T1, M (SD)	37.1 (36.4) ^a
T2, M (SD)	11.3 (24.4)
Felt depressed, # of days	
T1, M (SD)	68.1 (31.4) ^a
T2, M (SD)	21.4 (33.4)
Felt anxious, # of days	
T1, M (SD)	64.4 (33.8) ^a
T2, M (SD)	41.4 (36.6)
Felt irritable or angry, # of days	
T1, M (SD)	57.3 (31.9) ^a
T2, M (SD)	23.7 (28.6)

Note: T1 is the 90-day period before treatment among in-treatment participants.

questionnaire presumably with those with more severe OUDs in hubs and those with less severe OUDs in spokes. Consequently, a comparison of outcomes of participants treated in the hubs vs spokes may be confounded by severity at admission. With a sample size of 40 per group, with a $p < .05$ significance level, only a large effect size can be detected. Therefore, while statistically significant findings were reported, there may be other differences that were not detected due to sample size.

Unless otherwise noted below, there were no statistically significant differences between participant characteristics or outcomes in patients treated in hubs or spokes. Background characteristic differences included:

1. A higher percentage of participants in the hubs had a significant other with a drug use history (77.8% vs. 42.3%) than those in the spokes.
2. Fewer spoke participants were positive for hepatitis C than participants in the hubs (22.9% vs. 43.6%). This is likely related to the somewhat lower rate of injection drug use among spoke participants.
3. Only one hub participant, compared to seven spoke participants, had an opioid use history of 5 years or less. This difference suggests that individuals with a shorter opioid use history were directed to and/or selected treatment in spoke settings.

The Treatment Effectiveness Assessment (TEA) is a questionnaire designed to evaluate the benefits of treatment from the perspective of the individual in treatment. This instrument provides a patient-centered perspective on the overall effectiveness of the treatment received.

As noted above, there were few differences in drug or alcohol use or other areas of functioning or treatment satisfaction between participants treated in hubs and spokes. However, the TEA scores were an exception. As reported in Table 4, spoke participants reported a significantly higher overall cumulative score of treatment effectiveness (using the TEA) than did those treated in the hubs (Mann Whitney $U = 521, p = .007$). Individuals in both spokes and hubs rated the effectiveness of treatment for their substance use very highly, with 80% in both groups rating it with a score of 8 out of 10 or above. However, in the other three domains of the TEA (health, personal responsibility, community membership), spoke participants scored their treatment significantly higher than did hub participants ($\chi^2 = 5.7; p = .02$, $\chi^2 = 5.1; p = .04$ and $\chi^2 = 6.2; p = .02$, respectively). Fig. 2 illustrates the percentage of scores above 8, representing a very high degree of perceived improvement based on a 1–10 scale, for each of the four

Table 4
Treatment effectiveness assessment scores of participants by hub and spoke (N = 80).

	Hub (n = 40)	Spoke (n = 40)	Total (N = 80)
Overall cumulative score (maximum possible: 40)			
M ± SD	31.4 ± 6.3	34.4 ± 6.3	32.9 ± 6.4 ^a
Improvement domains, % scored above 8			
Substance use	80.0%	80.0%	80.0%
Health	20.0%	45.0%	32.5% ^b
Personal responsibilities	45.0%	70.0%	57.5% ^b
Community membership	47.5%	72.5%	60.0% ^b

Note: All items scored on a visual analog scale ranged from none (1) to much better (10).

^a Spoke participants reported a higher median TEA score than did hub participants (n = 80), $p < .01$; Mann-Whitney U.

^b Spoke participants more often than hub participants reported an improvement score of 9 or 10 in the domains of health, personal responsibility, or community membership (n = 80), $p \leq .05$.

domains contributing to the TEA score. Spoke participants perceived more help from treatment than hub participants in the three assessed domains other than drug/alcohol use.

4. Discussion

The Vermont hub-and-spoke system of care for opioid use disorders is an innovative and constructive public health response to the opioid epidemic in Vermont. The data from this project illustrate the positive impact of MOUD as delivered in the Vermont H & S system. Out-of-treatment participants showed no statistically significant improvements between T_1 and T_2 in any measures of functioning over a 12-month period. In contrast, the 80 individuals currently in treatment had statistically significant positive changes in most measures of functioning and substance use between the time of treatment admission (T_1) and the interview for this study (T_2), an average period of approximately 30 months. Those on MOUD reported large and statistically significant reductions between T_1 and T_2 in overdoses, emergency department visits, illegal activities and arrests/contacts with police, and days of family conflict. They also had significant improvements in ratings of depression, anxiety, and anger/irritability, and satisfaction with life. The only measured domain that did not show positive change over the treatment period was employment status.

Results also revealed that there was a substantial reduction of use in all substance use categories, except tobacco and cannabis, among in-treatment participants. The average number of days of opioid use

decreased from approximately 86 out of 90 days to 3 out of 90 days, which represents a 96% decrease in use over a 90-day period, and days of injection use decreased by 93% over a 90-day period. Although participants reduced many types of substance use, cannabis use remained an ongoing part of the lives of a substantial number of participants.

5. Limitations

This project is an exploratory study of the Vermont H & S system designed to provide an indication of how the patients on MOUD in the H & S system respond to treatment with methadone and buprenorphine. The data were collected in the first 6 months of 2017. Because the H & S model is an evolving model, the study data reflect a snapshot of the patient response to MOUD within this evolving system. Because the study did not include data from individuals treated with MOUD in an alternative model, these data cannot be considered a rigorous assessment of the effectiveness of the H&S model. Rather, the study data provide support for the benefits of MOUD for OUD as delivered within the H&S service configuration.

The evaluation has limitations associated with the accuracy of self-report and the modest size and non-randomness of the sample. In addition, all participants treated in the hub were treated with methadone and all participants treated in spokes were treated with buprenorphine. Hence, any comparison of hub vs spoke patient data was confounded by an associated medication difference. Individuals treated with buprenorphine in the hubs were not included in the evaluation.

With these limitations in mind, participants in treatment reported that MOUD as delivered in the H&S had a positive impact on reducing their drug use and related behaviors and improved their functioning in multiple domains.

Disclosures

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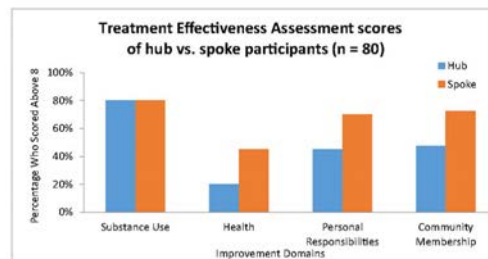


Fig. 2. Treatment effectiveness assessment scores of hub vs. spoke participants (n = 80).

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