

## Opioid Podcast Series, Season 2, Episode 4: Sustaining Recovery for Patients on MOUD; Panel Discussion

And welcome to ensuring medication for opioid use disorder in the care continuum. I am that Tosin David with IPRO and I'm going to be one of your hosts for this session. During the session, we will discuss sustaining recovery for patients on medications for opioid use disorder. Now I will turn over to my colleague Vanessa Andow to present our first speaker. Thank you, Tosin. Dr. Moy is the behavioral health medical director at TMF Health Quality Institute, working on federal and state projects. He's board certified in general psychiatry, a distinguished life fellow of the American Psychiatric Association and a member of Alpha Omega Alpha Honor Medical Society. He completed residency training at UT Southwestern Parkland Memorial Hospital. He served five years on the Malcom Baldrige National Quality Award Board of Examiners, four of which with the designation of senior examiner. During a decade of work with the Texas Department of Mental Health and Mental Retardation as clinical director at Austin State Hospital in Kerrville State Hospital. Dr. Moy is a past chair of the AMA Council on Long Range Planning and Development as Speaker of the TMAHOD and longtime active participant at all levels of medical professional organizations, including specialty societies. Then you'll be hearing from Dr. Bobby Redwood. Dr. Redwood is a physician improvement advisor for the Wisconsin Hospital Association. His quality improvement portfolio includes opioid stewardship, medications for opioid use disorder, and reducing stigma around substance use disorder. Dr. Redwood also serves as a physician lead for the Midwest Alternatives to Opioids program. The Wisconsin Dental Pain Protocol and a tri state coalition to reduce overdoses in long term care settings. Clinically. Dr. Redwood is an emergency medicine physician and serves as a state chapter president for the American College of Emergency Physicians. On that, I'm going to turn it over to you, Dr. Moy. I want to thank all of our participants and panelists for joining us today. We'll try and cover the interesting area of co-occurring disorders fairly briefly. We have a limited time, but it should be interesting. The first thing I'd like to do is just to go over the definition of what co-occurring means, and it's a combination of substance use disorders and mental illnesses. As you can see on the left, we have a list of substance use disorders who are specifically focusing on opioids at this time. But we should also know that rarely are these substance use disorders seen in isolation of other substance use disorders. As far as mental illnesses go, we most likely see anxiety disorders, depression, bipolar disorder, schizophrenia, and personality disorders. These are diagnoses that are derived from the American Psychiatric Association, Diagnostic and Statistical Manual, Fifth Edition. And just a note that in the fifth edition, the APA stopped using the multi axial diagnostic system that we had used for so many years. So, it's a little, little bit more challenging to understand what the priority is. That was the goal was to list the highest priority diagnosis first and then list the other diagnoses following rather than trying to segregate them into specific categories of medical problems. Just the numbers of individuals reporting substance use disorders and mental illness. So, for our primary age group, we're thinking about 50 plus, there are over 4.6 million people self-reporting, both substance use disorders and mental illness in 2022. Of course, the largest category is in the 26 to 49 group, but as I think as we see the population grow, we'll see increases in the 50 plus range. So now we have the concept of how we get to the co-occurring disorders while screening is our most used process, we oftentimes focus on the presenting problem, whether it's a substance use disorder or a mental illness. We use structured instruments and interviews at the same time. I just really like to note that psychiatric problems may require more individualized and open-ended questions compared to substance use disorders. You know, oftentimes when we do substance use disorders, we ask about the type of substance use, the last use, the duration of use, the presence or absence of withdrawal symptoms, and maybe some other social or legal aspects related to the substance use disorder. However, in psychiatric diagnosis or screening, we really need to ask more about symptoms rather than quantitative use that we've seen, but we may ask about changes in anxiety, mood changes, hallucinations or delusions, changes in the sensorium, probably some more questions about memory to try and better understand how far people have gotten in their but mostly depression, and of course, very importantly, we ask about suicidal ideation, the presence or absence of that, and then look at the degree if there's a positive

response, the degree of suicidal ideation and planning that the individual has. Also important is that we should ask about past treatment history, because it tells us a lot about the patient's journey, whether they've had inpatient treatment, residential treatment, what that treatment was for the success of that treatment, and it helps us get a sense of, well, what might we do in the future? This is, of course, not a one size fits all situation, but we must ask about both of these categories of illnesses, substance use disorder, and mental illnesses--if we're going to correctly identify co-occurring disorders. Well, this is a really important concept that I like to emphasize, that screening is not diagnosis. And oftentimes when we do a PHQ-9 and there's a high score, we come to the conclusion that that person has a depression, major depression. I think what it really tells us is that we need to ask more questions about it and understand the course of the symptoms, the types of symptoms, the family history, the past history, so that we can get to a very accurate diagnosis. I know that one of the things that we talk about today is the introduction of precision medicine. Typically, that's used to define laboratory or radiographic or imaging things to really try and zero in on the correct treatment. But I think we also can use that concept in diagnosis here. So, you know, a lot of people they present in the emergency room with paranoid and persecutory delusions. But is that really from the psychosis of schizophrenia or high amphetamine use? We really don't know. The other important concept in doing interview, psychiatric diagnostic interview is to build rapport and ask open ended questions. We're going to compare a little bit with motivational interviewing in a moment, but try to build, report and ask asking open ended questions. I always like to avoid questions where people can answer yes or no. You get really closed-off interviews with those patients that if they get down to a one-word answer. So just consider that. Also, a comprehensive mental status examination is necessary. I alluded to that in the previous slide. And when you really need to form an integration of all the data to come up with a holistic diagnostic assessment, and that includes physical assessment of the individual. Okay. Motivational interviewing, I think we've all heard about motivational interviewing, and I'm sure many of you are much more expert in motivational interviewing than I am. In motivational interviewing, we're trying to identify the current desired states for the individual, try and understand where they want to go, if they want to change, and try and describe that gap for the patient so they know what type of work they will need to accomplish to get to their goal. That's very different than a psychiatric interview where we're really trying to develop an understanding of the patient's current situation and their past. So, trying to blend these interviewing techniques can be a bit of a challenge. Again, it's hard to understand where a patient's motivation might be until we understand what their current presenting problem is and what their past history has been. There's a complication sometimes in my experience with substance use disorder treatments and psychiatric illness. You know, in my experience of many people with substance use disorders have a significant amount of anxiety, and anxiety disorders are a common diagnosis in this group. How we treat those anxiety disorders can make or break the success of the total treatment program. My sense is that people that have a lot of anxiety are not going to continue on a treatment program if they if they can't have some relief from their anxiety. That's probably a real motivation or real reason to explain their substance use disorder. So, we have to really carefully consider whether prescribing an anxiolytic medication, such as a benzodiazepine, is going to be more effective for the person's recovery overall than not. So sometimes abstinence-based programs can cause a conflict with treating an underlying psychiatric illness. I would just suggest that we need to think about these treatment programs from co-occurring illnesses, much like treating chronic pain. We need to look at additional therapies, alternatives to medication, and a true multidisciplinary approach. Next slide, please. Assisted outpatient treatment is a relatively new concept and is in place in some jurisdictions, and I really emphasize jurisdictions because this is going to be court ordered or assisted treatment. Some people may say that probation or parole conditions are a form of assisted outpatient treatment, but oftentimes those are really significantly coerced requirements rather than people agreeing to the program and needing a little extra help to maintain their treatment. The courts that do this are very specialized and work within the context of the community resources that are available and the providers. Individuals who are in assisted outpatient treatment really, really need to be engaged in this to have a lot of buy in. And this is not a program for people who are resistant to treatment. So that's where I would say it's very different than a condition of probation or a condition of parole. Something to consider, there is some effectiveness in this for what I believe is a small group of people, and it does provide another treatment option. Next slide, please. Community awareness is really one of the cornerstones of successful treatment. I can't tell you

how much stigma people with substance use disorders or psychiatric illness face just in everyday life. The fact that frequently referred to people as being addicts or schizophrenics or having a personality disorder really tends to put them in a in a in a small hole, and it makes it hard for them to get out of that hole. We also have a real conflict sometimes between substance use disorder treatment programs and mental illness treatment programs. They're oftentimes separated significantly, there's poor communication between the programs as far as developing a treatment plan, and sometimes there's just not a great deal of understanding between the types of treatment. For example, psychiatric programs in the past may not have understood that substance use disorders really are brain disorders and people need medications and treatment for those brain disorders. And likewise, substance use disorder programs in the past, probably still some today, look at substance use as being a character defect and would tend to tell people to pull themselves up by their own bootstraps and not engage in psychiatric treatment, including medications. So sometimes there's a lot of conflict. People hear conflicting messages, families are conflicting messages, and we need to help families and patients really understand how those things come together and a comprehensive, holistic treatment plan for the individual patient. So, a lot of folks talk about homelessness and I just wanted to spend some time talking about homelessness. These are the patients that are present in our emergency departments or maybe in the criminal justice system. Sometimes it's really hard to know what has precipitated the behavior that has gotten the person in those situations, whether it's a primary psychiatric illness or a primary substance use disorder. I can't tell you and emphasize how challenging that is and when we have a series of brief interactions, we may not really get diagnostic certainty. Again, reviewing the patient's past treatment, past interactions is really helpful in trying to understand the longitudinal course of illness and form a longitudinal treatment plan. We know that certain drugs can precipitate psychiatric symptoms, and we know that people who have mental illness oftentimes self-medicate with what's available and if people are homeless and, on the street, and don't have access or are not using regular medical care, and many of the street drugs are used to try and decrease psychiatric symptoms, so, this is a this is a real, real challenge. And there are really some significant community and cultural differences about how to treat people, and this varies across the United States. So, in some places, an individual's safety is prioritized. In other places, the individual's liberty is prioritized. So, we see a wide range of interactions and interventions for people with the same diagnoses and maybe the same symptoms from place to place. And of course, that would govern resource allocation for those individuals. I really want to emphasize two terms for you all today. In the psychiatric end of the business, there is the imminent risk of harm or danger to self or others. That is the keystone upon which involuntary treatments are initiated. So, I know we get frustrated from time to time. We know that a person has significant symptoms, but they do not meet the standard of having an imminent risk of harm to self or others, and they may not have involuntary treatment as a result of that. And I'm going to tell you that these interpretation of this vary significantly from jurisdiction to jurisdiction, from court to court, even among law enforcement and other first responders. The other is the concept of the least restrictive environment. So, this is another place where we have significant friction among health care providers in the community and law enforcement and in the judicial system. The standard of placing or keeping people in the least restrictive environment again, varies from place to place. I know in New York City, before the public health emergency, there was a much looser interpretation of this than in, say, Houston, Texas. The least restrictive environment is designed to try and ensure that each person has as much liberty or freedom as possible. I know that these concepts are not frequently discussed in the context of healthcare, but in psychiatric care and involuntary treatment, these are two significant cornerstones for us. So, with those comments, I'm going to turn this presentation over to Dr. Redwood. Thank you. I learn something every time you talk. So, I was taking careful notes there. And I really appreciate you walking the walk, because when we talk about combating stigma, the two things that I think we as providers can do most is use person first language, where you talk about a person with opioid use disorder, not about someone as though they are their disease, which you do excellently. I'd also just like to thank the QIO Consortium here for the opportunity to speak on a topic I'm very passionate about alternatives to opioids. So, when we talk about alternatives to opioids, what we're really talking about is different ways to treat pain. You know, the MU receptor that the opioids work on is just one of many, many different ways to treat pain. There is, you know, the in the brain, there's nerves, there's synapses, there's neurotransmitters, there's receptors. There's so many different ways to treat pain. There's non-pharmaceutical ways to treat pain, things like

physical therapy and acupuncture, mindfulness, cognitive behavioral therapy. There's so much out there. And we really got ourselves into a bit of a pickle here by being overly reliant on opioids. Now, when I talk about alternatives to opioids, I really want to talk about two different types of brains, the opioid naive brain. This is the idea of not giving that opioid naive brain their initial taste of opioids. So early on in opioid use disorder, the neurotransmitter that the opioids trigger is called dopamine. That is the pleasure sense, the pleasure neurochemical in the brain. So, when we eat that donut or we see an old friend, we get this dopamine rush and that is the high. When people are initially using opioids, they are chasing euphoria, they are chasing a high. And when you can avoid giving someone that initial taste of an opioid, if someone's at risk for a substance use disorder, you can avoid exposing them to that risk. Now, the opioid dependent brain is very different. The dopamine sensors have kind of settled down and now they're firing off glutamate and glutamate is the compulsion neurochemical in the brain. This is when someone has obsessive compulsive disorder, and they're go to check the door handle ten times before they leave the house. They feel like they must do it. They can't feel normal again until they've done that. Well, with the intense cravings, an advanced opioid disorder, those compulsions are so strong that they manifest as a disease. And so we can actually break those compulsions by decreasing the pure amount of opioids in that person's body. And also, you know, when people have advanced opioid use disorder, oftentimes their pill counts are very, very high. If somebody is getting 280 tabs of opioids a month, that's a lot of opioids to have in a medicine cabinet. And we know that a large amount of opioids that are out there are actually diverted. So, you have people going into other people's houses, family members, colleagues, coworkers, people doing work in the house, looking through a medicine cabinet and diverting those opioids. So, we really do want to keep those medical cabinets empty. It might be appropriate to use opioids for acute pain in certain settings things like broken bones, surgery, cancer pain. But you want to use small amounts of opioids for a short amount of time and not give excessive pill counts. So, we'll dive right into it, and we'll start with the opioid naive brain, which I think is the core of the Alternative to opioids program. This tragic journey towards opioid use disorder really does start with the single step. Ponder this for a second, 6% of adolescents who received an opioid for a dental procedure were diagnosed with opioid use disorder one year later. And I'll share a personal anecdote here. I've had an opioid one time in my life. It was when I had my wisdom teeth out. I was given Vicodin. This was back in the day when there were blockbuster videos, and my mom said, you can't come in the store. You are high. You know, you're feeling euphoric here. So, she told me to stay in the car and to prove to her that I wasn't, you know, 15 years old. I marched into Blockbuster Video. I was doing pushups in the middle of the store. Now, that's kind of a funny story, but it's also kind of not funny, right? A medical professional gave me a pill that made me very high. I was an impulsive 15-year-old who didn't have developed frontal lobes. I think I was at high risk for opioid use disorder. Now, I had a really good mom. She took those pills. She threw them all out. I don't remember that as a painful experience. I took ibuprofen, I took Tylenol, ate a bunch of popsicles. I did just fine. And that's what the medical literature shows us, is that multimodal pain control, the combination of ibuprofen and Tylenol, for example, is as effective or better than opioid pain control. There's synergy when you combine medications, A-plus B doesn't equal C, A plus B equals F. And that's really one of the goals of alternative to opioids is to find the synergies and use them use them for different types of pain. I work in a small community we're the only hospital in town when I have a patient, die of an opioid overdose, one of the things I do is I go back and look at their ED visits and I see when they were prescribed their first opioid. Sometimes it's a car crash three or four years ago, sometimes it's a broken bone from the ski mountain, and sometimes I'm the one who prescribed that opioid. It's a very sobering experience. It's a very scary experience. And when I go back and I see that that first opioid prescription was for a sprained ankle, a headache, throwing your back out. That's not okay. You know, that is too risky of a medication to use for these disease processes that are easily treatable with alternatives to opioids. And so that's what we're trying to do here, is really change the paradigm where opioids are a last resort, not the go to first degree pain medication. Now we all know that opioids are diverted, taken from medicine cabinets, used when they are not prescribed. It's actually 50% of opioid-related deaths are caused by opioids obtained from a family member or friend. So, when you prescribe an opioid, you know, when I prescribe an opioid as a provider, I'm not prescribing to grandma, grandpa. I'm prescribing to the local high school. And we do hear these reports, you know, everyone's heard them in your community of pharm parties or Skittles parties where everybody grabs a



handful of pills and puts them in a bowl and starts taking medications, prescription medications. These are those underdeveloped frontal lobes that we're talking about. You know, adolescents and teenagers do not have the restraint, the fully developed brain to make wise choices in terms of risky behaviors like pill taking. And finally, this is a uniquely American problem. So, we are 4.4% of the world's population and we consume over 80% of the world's opioids. So other advanced Western nations with modern medicine and advanced tertiary care systems managed to treat people's broken bones and treat people throwing their back out and treat their headaches and kidney stones without using the sheer quantity of opioids that we use here in the United States. We just need to course correct. And the alternative to opioids movement is an effort to course correct. When we talk about risk, you know, your risk of developing opioid use disorder. It really has to do with how long you're on the opioids. If I prescribe five days of opioids, you know, if you break your risk and you get five days of opioids, relatively low risk, you know, maybe 6% chance that you're still on opioids a year later, maybe 3% chance that you're on opioids three years later. That's not zero risk. That's still a high risk when we think about things like wisdom teeth surgery, everybody's getting that done every day across the nation. That risk will add up really quickly. But, you know, there's a conversation to be had there. Maybe there's a role for opioids, but a ten-day prescription, a two-week prescription, a three-week prescription, we're now at a 33% chance that that patient's still going to be on opioids a year later. I tell my patients that. I say, if I give you a long-term opioid prescription, there's a very high chance you're still going to be on this medication a year from now. I think the patients need to know the true risk of these medications. There are so many other ways to treat pain. You know, think about nerve blocks. When I reduce a shoulder in the emergency department, a dislocated shoulder when I take broken bones and put them back into place. I don't use opioids. I take a needle. I fill it up with Lidocaine and I bathe the nerve in numbing medication, much like the dentist does when you get a tooth pulled. The patients feel no pain. They feel pressure. Only I'm able to relocate their bones. When I was training, the standard was IV Dilaudid, one of the most potent opioids out there, putting patients at huge risk for opioid use disorder. Furthermore, the mu receptor is not even that great of a receptor. First of all, it mediates the reward process. We'll talk about that. But it gives people that euphoria, that high. That's kind of a problem, especially with episodic pain, pain like headaches, where that's going to come over and over again. You don't want someone to get a reward sensation every time they treat that pain. Patients get tolerant to it. And so, you need more opioids. People start taking their oxycodone maybe an hour earlier, maybe they take two of them. Maybe they burn through their prescription in three weeks instead of a month. And then there's this thing called the wind-up phenomena. So, you take an opioid, you block the mu receptor, but those neurotransmitters keep firing, firing, firing. And when the medication wears off and that transmitter is open again, it gets flooded with pain receptors or with pain neurotransmitters. And you get more pain. You get a wind up phenomenal. People actually get more severe pain when the opioid wears off. And what's the treatment when they get more severe pain? Well, they take two taps instead of one. Now, obviously, this doesn't happen to everybody. Some people do not use their medications inappropriately. And letter the law, takes it only as prescribed. But it's part of the reason these substances are so habit forming and so dangerous. So, we have the ALTO movement, the alternatives to opioids movement. It started at a single medical center, Saint Joe's in New Jersey. They said, we're using way too many opioids and they started combing the specialist literature and they said, well, would you look at that? Neurologists are using medications for headaches that we're not using in the ER. Why aren't we using them? We should start. And they did. Well, look at this. The urologist, the kidney doctors, they're using IV lidocaine for kidney stones instead of Dilaudid. Why are we doing that? We were siloed in medicine. There were all these therapies out there that we just hadn't brought into general practice. We all got together and put together a comprehensive plan to use fewer opioids by treating the most painful conditions, the conditions that are using the most opioids differently. Now, Colorado was the first statewide project to do this. And then I was the physician lead for the Midwest, ALTO project, a three-state consortium. And we focused in the emergency departments first on the most painful conditions, things like kidney stones, migraine headaches, fractures, chronic abdominal pain or gastroparesis, things where people are getting pumped full of IV Dilaudid. We said, let's get smarter about treating this pain. We've had excellent success in the emergency departments in the Midwest. We decreased opioid use by 20%. And I would say this movement has now become nationwide. There are bills in Congress about it. There is content that crosses specialties. And it would be odd to see an

emergency department that's not using some form of alternative to opioid therapy. Swedish Medical Center. So, when they did the Colorado Alternatives to Opioids Project, they were the guinea pigs, the first ones going forward. And if you look at week one there, this is the number of opioid prescriptions being given, 50% of their patients. Half of their patients were receiving an opioid. So, if you think about that number needed to kill, right. I'm an emergency physician. I see 3,000 patients a year. If I'm giving half of them an opioid, that's three kills a year, right? That is a significant number. And it bears out in the statistics. You know, we have 120,000 in 2024, we're on track for 120,000 opioid related deaths in the United States. So that's more than car crashes. That's more than COVID. That's more than all foreign wars, including Vietnam from the seventies onward. Every single year, year after year. It's just too much. But look what they were able to achieve in nine months. Less than 10% of the patients in that ED were receiving an opioid prescription. Now, when I show the stats to emergency physicians, they say, wow, those patients must have been mad, right? Patients coming in in extreme pain. They want their pain controlled. We show them the pain scale. Where's your pain at? It's a ten. Are you going to get it down to a zero, Dr. Redwood? These patients must have been mad, right? Quite the opposite. They were happier. Look at the 90th percentile of patient satisfaction scores. The white box there. We don't actually do that great in the ED, the people aren't very satisfied in the ED, they're maybe 78% satisfied, maybe on pain management, 68% satisfied. And that doesn't surprise me. We're seeing people in really stressful situations, probably the worst day of your year if you're in the emergency department. And not all problems are just fixable, right? If you break a bunch of bones in your back, that's not a very satisfying day for you. Alternatives to Opioids Project They're pulling 100% on courtesy on listens carefully, on treatments explained, 100% on attention to comfort, and 86% on pain management. When we treat with alternatives to opioids, we treat smarter, and we actually maintain a therapeutic alliance with our patients. I actually talk to my patients. I don't just hit the Staples button and say, Here's the strong stuff. Go fill your script, you know, do you want something for your pain? Some patients don't want to take control at all. Do you drive a lot or are you a driver? Are you sure you want to take a medication that makes you loopy? Hmm. What do you have to do? Do you have to get back to work and work on a factory line? Do you have to pick your kid up out of their playpen? How do you actually do that? How high is the wall on the playpen? Do you bend at your knees? Do you twist your back to lift? Yeah. Opioids are possible. We might go there. But did you know the side effects include? They can make you loopy. They're habit forming. They can make you constipated. Do you want those side effects? I have this alternative here. Patients really like face time with their doctor. They like sitting down and talking about their life, their functional goals, and really getting to the heart of their pain. I'm not at all surprised that patient satisfaction increases with alternative to opioids, and this is absolutely my clinical experience as well. It takes more time, but it's worth it. You know, a lot of patients have given up on things. They say Tylenol doesn't work on me. I've given up on it. They say, oh, I can't take ibuprofen. I had a liver transplant. I'm not going to take ibuprofen. Well, wait, wait a second. That's a misconception. With a liver transplant, you can take ibuprofen. Maybe you misheard your doctor. Maybe the wires got crossed somewhere. Well, sure. Tylenol hasn't worked for you in the past, but have you tried to scheduled Tylenol? Have you tried taking it around the clock? What about that synergy effect? When you take it together with ibuprofen, who's laying hands on your aching body? Have you seen an acupuncturist? Have you seen a massage therapist? Have you seen a physical therapist? Oh, a chiropractor didn't work for you. Well, what if we try acupuncture now? This kind of walks you through with the patient and helps us have these difficult conversations to make sure we're really maximizing the alternative to opioids and not just closing the door on potentially really valuable pain control modalities. We're going to switch gears here. So, before we were talking about the opioid naive brain not giving someone that initial taste of an opioid, not putting them at risk for a substance use disorder. But what if their brains are already dependent? We know that opioid use disorder is a chronic brain disorder, and we know that there are dramatic changes in brain function that actually reduce a person's ability to control their substance use. In opioid use disorder, there's a special chemical, it's  $\Delta$ FosB variant. I won't make you repeat that, but this is a new thing, this is discovered only in brains with opioid use disorder. We don't find it in other substance use disorders and  $\Delta$ FosB goes around the brain. It turns things on and turns things off. This pathways on, this pathways off, this pathways on, this pathways off. And it's like I said before, it starts with dopamine, it starts with euphoria, and it turns into compulsion. When I talk to my patients, I talk about the rider and the horse, the horse is

our limbic system, our lizard brain, or compulsion brain, it's what makes us want to eat all 20 donuts, and it's what makes us want to go have multiple sexual partners and spend 48 hours in the casino. And then our frontal cortex comes in and says, Wait a second, that's not really a good idea. You're going to get fired from your job, lose all your money, pick up some diseases you don't want. Maybe we'll just. Maybe we'll just tone that down a little bit. Well. With glutamate. It's all limbic system, right? And this is when we get these cravings, these compulsions. This is when patients start exhibiting maladaptive behaviors that contribute to the stigma around substance use disorders. Right. It is not normal to spend half of your day, 12 hours of your day going to different pharmacies and telling a sob story and trying to get excess opioid prescriptions. It's exhausting for the patient. It's exhausting for the society. And it's part of the reason that I don't regard this as an individual disease. I regard this as a community disease. But the cool thing about the brain is neuroplasticity exists. What that means is when we stop the opioids or when we dial down the opioids, we can actually return to something similar to original brain function. Those normal pathways, those pathways that got turned off by  $\Delta$ FosB can be turned back on again, and that's the role of alternative to opioids. The other thing is we actually want to get people treated right. We want them to have healthy, productive lives. I'm not just talking about opioid free lives. I'm talking about a steady job, benefits, family, you know, community engagement, all of the things that make life worth living and help us deal with the stress that life brings on. Well, the other thing that's particularly nasty about opioids is there's a part of your brain called the medial orbital frontal cortex. This is the socialization center of our brain. So, when we see that old friend from college, when we go to a family reunion and you get that warm glow, you're basking in that socialization. Well, opioids actually give you that glow and that basking, even more so five times, ten times more than the organic chemicals in our body do. And what it does is it pushes us away from socializing. The brain says, why would I socialize when I can get the same feeling even more intense from an opioid? Now the Rat Park experiment is this experiment done in the seventies that's getting a real fresh look these days. They had two, two trays of rats. One tray of rats was had a little dish with morphine in it, and they would get promptly addicted to morphine. And it was an austere environment. It was just a metal cage, nothing else. The other rat park had other rats to play with and mate with, it had cardboard to chew on, it had toys to play with, it had different varieties of food to eat. And it took those rats a long time to get addicted. They still got addicted to the morphine, but they took their time doing it because they had a social environment that was distracting them from that. Well, then when they gave the rats methadone and controlled their cravings and treated their opioid use disorder, the rats in the austere environment took much longer to get treated, whereas the rats in the social environment were able to maintain their trait, their cravings, and go back to normal existence much quicker. Well, it's you know, we're not rats, but it's quite analogous to treat opioid use disorder. It is not just medication. You've got to go to clinic, you've got to get counseling, you've got to see your peer review counselor, and go to community meetings. It's all about reintegrating people into society, people whose brains light up more for a drug than they do for socialization. And so, again, when we're talking about alternatives to opioids, we're talking about bringing patients into the social fold. And the nice thing about alternative to opioids is a lot of it is non-pharmaceutical therapy, it's physical therapy, it's acupuncture, it's trigger point injections. It's going to these regular healthcare environments where you can kind of get reintegrated into socializing with people. But when we talk about alternatives to opioids, this is what we're actually talking about. We're talking about a doctor, PA, or nurse practitioner sitting down in a chair and looking at all the different ways to treat a painful condition that are not the mu receptor. So, there are patients who come to my ER with migraine headaches. They have opioid dependent brains, and they say, you know what? Tylenol doesn't work for me. Ibuprofen doesn't work for me. Avoiding my triggers doesn't work for me. The only thing that works for me is IV morphine. And they say, hmm, that's not what the neurologists say. The neurologists say, we can start with this migraine cocktail, an anti-inflammatory, an anti-nausea medicine, a steroid. We can put you on oxygen that actually breaks the headache cycle, that avoids that wind up phenomena. It is so much more effective than morphine. If you give morphine for a headache, migraine headache, a large proportion of those patients are going to bounce back. They're going to come back with a worse headache because of the rebound phenomenon. Well, if a patient has intolerance to those medications or if it's a rare situation where it doesn't work, you look at all those options sumatriptan, haloperidol, IV magnesium, valproic acid. You as a patient, you don't need to know all these, but as a doctor, we need to know

all these. We need to know every option out there. So, opioids are the last resort. And what I love is if there's a tension component to it, how about light of pain patches? How about trigger point injections? We're actually laying hands on our patient topical therapy. There's not a pill for everything. In fact, pills have got us into a lot of trouble. And patients don't want pills either. You know, I have so many patients tell me I'm not a pill popper, Doc, what else do you have for me? So, we really want to focus on this multimodal pain control. And there are just so many options out there. We have similar algorithms for chronic abdominal pain, acute on chronic low back pain, renal colic or kidney stones, etc. So, we're all sitting here is the end of the presentation. You've heard all of me, you know, rambling on about alternatives to opioids. How about we actually practice an alternative to opioid? I give a lot of bad news in the ER, we do a lot of IV sticks in the ER, there's a lot of stress. And so, you want to have a strategy to dial down that stress. Well, box breathing is one of my favorite things to do. Not only does it bring down my patient stress, it actually brings down their family members stress my nurses stress, my own stress. I tell everybody in the room, let's take a moment and do some box breathing. This is evidence based. It's based in physiology. When we breathe in slowly, when we hold it for a second, when we breathe out slowly, and when we hold our lungs empty for a second, we allow carbon dioxide to build up in our blood and that carbon dioxide actually triggers the vagus nerve. The vagus nerve is the opposite of the fight or flight reflex. It's a parasympathetic reflex that causes everything in our body to just relax. And so, there's this phenomenon called the psychosocial ramp up effect, where when you anticipate pain, the pain is worse. So, people with episodic pain have this. If you have a migraine headache, you say, oh, no, the migraines coming back, here it comes, here it comes. It's going to be bad. It actually is worse. The pain is actually worse. And you can interrupt that cycle with some box breathing. So, if you indulge me, we're all going to box breathe together. I'll walk you through the first round and then we'll do two rounds together. You'll hear me breathing loud into the mic. So, breathe in for one second, hold for one second, Breathe out for one second, hold for one second. I have a low vent above my stove. I hit my head on it all the time. Every time I hit my head and that dang stainless-steel vent; I box breathe for three rounds. And I don't need ibuprofen. I don't need ice on my head. I can go about my day. It just turns everything down a notch. Thank you all for your attention. Wow. What a wonderful presentation. And I really enjoyed being able to take that, take a few moments and just really focus on my breathing. That was very helpful. Thank you. We're now going to go ahead and go through a few of the questions that we had from the audience. The first one is for Dr. Moy. Could you tell us more about how to raise community awareness? The communities need to know about the prevalence of mental illnesses, that they are much more common than people think. The lifetime incidence of depression in the United States is about one in five. It's much higher for anxiety disorders. I think we're learning that patients with serious mental illnesses like the schizophrenia, schizoaffective disorder, or significant bipolar disorder, those rates are somewhere in the total in the 5 to 10% of the population. So, knowing that someone, close to you, near you, a neighbor, a work colleague, a friend probably has or has had a psychiatric illness in the past. Is really important. And we often don't talk about these because again, just like substance use disorders are perceived to be character weaknesses or make people untrustworthy or unpredictable or shameful. But for most of our lives, we have had relationships with those folks. So, starting at home, I think, and being really honest with ourselves and knowing that we can have relationships with people who have had psychiatric illnesses or do have psychiatric illnesses is important. Unfortunately, what gets played up is mostly in the media today are the very real extremes of what happens and what can happen. I don't want to underplay that because they are a very real and significant questions that our communities and society has to answer and face and resource at some point. And we have a lot of conflicts, like I mentioned, the conflict between safety versus liberty. That is a really, really big conflict in many parts of the country. And it's really, really big when it affects someone you know and love. So that's where I would start. Thank you, Dr. Moy. And our next question is for Dr. Redwood. What would be your recommendations for facilities such as nursing homes with fewer resources and our rural, isolated communities? I love that question. What I love about it is that alternatives to opioids are actually pretty low resource. We do have things in the hospital like IV ketamine and nitrous oxide for procedures, but the bulk of the alternative to opioid curriculum is over-the-counter medications and readily available over the counter devices. So, for example, where we're actually thinking about making these things called ALTO carts, the little carts in the nursing home that have alternative opioid therapies on them. But if somebody sprains their ankle



in the nursing home, the first thing you do put ice on it, wrap it in an A strap and elevate it. Give them ibuprofen and Tylenol. Right. A lot of pain control is about addressing it immediately. So, in my emergency department, our techs in the waiting room are empowered to treat all sorts of things without a doctor's approval. If somebody comes in with an injury, put ice on it. If somebody comes in with a repetitive work injury, put heat on it. If somebody comes in and part of their body is swollen, putting an A strap on it, immobilize it. We have all these strategies. So, when I had that initial conversation with the patient, the conversation is not my pain is a ten out of ten. The conversation is all my patients down to a six. After that ice, I'm already feeling a little bit better. And so, we kind of start from a better starting place. The one big tip that I have is scheduled medications, schedule medications, even if it's short term, are much more effective than sporadic medications. So, if someone in a nursing home has a gout flare, for example, and they have as needed, ibuprofen written for, and you can give ibuprofen every 8 hours as needed for pain. Well, what I would recommend is, is use that as needed for the next five days and turn that into scheduled, not for life, but for five days. And so, you give it every 8 hours for the next five days to really bring that swelling down and get that potent anti-inflammatory effect. And I as a doctor, have started writing it that way. I'll say if there's an acute pain flare of a condition, you know, please give scheduled for five days unless patient has a side effect or something like that. And so that would be my big my big recommendation is intervene early. Don't forget to lay hands on the patient. Don't forget about non-pharmaceutical techniques and then schedule over-the-counter medications early on. The other thing you can do is, you know, you have medical directors in the nursing home. If things aren't working, actually ask your medical director, do we have an alternative here? Is there something that we're not thinking of that we can try in addition or in place of the opioid or in addition to. Great question. Thank you, Dr. Redwood I had a follow up question. Where does buprenorphine fit into that algorithm? Oh, yeah. So, when we talk about combating the opioid epidemic from a 30,000-foot perspective, there's basically five things we need to do. One is opioid stewardship. Keep opioids out of medicine cabinets. Two is alternative to opioids. Don't give people that initial taste of an opioid. Three is harm reduction. All sorts of things under harm reduction. Everything from needle exchanges to charcoal bags to dispose of medications. But the big one is naloxone. Reverse overdoses with naloxone. Four is erase stigma. You know, welcome people into the healthcare environment, a non-stigmatizing environment, treat them with dignity and respect regardless of the disease it is. And five is medications for opioid use disorder. And I would say primarily buprenorphine, buprenorphine in an outpatient setting to maintain people's cravings so they can build a healthy, productive life. Buprenorphine is not at all in conflict to alternatives to opioids. Buprenorphine is not considered an opioid at in the same way in my mind, because it does not produce euphoria and it actually treats the cravings, so buprenorphine is in a class of its own. When we look at someone's prescription drug monitoring database, the database where we track how many opioids, they're on, buprenorphine doesn't come into the calculation. We don't say, Oh, you're on buprenorphine. That's 100 milli morphine equivalents. We take it out entirely because it's a partial agonist. It just works differently. That being said, when people are on buprenorphine, a lot of them want to get off of it. A lot of patients say, I don't want any opioids in my body at all. I want to get off buprenorphine entirely. Now, that's noble, I understand why that feel that way. It's often actually unrealistic when people are maintained on buprenorphine. We often regard that as a lifelong drug. But for people who have chronic pain, episodic pain, fibromyalgia, chronic regional pain syndrome, if we can introduce alternatives to opioids, we do actually see that we can reduce the amount of buprenorphine that they require to maintain their cravings. I think we have one more question here, Dr. Redwood, is well, for older patients using dual non pharmacotherapy, if they cannot take NSAIDs, what would you use as an adjunct instead of instead of an NSAID? Oh, it's a classic question. It's the hardest population, right? So, when you get over the age 65, everything becomes on the No-No list. So, Beer's criteria is the list of medications that put elderly at risk. And of course, opioids are at the top of that list as well. Right. Opioids are for risk of constipation risk, altered mental status risk. So, it's kind of like choose your risk. What I would say is first, just check their kidney function. If someone's elderly, but they have good kidney function. I don't have a problem with putting that person on said, especially if it's a short course. You know, when someone has like bad arthritis and they're taking ibuprofen three times a day for years and years, those side effects and that stress on the kidneys do start to add up. The same thing with blood thinners, and, you know, this this is kind of a yeah, the asterisks I'll say here to ask your doctor, but

when someone's on Eliquis, for example, for AFib and they have a gout flare, I will have a shared decision-making conversation with that patient and say, hey, you might need an NSAID here. It's going to temporarily increase your risk for bleeding, but it's going to bring the inflammation down. You know, here are your risk here, your benefits. How do you want to treat this? Do you want the risks of an opioid? It's kind of like pick your poison. And sometimes it's more appropriate to choose the other risk, the non-opioid risk. And then there's there are a lot of non-opioid medications that aren't and non-ibuprofen medications as well. So, Tylenol is a great example. Gabapentin is a great example. Sumatriptan for migraine headaches is a great example. A lot of it is disease specific. And so, you look at that specific disease and say what are the non-NSAID options here? And there usually are options. Pregnancy is another difficult state you know where you have to think about non-pharmaceutical therapy more. I actually find in the elderly, sorry, I know I'm rambling on here, the acupuncture is actually quite effective in the elderly as well, and that's a pain modality that's starting to be covered more by Medicare. So, acupuncture is a great option if you can get it covered. Well, thank you, doctor, so much. We appreciate the presentation. Thank you so much.

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