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DEEP DIVE: THE OPIOID TSUNAMI

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DEEP DIVE: THE OPIOID TSUNAMI

(1:15 p.m.)

MS. WHITE-FAINES: Good afternoon. I am Adrienne White-Faines, I'm the Chief Executive Officer of the American Osteopathic Association which represents 130,000 U.S. physicians, osteopathic-trained physicians and medical students here. We are very proud to be sponsors of Spotlight -- some of -- one of many sponsors of Spotlight Health this year. And it's very appropriate that we have the opportunity to kick off and welcome you to this event to deal with and discuss solutions around opioid addictions.

For us, for osteopathic physicians, osteopathic physicians although they train in multiple specialties, the predominance of students and residents trained in osteopathic philosophies practice in primary care. And as such they take an approach to care throughout their training of looking at the whole person, mind, body and spirit. This is particularly effective and important when you're dealing with patients, families and communities suffering and challenging through the issues of opioid abuse. So not only do osteopathic physicians look at issues of alternatives to medications and self-management and integrative medicine, they also provide what is called osteopathic manipulative therapy which is shown to be one of the most effective treatments for low-back pain and as an alternative to pain medications such as opioid.

But the key is that we are together working on solutions to confront creating healthier communities. And so therefore it is my honor and privilege to help kick off this particular seminar as we all work together and collaboratively together to look at this complex and difficult issue.

The AOA has actually worked with the CDC and the administration and Congress and also worked very closely with the former surgeon general, Vivek Murthy, on many of these issues for the last several years. So we are thrilled to see that he is going to continue such advocacy going forward. And so let us begin by welcoming our moderator, Jackie Judd, who is a special correspondent for *PBS NewsHour* where she reports on domestic policy. She's a lifelong journalist who has reported for *NPR, CBS* and *ABC*

News. She's a well-known and welcomed moderator for Spotlight Health, and I know that all of us will appreciate all the great work and facilitation she will do now. So help me to welcome Jackie Judd.

(Applause)

MS. JUDD: I always say when I'm introduced and people name the number of places I've worked I've always thought are you all thinking she can't keep a job?

(Laughter)

MS. JUDD: It's been a good career. I'm so delighted to have so many of you here in the audience with us today.

The *New York Times* opinion writer Nicholas Kristof wrote a column that was published in *The Times* yesterday that I recommend to all of you. It was really a call to action. The title of it is Opioid, a Mass Killer We've Been Meeting with a Shrug. So you know where he is headed with this. The first line of the op-ed piece was shockingly blunt, "About as many Americans are expected to die this year of drug overdoses as died in the Vietnam, Iraq and Afghanistan wars combined." And the majority of that, those numbers will come from opioid users. Today alone, this day, 90 Americans will die from opioid use.

So this is what we are here to talk about, this epidemic, what's being done, what needs to be done, what we know works and what we know doesn't, and what does the future look like. And we have an amazing panel to discuss all of this. So thank you so much for joining us.

To my left, Yasmin Hurd is with the Icahn School of Medicine at Mount Sinai where she heads the Addictive Institute. She also focuses on the neurobiology underlying addiction.

Nora Volkow, most of you know her, I think, is the Director of the National Institute on Drug Abuse at NIH. She has been in that position since 2003. And Nora is a key figure in demonstrating that drug addiction is a disease of the brain.

Dr. Vivek Murthy is our former surgeon general in the Obama Administration. And during his tenure opioid addiction was a major campaign for him, and he launched a campaign called Turning the Tide, which we're going to hear more about in the next hour or so.

Finally, a fellow journalist, Perri Peltz, is a documentary filmmaker. You may have seen her most recent documentary broadcast on *HBO,* very powerful, you will see some short clips today. But in the way I recommended Nicholas Kristof's column, I recommend that you go home and watch her documentary, Warning, This Drug May Kill You.

Vivek, I'd like to start with you. What does this epidemic look like in 2017, what is the big picture?

MR. MURTHY: Well, it looks pretty bad. The opioid epidemic and addiction more broadly have become the defining public health crisis of our generation. And you heard some of the numbers just a moment ago. We have over 50,000 people who have died from drug overdoses in 2015 and over 60 percent of those are from prescription opioids. Now, you might be asking, just to back up for a moment, what is an opioid, to begin with, you're seeing this term everywhere, you're reading it in the newspapers.

Opioids are substances, sometimes medications, sometimes illicit substances like heroin, which act on receptors in the brain and diminish pain and can also cause euphoria. And they're used very commonly in the medical world to address pain, both acutely and chronically. But we have come to a place where we have more than 2.5 million people who are now addicted to opioids. We have about 1.9 million who have an opioid use disorder that involves prescription pain killers. A little over 600,000 who have a disorder involving heroin.

We have 12 million people, nearly 12 million people who are also misusing these opioids. They may not have a full-blown substance use disorder yet but they are at risk for that because they're misusing those opioids, and that might mean borrowing it from a friend when it's not prescribed to them, it might mean using it for purposes other than for pain relief, to reduce stress or to induce, create pleasurable feeling. So we have numbers that are quite staggering. But what has really been striking to me are the stories behind those numbers because what you see

when you go out and you meet people who have struggled with opioid addiction is that this is a truly devastating illness, it's one that tears people's lives apart, that destroys families, and that weakens communities.

I've sat over the years with parents who have lost children to drug overdoses. And it has just been devastating for them. I have also visited communities which have a growing number of children who are being placed in foster care because their parents have overdosed and died because of our prescription opioid crisis. So this is a real serious problem as you will hear during the next, you know, hour or so. There is progress that's been made. You know, we have been able to expand treatment, we've been able to get Naloxone in the hands of first responders, that's a medicine that reduces, that reverses rather the effect of opioids and can save people from an overdose death.

But we have a long, long, long way to go because we not only have to continue to expand treatment but we have a lot more work to do on the prevention side when it comes to public education and particularly when it comes to eradicating stigma around addiction which prevents people from coming forward and seeking help.

MS. JUDD: Thank you. That was a terrific preamble.

Perri, you put the human face that Vivek was just talking about, you put the human face to this epidemic in your documentary. What drew you to this subject?

MS. PELTZ: You know, it's a great question. About 2 years ago I was having a meeting with my boss at HBO, the wonder -- the legendary, really, Sheila Nevins. And Sheila said, she was reading these articles and she said what's going on, all these people are overdosing and dying. But we didn't really quite understand. I had heard something about it but didn't really know what it was. And of course as we researched it we learned that it was this opioid epidemic that was sweeping the country. But the narrative at the time was it was bad kids abusing good drugs that were meant for pain patients. And what we learned is that's just not the case.

There is some abuse obviously that is a part of this, but the vast majority of people who first of all who go to heroin started with a prescription opioid. And they're not bad people, they are people who have become addicted. And we decided that what we wanted to do and what we think we can do best in documentary is tell stories, the people who are becoming trapped in this epidemic of addiction not this epidemic of abuse. And we really wanted to try to help change that narrative.

We started the film in a very shocking way. You're going to see it in just a second. We didn't have -- originally we didn't start the film that way and we decided at last minute to make the change because we want to show people what this actually looks like. And for too long all of us had been saying, well, it's somebody else's problem, it's not our problem, it's not going to happen to me. The fact of the matter is it's happening to a lot of people, to our parents, our children, our cousins and our friends, and we really wanted to show what that looked like and what it looks like to overdose. So here's the opening of the film.

(Video being played)

(Applause)

MS. JUDD: Perri, you include in there that Purdue ended up paying a fine, was that the extent of what happened to that company?

MS. PELTZ: Well, I want to point out to everybody that they paid a fine, which makes it sound like it was a lawsuit, it wasn't. This was a criminal case. And what they pleaded guilty to was misleading regulators, misleading doctors and misleading patients about the risk of addiction. So when you saw that doctor saying that the risk of addiction was less than 1 percent, they actually knew that that was not the case, and that all came out in this in this court proceeding. And I don't -- I also want to -- Jackie, I just want to really quickly point out, we are not pointing a finger at Purdue Pharma, they were -- it was a storm of things that were happening at one point, it was a part of what was happening in the mid-'90s.

MS. JUDD: Yasmin, it's abundantly clear, and if you see Perri's documentary it becomes abundantly clear that the addiction happened so fast, why, what is the

neurobiology behind it and explain it in a way that this general audience including myself will understand.

MS. HURD: Well, as a neuroscientist, and I think Nora touched on a couple points this morning in her talk, you know, for us neuroscientists it is challenging to come up with the mechanism of action of why the addiction necessarily is that quick. However, there are couple of things that make it important in that respect, and one is a lot of these opioids they pass the blood-brain barrier very quickly, they get into the brain very quickly. And we know that many drugs that are, have the higher addictive potential the faster they get into the brain and the faster they leave, the faster they bind to the receptor.

For example, the μ-opioid receptor is where the opioids bind and simulating pain mechanisms and also reward, euphoria. So the faster they bind the faster -- and leave the faster they become addicted. Why it is that some people, even like 3 days of being exposed to an opioid it starts that very rapid trajectory into addiction while others it can go for, take a longer time, we still don't know. But genetics come into play, and there are things we can talk about later with that in terms of the individual vulnerability for most addictions there are also there for opioid abuse.

We know that some of the genetic variants of the receptor where all the opioids bind they are different in everybody in this room practically, and some of those variants make certain people more vulnerable. But the addiction capacity is really for the large part the rapid binding to the receptor and the signaling cascade into cells that --

MS. JUDD: And is there a way to quantify what number of people will be prone to addiction versus someone else who could take a prescription given by a doctor, end it and that's it?

MS. HURD: There are studies starting now, there are ongoing studies now, I mean I think that a lot of the research that had been done before had small sample sizes for us to really make definitive answers in that respect. But there are a number of big studies that are going on. For example, people who are getting the same amount of opioids for pain and you're looking to see which percentage

of those individuals develop a substance use disorder later on. As we get larger numbers we'll be able to give better information about what genetic risk and also the environmental risk that comes into that. Of the studies that have gone on, I don't know, probably Nora would feel more comfortable, I think that we still need more studies, much more research to really give those definitive answers as to which person in this room would be that person who become addicted.

But the type of opioid is also important. Fentanyl and now Carfentani, these extremely, extremely potent opioids, even if you are not at high risk taking those will definitely put you over the edge. So again, it's the type of opioids and your genetics and certain environmental factors that really come into play.

MS. JUDD: Nora, I'd like to ask you a two-prong question, one take us back in history a little bit to help us understand where this epidemic began. The Purdue campaign that Perri highlighted took place in the late-1990s, one. Two, so it's clear this epidemic didn't start yesterday, it didn't even start last year. But it's only getting attention at a national level, I think, in a way it has until recently, just -- it's just happening. So are we at an inflection point? Is it getting more attention now? Because it's happening to people who look like us.

MS. VOLKOW: Yeah, I know. And I had a presentation this morning, I commented on this. And that was the notion of, coming to your question about, bring those back, and I like to speak about this epidemic in terms of three things that make it very notable, one of them is the number of people that are dying. Number two, that the people is actually not the classical demographic that we're seeing, and it's making it clear that anyone can become addicted to drugs, it's not just the person over there. And the third one which brings it to the point that this is the first time that we have an epidemic like this that is so severe, the most severe that we've had and it was generated in the health care system.

And it was -- and that is something that we need to be aware of because it's important in order to actually address it. And it was a good intention, the good intention of treating patients suffering from pain that can be very debilitating and physicians actually not having the

knowledge at the same time that there was very strong advertisement practices from pharmaceuticals like the one that we just showed that would capitalize with the notion that we were all taught in medicine that if you had pain you will not become addicted to your opioid medication.

And so that led physicians on the one hand to become overconfident about the utility of these medications that are very good for acute but not for chronic pain on the one hand. The other reality was that there were not many alternatives. So if you have a patient suffering from severe chronic pain, there may not many things that you can give them, so they rely very rapidly then of course on the opioids. And again coupled by the fact that there was a push from pharmaceutical to move these drugs and also from insurance companies because in many ways it's much cheaper to provide an opioid medication for someone suffering from chronic pain than to actually give them the integrated model of cure that you require, so --

MS. JUDD: Behavioral counseling, physical therapy.

MS. VOLKOW: Exactly. And that is, again, much more time-consuming. And insurances are not covering for it. And so I get physicians writing to me and says, yes, we agree with you, with all of the points that you are saying, but I cannot endorse those treatments to my patients because they're not going to be reimbursed. Another, primary care physicians are the main ones prescribing opioids and they have 12 or 13 minutes to see a patient. So how practically are they going to be able to properly engage in the treatment --

MS. JUDD: And then this question about why now, why are we here now, why is Nicholas Kristof writing now, why is Perri doing a documentary now.

MS. VOLKOW: Yeah, the question, what led? And you know, and I also mentioned it earlier this morning because I came to NIDA in 2003 and 6 months into my tenure they showed me these data showing extremely high levels of opioid use among teenagers, and that immediately caught my brain because I had never seen adolescents abusing opioids. So we started, and I started to look at it and I realized that there was a significant increase in the abuse of opioids across all ages. And I started to try to engage

the health care system and my clinicians and friends and colleagues, and actually I remember going to the director of the Dental Institute and I said do you realize that dentists are the main prescriber of opioids for teenagers, and says, "No, Nora, that's not our indication, that's not what the guidelines say." And I says, "Well, this is what the prescription numbers are."

So there was a lot of lack of knowledge. And even though I just spoke and I feel very frustrated because they were like no one was listening, and I commented, so I thought about it a lot, what made the difference. And it gave me a lesson because I think that the way that you see things is fundamentally in making salient. And you in the media was, obviously are the experts on this. But I think that the narrative that make that difference, the point that trigger it was that when they started to make that comparison there so many people dying as they are on car crash accidents, that narrative actually got the attention of the public and it got the attention of the agencies, and that's when they actually realized that we have a massive problem in our hands.

It was very unfortunate because by not being able to tackle it very early on, what -- it allow also at the same time unbeknownst for many of us, including me, that is something I did not pick up, there was a major entry of pure heroin coming from Mexico that was seeding the whole country and taking cover very nicely, like basically the soil was ready on people that have become addicted to prescription opioids. So we were not predicting that heroin, that rise on very -- on the use of very cheap heroin, very, very potent that then is increasing the number of people overdosing and dying.

And then the new component, which is what Yasmin was referring to, the opportunity that the drug dealer see of introducing even more potent synthetic opioids because then you don't even need to grow a plant, and the doses that you require, the volume is so small that it's very difficult to control across the borders. So in the past you need these big volumes of drug, now they are minuscule. So it changes all upside down in terms of prescription opioids that led to the heroin epidemic, and that's now bringing it up, these new synthetic, many of them we actually don't even know what their pharmacological action was.

MS. JUDD: It was -- I think it was last year that the CDC issued prescribing guidelines for opioids.

MS. VOLKOW: Yeah.

MS. JUDD: Vivek, part of your turning the tide campaign was to send a letter to almost over 2 million physicians about this subject. What did you say to them and what was the reaction? And did it have an impact?

MR. MURTHY: So it's a good question. Let me comment also, just if I can add some color to the last question as well. I agree with everything Nora said. I mean, this is -- the origins of this epidemic are very complex. And there were people like Nora and others who 10, 15 years ago were trying to raise the alarm about this. But it took a long time for people as a profession to fully get on board.

Now, I think that part of that, part of the reason why we've seen a switch in terms of awareness has to do with who's affected. The truth is you would like to believe that leaders in society, whether it's leaders in Congress or in the media or in our institutions, whatever, decide what to cover and what to target in terms of legislation based on the scope and volume of impact. But that isn't always the case. It turns out that personal narrative and personal experience still drive a lot of what people think about because people are people. And as legislators and other leaders started to see more people who look like them and who they knew affected by this crisis then I think it started to take hold in people's minds that, hey, maybe there's something real here.

But the truth is that drug crisis in America did not crop up 5 years ago, 10 years ago, 15 years ago. You know, we spent many decades dealing with the drug crisis, but for during much of that time the drug epidemic was focused and concentrated in poor communities and often in communities of color, and many of those communities are very upset now because they say where were you when we were struggling 30 years ago, where was all of this outrage and the effort and the focus from both sides of the aisle. And the truth is that 30 years ago as a country we largely said, not everybody but many people understood addiction to be a disease of choice, a disease that was, you know,

affected people who were of weak character or weak morals and didn't have the willpower to say no to drugs. We now know that that's not the case. And a big focus of my work when I was surgeon general, a big focus of Nora's work and many of our colleagues has been to redefine addiction as a disease of the brain, a chronic illness just like diabetes or heart disease.

Last year when I was launching the Turn the Tide campaign this was one of the points we were trying to make to doctors because you would -- you might ask yourself the question, isn't this normally taught in medical school for years that addiction is a chronic disease and how to treat it, et cetera. Short answer is no, it's perhaps better taught now than it was 15, 20 years ago. But the science has evolved a lot but doctors still have to catch up with a lot of that. So in the letter that I issued, it was to 2.3 million health care providers, including doctors and nurses and dentists, and what we did is we urged clinicians to understand that this was an epidemic that we had to partially take responsibility for, that there were things that we did, well-intentioned though they may be that inadvertently may have contributed to this crisis.

And the flip to that was to say that we also as clinicians have an incredible opportunity to come in and make a difference because we can change how we prescribe and dramatically reduce the supply of opioids that are misused. We can use opportunities to educate the public about addiction being a chronic illness, and we can connect people to treatment. We still have over a million people who are living with an opioid use disorder who are not getting treatment, that's a massive treatment gap and we have to close that. So that's why we issued the letter. It was the first time actually in the history of our office that such a letter had been issued.

And we got a lot of really interesting feedback from it. We heard from some doctors who took the letter and actually pinned it up in their medical conference rooms because they wanted their colleagues to learn about it. We heard from patients actually who printed that letter and took it to their doctor to make sure their doctor was aware that this was an issue and they wanted them to be aware of it when they were treating their pain. We heard from doctors who said -- wrote to us and said, you know, I knew this was a problem but I had no idea that our profession

had such a role to play in it. And we heard from many who voiced concern and frustration saying, gosh, we know -- now know how bad this is, but we feel there are so many roadblocks to us doing the right thing. You tell us to connect people to physical therapy and cognitive behavioral therapy as alternatives to opioids, but a lot of times those aren't covered, as Nora said, their co-pays are more expensive and more frequent for patients and it takes more time, which is a barrier for patient and for clinicians.

MS. JUDD: Let's talk about the patients for a moment. You interviewed many people I think even more than showed up in the documentary --

MS. PELTZ: Yeah.

MS. JUDD: -- who had become addicts. From your point of view, Perri, what should these people have asked their doctor when they were given these prescriptions? And there was one woman in particular in your documentary who might have asked some questions.

MS. PELTZ: Yeah. I want to add, Jackie, that when you talk about the issue of color and the fact that communities of color are upset now rightfully so saying where was this big public health response in the past, white people have been upset about our documentary because everybody in the film is white. The fact of the matter is this epidemic has largely impacted white people, and the question is why, why is that. And the fact of the matter is it's complicated, but evidence suggest that when patients are black they are under-treated for pain, and so they weren't getting prescribed in the same amount that white people were, and it's oddly had this protective effect. So I'm not suggesting by any stretch that people of color aren't being impacted by this epidemic, but not in the same proportion. So that's why in the film that's what you see.

Jackie, the person that you're talking about is a woman named Wynne Doyle. And Wynne is, was from Marin County, California, very wealthy family. And she, to the best of our research and knowledge did not have an addiction problem previous to her third cesarean. Third child was born, she had a cesarean section. This was in 1997, right at kind of ground zero for what was going on in this epidemic. She was prescribed OxyContin, she became

addicted, and for 17 years battled this addiction. We're going to show you a clip.

(Video being played)

MS. PELTZ: I think that the one thing that I would say about the Wynne story, she obviously developed a severe opioid use disorder. She went to rehab facility, she did not get drugs like morphine which I'll let the experts speak to, but the important point about Wynne is to drive home the point you do not necessarily have to overdose from heroin, you can overdose taking these pills. And I think too often we think that that's just not a possibility.

MS. PELTZ: Yes. And Wynne did pass away.

MS. JUDD: Correct. She passed away, her kids found her. They went to wake her up and she didn't wake up, and her son took her foot and tried to shake it and it was cold.

MS. PELTZ: If we can for a moment take this from the consumer perspective, understanding how these drugs work in the brain, in the body. What do you think a patient should ask a doctor when prescribed an opioid? What would your questions be?

MS. HURD: I think my questions would be, and perhaps again coming from a science perspective, you know, how long should I take this, is this opioid -- I would say is it a full agonist or partial agonist, which is bad in terms of us scientists, meaning does the drug bind fully completely to all of my μ-opioid receptors in my brain or does it partially bind to that so that we know that a lot of the, you know, the full agonist have much more potent effects. How long does it last in the body, because as I said earlier when the fast action of these opioids make them more addictive, so if the drug, you know, goes in and out faster, those are things that can increase the addiction vulnerability.

You know, I will bring in a science part in terms of how do the drugs change the brain, because the acute pharmacology of the drug is very different from addiction. When we look in the brains of people who unfortunately died from opioid overdose you can see there are many fundamental

things different in their brains and to the point where the shape of their DNA, the confirmation of your DNA, the shape of their cells, their neurons are different. And we see that some of the shape in the way their DNA is structured even relate to how much of the drug and their history of heroin abuse, for example.

So when someone says, oh, you can stop, you know, if you want to, you know, the whole aspect of the, you know, the moral, their brains are changed fundamentally, it's very different. So it's -- I think that that's one of the things that people need to understand. We're not talking about someone that's, everybody wants to stop their addiction, their brains have changed so treatments have to be implemented that can help their brain. I don't know if we can say normalize ever but at least get back to as a level where they can get better-control their behavior.

MS. JUDD: Let's talk about prevention for a few moments. Vivek, I know when we talk about the reasons for addiction, something you talk about in addition to what Yasmin understands is emotional pain that will lead some people to this. And how understanding emotional pain possibly help come up with a strategy for prevention?

MR. MURTHY: You know, I'll tell you that when I began my tenure as surgeon general I began with a listening tour, so I visited small towns and big cities across the country and asked people what could I do to be helpful, what would you like? And what I heard in the stories of nearly every community I went to were stories of pain, not just physical pain but this deeper emotional pain, and I realized very quickly that we have an epidemic of chronic stress in our country that is in fact causing this deeper emotional pain. And here's the thing about emotional pain and physical pain, is that the pathways in our brain which allow us to interpret that, you know, those emotional pain or physical pain actually overlap. So you can actually experience physical -- emotional pain as physical pain.

How many of you have ever heard the expression, you know, when I got the bad news it was like a punch in my gut, right. And sometimes some of you have probably felt that too, it feels like somebody, you know, hits you when you get some really shocking or surprising news. There are -- there's an overlap here. And the reason it's so important for us to think about is because when we're -- if

we try to address pain, if I have a patient who's coming to see me and they are in pain, I need to not only look for a physical injury but I need to think about what else is happening in their life at an emotional level that may be contributing to that pain.

Now, one important caveat here. Many patients have had the somewhat scarring experience of having something wrong, going to the doctor and being told don't worry it's all in your head, right. We have to be careful about that because that is often said in a way that's somewhat dismissive or pejorative, like it's not real, it's just in your head. But what I'm telling you is that what's in your head is actually very real, and that it can actually influence your perception of pain. And if our, if we are simply increasing the amount of opioids people are getting in order to drive their pain down to zero and we're not looking at the non-physical drivers of their pain then we're missing the boat, we're not addressing the root cause.

You know, prevention, I'm so glad you -- just even saying that word is important because if we look at what we do as a country with addiction and with other illnesses we don't do prevention very well. And so as we think about addiction and how we want to address addiction we have to make prevention a priority. That not only means improving prescribing, it not only means making sure that doctors and nurse practitioners have the tools they need to treat pain safely and effectively, it also means working further upstream, looking at these emotional drivers of pain, asking ourselves the question what is driving stress in our elderly and middle-aged folks and even among our kids that in turn is leading them to experiment with alcohol and other drugs and to often relapse with their addiction.

MS. JUDD: Nora, when it comes to treatment what do you see as the most promising developments of late, if there are any?

MS. VOLKOW: Oh, no, there are, absolutely. And you know, I am -- I say this, we are lucky for opioids because we have three different classes of medications and we don't have any treatments for marijuana addiction, for cocaine addiction, for methamphetamine addiction, for inhalants. But for opioids we have Methadone,

Buprenorphine and Vivitrol, and these three classes of drugs, actually all of them interact with μ-opioid receptor but they interact in different ways. And every single study that has been done, and we funded multiple studies, all of them independently, have shown, number one, that when you treat these -- an individual with an opioid use disorder with any one of these medications you not only decrease the consumption of heroin or the opioid, you actually prevent overdoses, you prevent criminal behavior, you prevent them from actually recycling back into the prison system and you improve the outcomes on neonatal abstinence syndrome, and that's the syndrome of a baby that's born out of a mother that is consuming heroin. If you treat them with Buprenorphine their outcomes are much better.

So that treatment, every single study shows that the treatments are improved, the outcomes are significantly improved by the use of the medications. Now, what are the challenges, as was mentioned, despite the fact that there is strong evidence that they are effective they are not being used. And there are two things driving the lack of utilization, one of them is the stigma and the notion and the polarized -- polarization in the community of people saying you're just changing one drop for the other without a real understanding that these medications behave very differently from heroin in part because of what Yasmin was mentioning in terms of the rapidity at which they enter and leave the brain but also in part of on its potency, so that's one. But the other one is the lack of infrastructure.

We just don't have sufficient treatment programs in the United States right now to take care of so many people that are addicted to opioids, and as a result of that they are not being treated. And there's another structural barrier which is insurance program, and even Medicaid, which is actually implemented differently according to the states may not in any -- in some states provide coverage for these medications. And if they provide full coverage they limit it, for example, to 2 years. There's no evidence whatsoever that it justifies limiting it 2 years. So we have stigma, we have structural changes. And again, ultimately, that need to I think a problem in all of this is the healthcare system has always stand behind of not considering addiction part of the responsibility, of not seeing it as a disease that they

should be screening and treating. And I think that right now with the crisis they are being brought into how important is them for them to get engaged.

MS. JUDD: Yasmin, you have written about the potential use of marijuana as a partial answer to this, explain that to us.

MS. HURD: Okay. So an epidemic calls for a different way of thinking. You know, you can't -- you know, Einstein's classic, the definition of insanity is doing the same thing over and over and expecting a different outcome. And we are in an epidemic and still we're still having the same way in which we think about opioid addiction and how we treat it and we do need to come up with new ways for our prevention and treatment.

So Marijuana is, I hate the term now in a way medical marijuana because I think it has gotten confused, the marijuana plant is a very complex plant, so in addition to THC, which is the part of the plant that makes everybody have the rewarding aspects of it, there are many cannabinoids. And one of the cannabinoids is called cannabidiol, and that's the cannabinoid that, for example, has been used for treating epilepsy in epileptic kids.

And a number of first, basic research showed that cannabidiol actually decreased heroin-seeking behavior, it also even for alcohol use in animal models as well, and we've done pilot studies and we just finished another one, so we'll hopefully see the results of that. But we can potentially use other drugs that are non-opioid drugs where you wouldn't then have such diversion issues because cannabidiol does not have any rewarding effects. And so if even cannabidiol can decrease an opioid use disorder, that's something definitely we're trying. And looking at not only cannabidiol but other compounds that don't have an opioid component to them so that you wouldn't have to, the complication that Nora talked about in terms of how do you treat hundreds of thousands of people with opioids when that has to be regulated and the diversion potential of opioids.

So we are trying, we're bringing science to bear, we're really trying to come up with different ways and "medical marijuana," but when people say medical marijuana always ask them are you talking about THC or are you

talking about other cannabinoids. So we're thinking that, you know, for aspects of pain and aspects of opioid abuse that the cannabinoids have potential.

MS. JUDD: I'd like to talk about --

MR. MURTHY: Can I actually just add one fact to this?

MS. JUDD: Yeah.

MR. MURTHY: This is very important. I mean, what you just heard from Yasmin is right, but I also want to caution people against confusing what you just heard with the notion that going out and smoking marijuana relieves your pain.

MS. JUDD: Yeah.

MR. MURTHY: Okay. And this is actually very important because many people, you know, have had the experience of smoking marijuana and say that it helps their symptoms, whether it's nausea or pain. And that very well may be for some people.

But here's the problem, is if we don't -- the kind of studies that Yasmin is talking about, these are where you -- in carefully controlled clinical studies you study a very specific component of marijuana. And that's very different from taking the whole plant and actually -- and actually smoking marijuana because you're getting actually a whole plethora of chemicals and compounds there and you're getting it in a dose that's hard to measure, maybe inconsistent between 5 or 10 different people who smoke marijuana.

So when we come to marijuana being used for pain, for nausea, for any other medical symptom. My general feeling of this is we should let science drive our policymaking in practice.

MS. JUDD: Exactly, yeah.

MR. MURTHY: And that means that we need to invest more in studies. We have already invested a fair amount at NIH more than I think most people know in studies but certainly more investment in research, reducing the

barriers to doing that research is very important because there are lot of researchers who historically have had a hard time because of the way it's scheduled, and other administrative barriers. Some of those started to come down during the Obama Administration but we have more work to do.

And during the Obama Administration there was also a move to increase the amount of research-grade marijuana that was available for researchers to use for their study. Imagine you're trying to test a drug but each sample you're giving your research subject has a different amount of the drug in it, how consistent is the result going to be. Well, that was the problem that many people were facing doing research on marijuana, is there wasn't always a standard grade that everyone was using.

So we need more research on this, research should drive our decision-making, but we shouldn't allow that, we shouldn't use -- allow that to be confused with the notion that marijuana should -- that we have enough evidence to say that marijuana is useful for medicinal purposes and that it should be made available for that.

MS. HURD: And no -- I'm sorry, I was going to say no clinical -- no clinical application for treatment will ever have smoking, smoking is not ever going to be. And just being in Colorado, even the dispensaries you don't know what it says, you know, cannabidiol, what is in there. In fact people we've analyzed from different dispensers and they have very different amounts, so it's very important that it has the evidence base. Even though Nora and I recommend check out some dispensers later --

MS. JUDD: This is being televised and will be webcast later, you better be careful.

MS. HURD: -- for scientific purposes.

MS. JUDD: Perri quickly.

MS. PELTZ: I just wanted to add something on because you asked a really important question earlier, Jackie, but I want that photo op by the way. But the question was what is it that you can ask your doctor, and I want to make something really clear, opioids are really good and effective medications for short-term acute pain,

they are far less effective, and I'll let the doctors speak to this, when it comes to long-term chronic pain. So when you get a prescription which may be very well be the right thing to be prescribed, and it says to, you know, that's a month's supply, don't necessarily take it for a month, take it for as short a time period that you can. I -- very quickly, my son, it's a personal story, had a really bad case of strep throat, we were in the emergency room. The doctor -- I had just started working on this film, it was a year-and-a-half ago -- the doctor prescribed him percocets.

And I said to the -- I said to the doctor, you know, I was working on this film, and he was -- so I want to make sure that if your son has pain that he'll be okay. And I said all right then why not -- and I think it's gotten much better in the last year-and-a-half -- why not give him a prescription for three or four or five pills. And he said if you don't like the way I've treated your son's pain you can give me a bad review and that can impact his license, and that is correct --

MS. VOLKOW: And that has changed. That has changed. That has changed. And the other thing that has changed is the CDC guidelines very clearly stipulated that a minimal amount of opioid should be given for the management of acute pain. And so -- and that has been enforcing. And in fact one of the things that you can see is a decrease in the total number of prescriptions that we're giving in the United States. So in my view it's very slow, how we're going down, but at least it's in the right direction. I think it is, the message is to when a doctor gives you a medication you should always ask regardless of whether it's opioid or something, what are the side effects of these medications and why should I expect to get, and how long, what is -- how long do I have to take it. I think that those are very important questions that you as a patient should be, ask your doctor, be proactive, don't you just the passive.

MS. JUDD: Perri raises a good point though to emphasize that opioids do have a place in a doctor's toolkit.

Vivek, do you have any concern that the pendulum may swing too far in the other direction and doctors will be reluctant to prescribe that when a patient needs it in a safe way that they won't be prescribing when it's truly

needed. So I am concerned about the pendulum swinging to the other extreme where people who actually would benefit from opioids are unable to get them. And we've already seen that start to happen. We have emergency rooms that are putting signs outside saying we don't dispense opioids here, we have doctors' offices who are increasingly saying, you know what, it's just too complicated dealing with these opioids thing, we're just not going to prescribe them at all. So that is already happening to some extent.

And it's understandably worrying some people who recognize that opioids had been helpful for them or their family members and they want to make sure that we don't swing to the other extreme. So that's a real thing. But the way that we're going to get to a balance most quickly is if both patients and healthcare practitioners are both informed and are educating and are working together on this. There's an analogue here to antibiotics. You know, for years we've been talking about the problem we have in the United States and around the world with the overuse of antibiotics. And particularly with in pediatrics when young kids get ear infections and they go to the doctor it often used to be standard affair that every ear infection you would basically get antibiotics until we realize that actually much of the time you don't need antibiotics, and that was helping to fuel the over-prescription. What helped to shift us toward safer prescribing, well, it was a combination of educating doctors but also educating patients so that people would go to their doctor and if your doctor wasn't as fully informed and try to give them an antibiotic they could say, wait, can we pause for a moment and see if my child really needs these antibiotics. And sometimes the answer is, yes, actually they really do, but at least that conversation took place.

Similarly with opioids we need to do the same thing, if you're going to your doctor and getting a 30-day supply of opioids for acute pain, there's something wrong. Okay, so you should pause at that moment and ask the question do I really need this much because what we were recommending and what the CDC was also recommending as well in their guidelines is to start low and to go slow when it comes to opioids. For acute pain a prescription that covers 3 days is usually sufficient. We're used to just prescribing it for a longer period of time, but 3 days is actually quite a reasonable initial prescription. And you should then try to get off the opioids and get on to other

things, or if you need more opioids coming back to check in with your doctor to be examined so your doctor can look for warning signs or other sources of concern is incredibly important.

MS. VOLKOW: Can I make a point here because I think this is also very important in just reiterating this issue. The problem of the use of opioids for longer term pain is that you rapid become tolerant to the analgesic effects of the opioid. And this means that to achieve the same level of analgesia you will require higher and higher and higher doses of the opioid which increases the risk of overdose an addiction. But the other side about opioids when you give them repeatedly is that they make you more sensitive to pain, and this is known in the medical world as hyperalgesia. And it makes it very difficult to handle a patient with chronic pain that still complains of the pain that has opioids because physicians may actually increase the dose and that exacerbates rather that improve the pain. And in many instances when they withdraw the opioid the pain actually improves. So opioids has that ability also of making your body much more sensitive to pain sensation. And again, that's another one of the reasons why opioids are not good medications for chronic management of pain.

MS. JUDD: Before we open it up to questions from all of you I wanted to ask two more questions. One, the news of the day, the Senate released its health care plan yesterday. There were a couple of senators, including Rob Portman from Ohio who very much was advocating for a discrete amount of money to be used for opioid treatment because of the Medicaid cutbacks, he felt that would be necessary, ended up in the draft with $2 billion. What does that get you, Nora?

MS. VOLKOW: Well, I think that I actually -- $2 billion, and I -- and again I'm always very grateful for the notion of bringing money that can improve treatment. My concern is first of all is that sufficient, number one, and, two, how do you deploy those resources. And number three, what is treatment. One of my concerns in the treatment of substance use disorders including opioid use disorders is that we have no standards for quality of treatment. So anyone can go -- and I actually and is pointed out here in sort of in a way that he says because it's more expensive it's going to be better, is not

necessarily. And again, one of the things that we're trying to engage, changes -- that structural changes that are needed is not just to put money but to actually put money on treatments for which there is evidence, and to create a mechanism that you can fit back in terms of the outcome.

So if you're going to have heart surgery you can look at what are the records of the hospital or the surgeons you are going on and make that selection on the basis of that. In the treatment of opioid use disorders there's nothing like that. And patients don't know, or the family, where to go to. And they sometimes feel because it's more expensive it's going to be better. So we need to, in addition to putting resources to actually create an infrastructure that will be demanding quality of care and will make that reimbursement contingent on those measures. And I also think that in these, as we deploy these resources we need to bring forward the health care system to be actively participant, our primary care physicians, the emergency departments, neonatologists, pain physicians. Pain physicians are not trying to deal with a substance use disorder of their patients. So we need to engage them and make them able to participate in screening and treating.

MS. JUDD: And -- yes, go ahead quickly.

MR. MURTHY: This is an important point here. If you take coverage away from 20 million-plus people, including millions of people who are struggling with addiction and you try to put a few billion dollars into a fund for opioid treatment, that is absolutely insufficient, absolutely insufficient.

(Applause)

MR. MURTHY: It's like me taking your car away, giving you a bike and telling you to get to the airport in the same amount of time because, hey, you have a mode of transportation. It doesn't work like that. If you've spent time on the ground with people who are struggling with addiction and follow the course of their treatment, what you recognize is that to treat somebody who is struggling with addiction, to get them to a place where they can live fulfilling lives, where they can contribute to society, can contribute to their family and they can be content you need to treat their entire health.

People with addiction are often struggling also with anxiety, with depression, with other chronic illnesses like diabetes and heart disease. If you take away coverage from them and you remove their ability to get care for all those other conditions and while you might be providing a little bit of extra fund to try to cover some of their addiction care, their inability to care for their other conditions is ultimately going to impact their ability to ultimately deal with their struggles with addiction.

So it's important that we realize that this is not a simple math problem where you can, you know, move things around, you know, and take a little money out of here put a little bit of money out there. Coverage is incredibly important for the quality of life and for the quality of life that we experience. And so this is important for us because this should not be a partisan issue. You know, I -- I, you know, practice medicine in Massachusetts which took steps under a Republican governor, Governor Romney, to make health care coverage universal. And I practiced both before and after that law was implemented and I saw firsthand that coverage does in fact save people's lives. The young woman I -- the woman I saw, I remember, is a resident who came in with advanced breast cancer and it was advanced in the sense that she had noticed a lump a year ago but hadn't sought attention for it because she didn't have coverage, it got bigger and bigger until it finally broke through her skin and became infected. And when we saw her in them urgency room that night we had this horrible sinking feeling that she had likely advanced breast cancer and that the treatment options that would have been available 6 months ago or 9 months ago were no longer available.

I saw fewer patients like that after universal health care was implemented in Massachusetts. This is why coverage is so important. And if we do not continue to advance the coverage of people in America, we will move backward when it comes to addressing addiction, that's how fundamental coverage is.

(Applause)

MS. JUDD: I would like to turn the conversation over to all of you now. I do have something of a plant in the audience. There is a gentleman in the front row who is

a physician and I've asked him if it's okay if he will stand and wait for a mic to come to you. But I thought it would be useful to hear from a physician who prescribes I presume opioids and what challenges you face and what's standard you use. And thank you so much.

MR. WALES: Well, we'll see how it goes. But -- my name is Bob Wales (phonetic) and I'm a pain medicine physician, so I'm at the tip of the sword for this whole issue. And I first want to compliment our panel on a great presentation.

(Applause)

MR. WALES: They highlighted many of the issues that I have to address every day. So I'm going to -- just I'm going to make it short but I'm going to make a couple different comments and then kind of pose a question for our panel.

The first comment I'd like to make is to reinforce the barriers to good pain treatment. Most people don't realize but most primary care doctors are the main physicians who take care of pain, they see the vast majority. As a pain specialist I see usually the refractory cases, the ones that don't do well. But there are so many tools that we have available in our armamentarium, there are so many things and many that were brought up, the use of mental health is greatly underutilized and fantastic for chronic pain, the use of rehabilitation services, including physical therapy, occupational therapy and other modalities are really grossly underused.

There's other even procedural things that fall more into my specialty. We do different procedures from injections. We do different implants we do nerve stimulator implants, it can help many types of chronic pain, we do pump implants that deliver non-opioid medications to the spine that can help with severe chronic pain, so there's other choices out there. But the barriers to those treatments are mostly insurance coverage. So we want to, you know, use other non-narcotic techniques but so frequently they're not covered by the insurance and it's just not available. So that's a real big problem that I want to mention.

The other issue is the whole addiction issue. And in my practice now in the last few years we see the problem cases that come from other physicians that are patients on high-dose narcotics and I have to admit it's one of the most challenging things I see in my practice on a day-to-day basis for a number of reasons. Some of those reasons we're really all familiar with and were highlighted in this talk. But a good analogy is alcoholism, that's an addiction also that crosses all aspects of this society, it's not a low-income, it's not a ethnic, it's all aspects of society, and so is addiction.

The greatest thing we know in alcoholism in terms of getting people to treatment also is true for pain medicine and opioids, and that is denial. It's so difficult to get through denial. And it's time-consuming to get people to accept their problem so they will be, they'll be willing to see an addiction specialist.

MS. JUDD: Thank you for that frontline perspective, I really appreciate it. Now you've earned your question.

MR. WALES: Okay. The question is, even I live in a suburban area in San Diego which is, you know, has a good community network of physicians, we still don't have access to addiction services. And I know it's not just MAT, not medically assisted treatment that's the answer, how do we policy wise, which I'm so interested in, is policy wise get health care policy in such a way that it reimburses mental health providers or whatever it takes to get addiction services available to the rank and file physician.

MS. VOLKOW: Yeah. And I think one of the issues is now the big advance in the whole feel was the passage of the parity law by which it is -- you basically have to provide treatment for substance use disorder and other mental illness like you would do for any other disease. But despite the fact that the parity law passed it has not been implemented. And one of the issues is patients don't really know what their rights are. And so they are the ones that have to complain if they are not given the proper treatment. And as a result of that there are not more lawsuits than one would have expected just from the fact that the insurance are getting away with murder by not providing the appropriate treatment, and there are some.

So hopefully this will start to change.

But when I was speaking about the need of creating structural changes I was exactly referring to that, that we need to create, move the incentives in such a way that the insurance will pay for the comprehensive pain treatments that are necessary for those patients as well as a comprehensive treatment for the opioid use disorder that are needed for these patients to recover.

MS. JUDD: Perri, you're shaking your head yes.

MS. PELTZ: I just want to add one thing because it's -- all doctors have touched on it and just to drive it home because everybody here, the numbers will bear out, will have a loved one, a friend, someone they know who will become addicted, make sure that when you go to get treatment for a loved one for an opioid use disorder that you find out if they are able to provide medically assist -- medication assisted treatment as Nora pointed, Buprenorphine, Vivitrol, Methadone, it makes an enormous difference. And unfortunately the doctors can explain, they are less able by regulation to prescribe these drugs or Buprenorphine in specific than they are to be able to write a prescription for OxyContin. And maybe you can touch --

MS. VOLKOW: No, that's absolutely correct. And I think that you're touching on something that is very, very relevant. I was speaking about the stigma and then the other one, the lack of coverage. And these two collide in a way that many patients that would be benefit would actually not be given the opportunity of having a much greater chance of recovery.

Now, addiction, as Yasmin was saying, is that chronic disease, that changes in the brain perceives months, sometimes years after the person has stopped taking it. We don't know how long it takes to the brain to recover. But we do know that the best outcomes are given when you provide a chronic continuous model of care like you do for other chronic diseases, and that may require that the best outcomes that we're getting are in individuals that have been maintaining some level of treatment for 5 years. And so the notion that you go into a treatment program for 3 months and you're going to be cure is basically unrealistic and it creates an expectation

that has led to very negative reactions towards treatment.

(Applause)

MS. HURD: But -- well, one --

MS. JUDD: -- yeah, quickly.

MS. HURD: -- one aspect of that on the brain level is that many people said you go to these expensive treatment programs and they come back home and they relapse. People in prison they come back home they relapse. The brain -- addiction is a disorder of memory, so it taps into all our memory circuits. You can treat everyone and that could be perfect in the inpatient setting or in these treatment programs, it doesn't matter how much they cost, when they go back home the environmental triggers to cues are enough to stimulate those parts of the brain that make people crave again. So treatments have to really be individualized for their real-life situations.

So treating people in a lot of these programs are not sufficient to account for how the brain responds to being back home. So really psychosocial treatments, pharmacotherapies at home is really the best way to if you think about neuroscience and what's happening to the brain.

MS. PELTZ: They also -- they come out of these facilities though and they're -- you know, they are no opioids in their system anymore and they go back to taking the same amount they did before.

MS. HURD: Yes.

MS. JUDD: And that's what happened to Wynne, right --

MS. PELTZ: It happened to actually almost everybody in the film.

MS. JUDD: Question in the back.

MS. GUPTA: So, hi. Thank you so much for this wonderful panel. My name is Dr. Anita Gupta. I'm actually also a pain specialist, anesthesiologist, I have a doctorate in pharmacy, I'm an FDA advisor that sits on some of the opioid approvals in this country right now and I'm

also a Princeton University Woodrow Wilson fellow doing policy work on health policy and I am here to innovate and learn and find solutions on the opioid epidemic here at the Aspen Ideas Festival on behalf of the American Osteopathic Association.

You know one of the issues I've seen in patient care with the opioids is that, you know, I help patients get off of opioids and you know when I've seen some of the CDC guidelines that you wonderful people have put together, you know, one of the most granular issues, you know, when I sit with the patient face to face, you know, what they understand and what I understand is very different, that conversation that's happening with patients in that room quietly is very different what we're having here, those personal face-to-face conversations I'm having, intimate, that stigma, all the difficult conversations is really not what's happening in media, not what's happening on Capitol Hill, it's not what's happening here today, and that's the reality, the discussions of how many tablets you've had, the conversations you're having at home, the overdose issues. It's not -- that's not what's happening in that quiet issues in the doctor's office, that's not what's happening. And those are difficult, difficult questions, those are very difficult questions, that granularity that's happening in the doctor's office is very, very serious.

MS. JUDD: You have a question --

MS. GUPTA: And the question I have for you is that the checkboxes, the checklists, the very things that we're talking about today on Capitol Hill is not solving the issue, that preservation of conversation of doctor-patient relationships, the time that is needed to help these patients to get off of opioids is not preserved. To all of you, how are we going to get that time back? How is policy going to preserve that doctor-patient relationship to address the opioid epidemic? And I want to know, when I study policy at Princeton University, how do I go to Capitol Hill, congressional members to address and preserve doctor-patient time.

MS. JUDD: Thank you very much. We're running short of time so I'm not going to let each of you answer that.

MS. HURD: No. Vivek can.

MS. JUDD: Vivek can answer it.

MR. MURTHY: Sure.

(Laughter)

MR. MURTHY: So thank you for the question. It's a complicated question. And -- but I'll say a couple of quick things that we have to do. The challenge, time that doctors and patients have or don't have together is not just limited to opioids and addiction, this is a problem that many doctors and patients are facing with chronic illnesses across the board. I think one thing we have to change is really how we pay for medical care. We've had a fee-for-service pay-for-quantity type of system over time which has jammed and more volume, you know, into the schedules of doctors and allowed less and less time for patients.

We've also not valued the quality of time that's spent with patients. I remember as a kid growing up in my dad's office seeing that all the time that he would spend trying to counsel a patient so that they would be able to lose weight and not have to take medicines for their diabetes, all of that time was never really reimbursed for. But if he went and did a procedure on them, boom, you know, he would get some money. Unfortunately, he was an ethical doctor. But we shouldn't have a conflict between the incentives of the system and the ethics of doctors and patients, and that conflict is right -- is there now because of the payment system that we have.

But to your point also about these intimate conversations. Look, we cannot rely on the media to have these intimate conversations because by definition they're intimate conversations, they need to take place between people, you know, and those they trust. And that could be a doctor. But it doesn't just have to be a doctor, it could be another member of the health care team. And I want to say to all of you that it could be all of you as well, family members and friends.

One of the biggest obstacles that we face to addressing addiction in America is this stigma and the misinformation that's out there. The stigma which tells people this is a disease of choice and it's their fault

which prevents them from coming forward and getting treatment, which prevents communities from even wanting to have treatment centers in their neighborhoods. The way to address that is not through policy or programs, but the way to change hearts and minds is through conversation with friends, with family members. So all of you, when you go back to your day-to-day lives outside of this idyllic oasis of Aspen and as you think about what you can do to help address addiction in America I want you to remember one of the most powerful things that you can do is to help change how people around you think about this disease, help them see it as a chronic illness. If there are people that you know that are suffering and struggling with addiction, being there for them to provide support is one of the most essential parts of successful therapy.

MS. JUDD: Perri, in your documentary you captured incredibly intimate moments, I was amazed at how the people you were featuring forgot the camera was there. And I'm thinking in particular about the mother who has had two daughters, one of whom had already died of an overdose and she was trying to keep her second daughter alive and she also had become addicted. The mother tried the best she could.

MS. PELTZ: Yeah.

MS. JUDD: So in your reporting, what limitations and what successes did you see in those intimate conversations and support from family?

MS. PELTZ: You know, I have to say documentaries don't get made without incredible people who are willing to share at their most painful moments, and certainly a documentary on addiction and opioid addiction is one of those moments. And Jackie is referring to a mom who has lost one daughter and at the end of filming the second daughter was in recovery and doing really well, unfortunately she just relapsed and it's it not looking good. They are incredible and they do it because they realize how bad things are and how bad things can get, and they just want to communicate to people what it looks like and what people can do. And I know that for, Kathy, this is the mom, and I spoke to her yesterday when she told me about Stephanie relapsing, and is telling her about being here, she said tell everybody because everybody has bottles of opioids or I did, I had 12 bottles, right, been to the

dentist, I'd been to that doctor and left over, and you think, well, you never know when you'll need it, get rid of them. Addicts go to your medicine chest, they go to open houses, real estate open houses, they will go to your medicine chest to take these medications, get rid of them. So I think that's just one thing I wanted to share because she had specifically talked about that.

MS. GUPTA: Thank you. Thank you.

MS. JUDD: Is there a question on this side, yes.

MARRISON: Hi, my name is Marrison (phonetic), I'm a scholar. And I'm wondering what is being done to move the needle for mental health services, because I feel like if we're in a perfect world where everyone has health care, if we're required to see or get a physical once a year, see a doctor, if we're required to see the dentist twice a year, every six months I'm not sure why it's not required to see a mental health provider every quarterly or like, or four times a year, right, because I just think it makes so much sense, and it would significantly reduce the amount of instances where we see people that are becoming addicted to drugs and not by any means to take away from people who are experiencing chronic pain. But I wonder, I'm curious like is there anything being done or what can be done to move the needle to remove the stigma on mental health.

(Applause)

MS. JUDD: Nora.

MS. VOLKOW: Great question. Great question, yeah. I wish I could answer and tell you all these tough things that are being gone. Unfortunately that is not the case. What is emerging right now is one of the most challenging situation for in terms of morbidity and mortality in our country is related to diseases that are affected by behavioral lifestyles or mental illness. And there was a paper by Deaton who's the Nobel Prize economics winner last year in which he actually show that the life expectancy for Americans in the United States is decreasing whereas it is increasing in the rest of the developed countries. So even though everybody is increasing their lifespan, our is going down and was like what's accounting for that decrease in lifespan, overdoses, suicide, and we

haven't spoken about, suicides in the United States is going up. And the other one is liver diseases from cirrhosis driven by alcoholism. Those are the three causes that are so prevalent that they are having a population effect in terms of the life expectancy of the Americans. So if you have numbers like that and we don't get it in the health care system about the importance of creating a structure that can do prevention so we are not there, we won't be -- it will just go up exacerbated.

MS. JUDD: How does behavioral therapy affect the brain?

MS. HURD: Behavioral therapy absolutely changes the brain. I mean, there have been imaging, neuroimaging studies where you can see behavioral therapy that works and you can see behaviorally the reason why it works behaviorally is that it changes the brain, it's a brain disorder. So not everything has to be pharmacotherapy. Even though I'm a neuroscientist and we're trying to develop pharmacotherapies, behavioral therapies do work. And even if we come up with a magic pill that can cure someone's opioid addiction tomorrow, the person has had many issues that they will -- still require behavioral interventions, the family relationships, all the things that have happened to them. So that's one thing.

I don't think that the therapies should be separated. And I think sometimes people think that there is this fight between --

MS. JUDD: Either-or?

MS. HURD: Either-or. And I don't understand that. And as a neuroscientist, as I said, behavioral therapies can change a lot of the things that we see. Even in our animal models we can use behavior to change, again, how the cells communicate with each other, how the shapes of the cells, how you're, you know, normalize the -- all the alterations that drugs have induced in your brain, so they do work.

MS. JUDD: A question on this side, yes.

SPEAKER: (Inaudible).

MS. JUDD: Wait a minute, where are you? Can you

wait for the mic? Thanks.

SPEAKER: Auto-injectors to reverse the process of overdose where they start breathing, are they becoming readily available in the community to save people's lives?

MS. VOLKOW: No, this is an area of research where we're actually trying to encourage scientists to develop devices that can monitor and record and predict when someone is going to go into an overdose and when that happens to actually how to inject Naloxone. Currently there is not such a device currently available. Researchers are trying to identify the signature that predicts which sufficient accuracy because you don't want to auto-inject someone, they'll go into withdrawal. But this is a space that we're working on very important because what we see, though we don't know exactly the numbers but it's like in the story that is presented in This Drug Can Kill You when the kids go in the morning to wake up the mother the mother is dead, that the patient's overdose at night when no one is observing them. So the ability of having a monitoring system that can protect that individual when no one is around is likely to improve the outcomes in these patients that are overdosing.

So we are working on it. There are scientists and industry that's trying to bring them forward. So I would hope that we may have something in the next few years but currently nothing --

MS. JUDD: Nora, you touched on something I meant to ask, and that is the announcement that you and Francis Collins recently made about trying to accelerate the development of new drugs and get them through the pipeline faster, drugs that are for pain but not addictive. Where does that stand?

MS. VOLKOW: Yes. And also devices.

MS. JUDD: And devices.

MS. VOLKOW: We are trying to incentivize and energize the industry to come up with products that can help us address the opioid epidemic from the perspective of alternative treatments for pain and that could include not just medications but stimulation devices as well as alternative treatments for opioid use disorders as well as

the treatments for preventing overdoses like the one that we are discussing.

So what we want to actually bring forward so we've got -- we're going to have the third meeting with pharma and academia and come up with priority products that are -- then we're going to actually invest from both sides with the idea, and Francis said this very boldly, I'd like us to be able to accelerate the rate of bringing a medication to that clinic by half because currently it takes 10 or 12 years. I mean, so by that it's already too late. So what is it that we can do to bring up solutions faster? And there are some of them that are low-hanging fruit that we're maybe able to turn in 1 or 2 years, then there is intermediates and then the long range.

MS. JUDD: Okay. Thank you. Question this side, yes.

NADINE: Just wanted to speak to the issue of prevention. I know that more and more as we look at life course health we understand that the early life antecedents of adult health care issues, we're understanding more and more about them. I know that we know that exposure to adversity in childhood not only increases the risk of someone developing dependence to opioids and other substance of dependence because of the impact on the reward center of the brain and the change to the structure of the receptors in the brain, but in addition we also know that early childhood adversity is also associated with requiring higher and higher doses of pain medications to achieve the same level of analgesia. Even we're seeing that now inpatient.

And so my question and, you know, Vivek, I'm -- Dr. Murthy I'm looking at you. Understanding what is the opportunity if we understand childhood adversity as a major risk factor for opioid dependence and earlier initiation, et cetera, what type of opportunity does that prevent and what would prevention look like in that setting?

MR. MURTHY: Well, that's such a good question, Nadine (phonetic). And for those of you who don't know Nadine, her work around adverse childhood experiences has been really extraordinary, and I would encourage you to check it out.

But what you bring up is a really good point, and it comes to a point we touched on in the very beginning which is about (inaudible) question of why don't we focus more on prevention as a country. And prevention is not just what you do but it's when you do it. And what we see more and more is that if you intervene early in childhood and provide kids with safe and protected environments, if you equip them with tools for social and emotional learning, if you enable them to deal with stress and adversity by equipping them with the right practices and tools to which to do so, you can not only dramatically reduce their risk of substance use and addiction, but you can reduce their risk of engagement in violence either as a victim or as a perpetrator, you can improve their health outcomes on a whole range of scores, you can improve their performance in school and their graduation rates, you can reduce rates of teen pregnancy.

You would simple and -- not always simple but with focused interventions in the early part of childhood you can affect a whole host of outcomes that we deeply care about. And so when I think about legislation that Congress is considering and has been considering over the last several years to address our addiction crisis, I -- the question I often ask myself is where is the money for prevention, where is their priority for early-stage interventions.

We as a country have not really done a good job focusing on prevention. We find it much more exciting to intervene when the crisis has already occurred and to showcase the new medicine or technology that we have to treat acute illness. And that's important, don't get me wrong, because we've invested so much there we have some of the greatest treatment modalities in the world, and that's something that we should be proud of.

But there is nobody I met in America during all my travels as surgeon general who said, you know, I'd rather get a substance use disorder and treated than prevent it in the first place, nobody said that. Still waiting --

MS. JUDD: Spotlight Health started last night with a description of ten big brave ideas, so I want to end this session with four big brave ideas. I'm going to give you each a magic wand and I'm going to give you each only

thirty seconds to give me your big brave idea to change the course of the epidemic. It could be a small granular idea that's in its own way big or it could be a very top line idea, who wants to go first.

MS. PELTZ: I'll go first -- I'll go first.

MS. JUDD: Perri.

MS. PELTZ: No one wakes up one day and says I want to be a heroin addict, it's not how it starts, don't be fooled into thinking that that's how it starts. There is -- there are cures out there, make them available to people, we've got to start realizing this is an epidemic of addiction and not bad people abusing drugs, no one who I met along the way was having a good time doing these drugs.

MS. VOLKOW: Okay, mine is -- I mean it's an idea but it's not a sexy idea but the reality is that here we have a disease for which we know the cause, and we know how to solve it, if we can actually prevent people from taking drugs we can actually prevent the overdose, it's not like Alzheimer's where we don't know where to start at this point. Here if we implement what we already knows that work we could make a dramatic effect in the epidemic with what we currently have, and that will require among other things that we train primary care physicians, specialty physicians in proper management of pain and in the proper screening and treatment of substance use disorders.

MS. JUDD: Use what we know.

MS. HURD: I think, you know, prevention is a huge aspect, but if I think just a magic wand I would want to go into the fact that we don't treat this as an epidemic like other epidemics and, yes, it's not like the Zika virus or a lot of the viral infections. But if we bring the same type of mentality that this is an epidemic, Let's get the best and brightest in the room, let's get to all the resources and say within a, give ourselves a timeframe and we said in 1 year we're going to do this.

The money that addiction costs our society, the country does not give back in the same amount in prevention or treatment even though certain treatments do exist, but to have them implement it in an epidemic manner we need to treat this like an epidemic like every other epidemic. We

do not. We are able to come up with how to get -- figured out what's happening to Zika in 6 months, we haven't done the same with something that kills many more people. So I think that kind of thing for me.

MS. JUDD: You get the final word.

MR. MURTHY: Well, my big hope would be to radically change how we conceive of and address pain because if we are able to see that pain is both a physical and emotional phenomenon and if we are able to address pain not solely with medicines but actually with physical activity, which is incredibly helpful, with behavioral therapy and with a range of other modalities that are safer than opioids then I think we could transform this epidemic in a big way.

MS. JUDD: Good thought.

(Applause)

MS. JUDD: Thank you all for being a great audience, and I want to really thank each of you. It was such a rich conversation about an important subject. Our leader is here. Walter, do you want to say something?

MR. ISAACSON: No.

MS. JUDD: No, no. Okay, you're all dismissed. Thank you all very much.

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