Working with Individuals who use Cocaine and Methamphetamine: Reordering Priorities

Key "Take-Aways":

1. More people are dying of overdose on stimulants, second only to fentanyl.
2. Meth use causes severe physical and psychiatric consequences, providing an opportunity that primary care providers can address.
3. Retention in care and reducing harmful impacts of stimulant use are critical.

Presentation Transcript:

Hi, I'm Rick Rawson. I'm a psychiatry professor at UCLA and I'm going to be providing you with an overview of some of the issues regarding **stimulant use in primary care settings**.

In this lecture, I'm going to cover the following topics:

- Basic information about why we're concerned about stimulants in 2022.
- The rates of overdose death associated with stimulants combined with fentanyl and by themselves.
- The significant medical and psychiatric complications.
- Retaining people in healthcare services to try to help reduce the harmful impacts of stimulant use.

Overview of the Overdose Crisis:

This is an overview of the overdose crisis over the past 22 years in the United States. It shows that we started in the early two-thousands with an increase in overdose deaths related to prescription opioids (01:15). That's the green line on the graph, and as you can see, up through 2010, prescription opioids were the primary driver of the overdose crisis. In about 2010, there was a leveling off in overdose deaths related to prescription opioids, but we started to see an increase in heroin overdoses that accompanied the reduction in prescription opioids.

That's the yellow line, which shows the increase in heroin overdose deaths. In about 2015, fentanyl showed up on the scene and we started to see a massive increase in overdose deaths related to fentanyl and to stimulants, cocaine, and methamphetamine, which also started to escalate around 2014 and 2015. And, as you can see, over the last five years, heroin and prescription opioid overdose-related deaths have leveled off or decreased while deaths associated with fentanyl and stimulants have continued to increase. This shows that not all groups have been equally affected by these overdose death rates.

Native Americans consistently have been the group with the highest rate of overdose deaths related to all these drugs (02:48). Recently, we've seen the Black population show a dramatic increase really in the last four to five years. The increases among Black Americans have been unprecedented in terms of the rate of increase. We still see a substantial number of overdose deaths among Whites, somewhat less among Hispanics and Asian Pacific Islanders. But, as you can see in the last couple of years, the increase has been true for all groups.

In California, the contribution of stimulants and methamphetamine has started to predominate as the major stimulant drug that is involved with overdose deaths (03:37). Here you can see starting in 2017, and

2018, methamphetamine use has always been a higher contributor to overdose deaths than cocaine, the blue line, as opposed to the green line. But, in the last two years, this disparity has jumped as methamphetamine has become far more available and much cheaper. It has taken over the stimulant market in California and it is now the stimulant most responsible for overdose deaths in California.

This gives you the last year's data from the United States (04:17). This is the last year's drug overdose data. As you can see if you look at the bottom line, the numbers in red, the total drug overdose deaths have increased year to year. From November 2020 until November 2021 there was a 15% increase in deaths of all categories. Heroin deaths went down by 30%. Some categories stayed about the same. However, fentanyl-related overdose deaths have gone up to 24.4%, cocaine to 19.8% and the real major increase has been in methamphetamine-related overdose deaths. So, the point of this series we're doing is to draw attention to the fact that cocaine and methamphetamine continue to provide a major public health concern. And, our knowledge to be able to treat people using cocaine and methamphetamine, the need for that [treatment] information has increased dramatically in recent years.

One of the issues, as I mentioned, is that methamphetamine is very available in California. It's very available across the country, but in California in particular. The major laboratories to produce methamphetamine in Mexico are on the west coast of Mexico. And, the major importing method now is shipping container ships into the Long Beach, San Francisco, and Seattle ports. These drugs are not coming across the border with immigrants. They're coming in in a much more industrial manner, so the supplies are much greater, which has made the availability much greater, and the price has been reduced. The other factor is that the formulas being used by the cartels now are much more effective in producing very high purity and very high potency of methamphetamine (06:32).

When I was seeing patients back 20 years ago, the average purity of methamphetamine was about 50%, or less than 50%. (06:44). Now, it's almost a hundred percent. The formulas for manufacturing methamphetamine now use a variety of different precursor chemicals so the cartels are no longer restricted to using one set of chemicals. They can now make methamphetamine with a variety of different formulas. That has allowed them to keep the availability up, to make sure that no matter what kind of shortage there is in precursor chemicals, they still have chemicals available to produce lots of methamphetamines. And, that's one of the reasons why it's so available in the US today.

Consequences of Stimulant Use:

We know that when methamphetamine is used, it produces dramatic effects on the brain (07:32). A lot of the brain imaging research that was done in drug addiction starting in the late 1990s and early 2000s focused on methamphetamine because, at that time, we had a major problem with methamphetamine, particularly in the Western United States. So, we have lots of data on how methamphetamine changes the brain. Going along with that, we have greater recognition that methamphetamine produces significant neurologic effects, including stroke and seizures. Stroke is one of the three leading causes of death related to methamphetamine.

Psychiatric comorbidity in this population is very severe. In many of the large city populations where we have populations with high rates of mental illness, methamphetamine is mixed in with that whole population and adds to the challenges of working with that group.

Cardiovascular problems are the second leading cause of death namely, heart attack and other cardiac diseases associated with methamphetamine use. Treating these patients for high blood pressure and other cardiovascular issues is a real priority for working with this group.

Pulmonary effects also are a concern; this is particularly true for populations where methamphetamine is *smoked*, which is a decreasing root-of-administration. Recently, injection has become the predominant root-of-administration for methamphetamine in the United States, including California.

This article was written several years ago by colleague Martin Paulus at the University of California at San Diego, and I recommend it highly as a good overview of the neurobiology and clinical presentation and some of the treatment issues for people with methamphetamine use disorder (09:45). Dr. Paulus does a great review of the effects of methamphetamine on the brain and what some of the consequences of those brain changes are in the behavior and functioning of people who use methamphetamine. It's a great resource.

When treating this population, many people with opioid use disorder in primary care in the last 10 or 15 years have done treatment with people who have used buprenorphine (now a major benefit in primary care). We can use to buprenorphine treat people for opioid use disorder. We need to become aware that the issues with people with stimulant use disorder are quite different, and that we don't have any medications currently approved by the FDA.

The Clinical Challenges:

The first one is overdose death (10:47). When I used to give talks 15 or 20 years ago about methamphetamine, I never talked about it; we did not have a huge overdose death problem associated with methamphetamine until the last several years. As you saw in those curves, the rate of death associated with methamphetamine spiked dramatically, both because of the greater lethality of the currently available methamphetamine and the addition of fentanyl into the supply.

The next two items are the limited understanding of stimulant addiction and ambivalence about the need to stop using. Those are issues that we see with people who use stimulants. They do not recognize they have a problem. They do not have the same compelling withdrawal symptoms that push people with opioid use disorder into treatment. Many people who use stimulants can stop and start on their own, and they have the perception that they do not have an addiction problem. And, if they don't have an addiction problem, they don't see any reason to stop using or reduce their use. So, there's real ambivalence. Getting people into treatment is a substantial challenge for this population.

As Dr. Paulus's article points out, the effects of methamphetamine on the brain, certainly the prefrontal cortex, affect people's impulsivity and poor judgment. We see substantial cognitive impairment and poor

memory in people who have chronically been using methamphetamine. Anhedonia is a very significant issue in the early weeks of methamphetamine recovery. People just do not feel good. Life does not have much pleasure, and this is undoubtedly related to the dopamine effects produced by methamphetamine on the brain. There are numerous medical, psychiatric, and dental concerns. Their sexual behavior is disordered. Often during their use, they have a great deal of sexual behavior. When they stop using, they often have trouble functioning sexually. That becomes a big concern to them.

When people develop methamphetamine psychosis, they have a greater propensity to violence that is specific to when they're psychotic so it's not that they generally have more propensity to violence, but when they develop methamphetamine psychosis, they have more problems in that area. They have a Pavlovian response that is very powerful. This is sort of the hub of their addiction where they are triggered and have this overwhelming craving, which is one of their most compelling parts. High rates of psychiatric comorbidity, and as I said, they are very difficult to engage in treatment and very difficult to retain in treatment.

Special Treatment Consideration:

Some groups require special consideration. (14:01). People who *inject* drugs and people who use methamphetamine or cocaine *daily*. Those two groups are going to have more severe consequences and more functional problems in virtually all areas. They are going to have more medical, psychiatric, and criminal justice issues. They are going to be more likely to have problems with housing and general functioning and their prognosis is going to be more challenged.

The other groups are *women*, *people without housing*, *men who have sex with men*, *those under 21*, and *people in treatment with medication for opioid use disorder*. All of these are populations where we see disproportionately more use of methamphetamine and some greater challenges in providing treatment to these populations.

This is a study from Washington where they looked at engaging people in treatment (15:00). They did surveys with people on syringe exchange. Two-thirds of these individuals were people who used opioids. One-third were people who used methamphetamine. They talked to them about their interest in reducing their use. 82% of those who used opioids said they recognize that at some point they would probably need to reduce their use or get into treatment or stop their use. Less than half of the people who used methamphetamine had the same attitude. So, it's a dramatically lower proportion who are interested in addressing their drug use when they're using methamphetamine as opposed to when they're using opioids.

Similarly, when you look at dropout rates of treatment in the first 90 days by substance use disorder, you see that for those who are in treatment for heroin, about 25% of them, drop out in the first 90 days, similar to tobacco treatment. With alcohol treatment, you get about a 25% dropout. With cocaine, it's almost 50%, and with methamphetamine, it's more than 50%. So, you have a population, these folks with stimulant use disorder that are hard to get into treatment and hard to keep in treatment. And, the treatments we have, the behavioral treatments, have certainly had some effects. But we're just scratching the surface of getting people into treatment (16:28).

Harm Reduction Strategies:

And with this population, harm reduction strategies are particularly important (16:33). In a primary care setting, where you may not be able to set up a full treatment program, because providing these patients with information about the medical effects of methamphetamine, letting them know about the dangers of fentanyl, providing syringe exchange services for people who are coming in and are using methamphetamine, and certainly giving them access to Naloxone because there's fentanyl in their drug supply, is important. Talking to them about if they are injecting methamphetamine, possibly if they're going to use it, they should try other routes of administration. Avoid using alone. When they get a batch of methamphetamine to use and they are going to inject it, they should test it first before they take their full dose. If they are using with a group of other people, one person should go first. Then they should have availability of fentanyl test strips.

All these strategies reflect the fact that many of the people you see who use methamphetamine may not be ready for treatment. They may not see getting full treatment as attractive to them. However, some of these harm reduction strategies can be critically important in saving their lives.

There is going to be a series of other talks. This is the first one in the series and I hope you find the information in this talk and the subsequent talks useful.
Thank you very much!