

The Intersection of Opioid Abuse, Overdose, and Suicide: Understanding the Connections

Webinar Series: The Intersection of Opioid Abuse, Overdose, and Suicide

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[Gisela Rots]: Good afternoon everyone and welcome to our webinar this afternoon on the intersection of opioid abuse, overdose, and suicide and understanding those connections. It is our pleasure to be here with you today. This is a webinar that is co-hosted by the Suicide Prevention Resource Center, or SPRC, and the CAPT, who are the Center for the Application of Prevention Technologies, both from within SAMHSA.

We are really excited to be here with you all today and are grateful you all are joining us. My name's Gisela Rots. I'm a part of the Center for the Application of Prevention Technologies. We've got some presenters to be here with you who are quite knowledgeable and I'm really looking forward to getting to engage in this information with you. So, with that I would like to invite Dr. Richard McKeon to start us off.

[Richard McKeon]: Thank you so much and I would like to welcome everybody to this important webinar on behalf of SAMHSA and specifically from both the Center for Mental Health Services at SAMHSA who provides the funding for the Suicide Prevention Resource Center and for the Center for Substance Abuse Prevention who provides the funding for the CAPT. I think it's particularly important that we are working together on this critical issue that has so many implications for Americans.

So, as I said this work is supported through both the SPRC and the CAPT and for the presentations both from them as well as those of us who are federal officials, the views that are expressed don't necessarily express the policies of the Substance Abuse and Mental Health Services Administration or the U.S. Department of Health and Human Services. Okay?

And so for facilitators in addition to myself today is Dr. Carol McHale who is the Senior Social Science Analyst at the Center for Substance Abuse Prevention and I am now going to turn it over to Carol.

[Carol McHale]: Thank you, Richard. Good afternoon everyone. I have the pleasure of introducing our three presenters today, one of whom has been chatting since the beginning with you, Gisela Rots.

Let me start out with Dr. Alex Crosby who is the Senior Medical Advisor in the Division of Violence Prevention at the Centers for Disease Control and Prevention. An expert in the epidemiology and prevention of suicidal behavior and community prevention services, Dr. Crosby conducts descriptive and analytical research and assists communities on the prevention of self-directed violence. He is also an adjunct associate professor in the Department of Community Health and Preventive Medicine at the Morehouse School of Medicine.

Next, we have Dr. Kristen Quinlan who is a Senior Research Associate at Education Development Center, which is the host organization for both the Suicide Prevention Resource Center and the Center for the Application of Prevention Technologies. Dr. Quinlan serves as Epidemiologist for SAMHSA's Suicide Prevention Resource Center. In this role she works across state suicide prevention systems to build their evaluation capacity and infrastructure for data collection and assists states in locating and analyzing existing data.

Dr. Quinlan has conducted multiple literature reviews examining factors that contribute to the non-medical use of prescription drugs including opioids and the effective strategies to address this problem.

Then we have Gisela Rots. Ms. Rots is the Coordinator for the Northeast Resource Team of SAMHSA's Center for the Application of Prevention Technologies, or the CAPT, as it is commonly known. In this role she is responsible for managing and supervising the delivery of training and technical assistance to the eleven states comprising the northeast service area.

Ms. Rots has extensive experience providing technical assistance to communities and community coalitions on developing cross-sector partnerships to address important prevention issues, including underage drinking, opioid overdose, and youth marijuana use.

A seasoned prevention practitioner, Ms. Rots makes connections between research content and the prevention work that is underway in the field, and she will discuss these connections at key points throughout the webinar today.

We have three objectives to cover today with our presentation that the three presenters will be addressing throughout. The first is to describe the relationship between opioid use disorder and suicidality. The second is to define action steps for accessing state, tribe, jurisdiction, and community-level data on suicidal behaviors, opioid abuse, and overdose. The third is to identify populations at increased risk for overdose and suicide death and the factors that contribute to these risks. And with this, I'll hand it back over to Gisela.

[Gisela Rots]: Thank you so much both Dr. McKeon and Dr. McHale for that introduction and for welcoming us today. I really appreciate that.

We're going to go back, but what I'd like you to think about right now is whether there are any other questions you'd like to see answered today, knowing what Dr. McHale just presented in terms of objectives, just invite you to share with us anything that's on your mind.

I also just want to put a little pin in your minds. You may have seen this in the initial registration that this is actually part of a two-part webinar series and we are planning that follow-up webinar, focusing on the issue of chronic pain in the intersection of suicide and opioids. You will be hearing from us about that soon. Be on the lookout for it.

With that, I would like to actually pass this over to Dr. Alex Crosby who's going to walk us through existing data sources at the national and community level on opioid abuse, overdose, and suicide. Then at the end of this section, and Dr. McHale alluded to this, I'll be coming back in, actually at the end of every section to talk about some of those practical implications for our work at the community level. So, Alex, can I hand it over to you?

[Alex Crosby]: Yes, you may, and I wanted to welcome all of those who are participating in the webinar today and as was mentioned, what I'll start off doing is giving you a picture of the description of the patterns of national and local data on opioid abuse, overdose, and suicide. And while there are many different ways in which we can illustrate what those patterns are, there's different aspects of the data from talking about data that deal with the deaths due to these particular adverse conditions; what about those that are hospitalized; those that might visit emergency departments, hospital emergency departments due to opioid overdose or suicide attempts; along with those where you can describe what happens when you ask on surveys. So, we'll give you some examples of all of those different kinds of data and let you see which ones might be useful.

One of the things to start off with is data from the National Survey on Drug Use and Health and from the data from 2016, it shows that almost twelve million people over the age of twelve abused opioids in that particular year when they asked them about it in the past twelve months, “Have you abused opioids?”

About 11.5 million, the majority of that 12 million, abused prescription opioids and that’s almost 97 percent of all those people who abused opioids.

One of the other things about it is to try to take a look at some of the different ways in which this manifests itself and you can see that there were almost a million that used heroin as one aspect of the opioid misuse that they had and that’s about eight percent of all of those that misused opioids.

One of the other parts of this problem is that there are many that abused more than one type of substance and you can see here that over half a million, over 641,000 used opioids and abused prescription opioids. So, you’ve got about 5.4 percent of folks also abusing those kinds of drugs, too.

Another way of showing what this problem looks like is using a pyramid, and what the pyramid does is it gives us an opportunity to look at opportunities for intervention. It also gives us an example of kind of what the magnitude of the problem is.

Utilizing several different data sources, we can look at adults from 2016 and give a picture of what was going on in regards to suicidal behaviors, suicidal thoughts, as well as deaths due to suicide. During 2016, when we were asking that question from the National Survey on Drug Use and Health in the past twelve months, “How many of you have seriously considered suicide?” You see that there was almost 10 million adults that said they had serious thoughts of suicide. That’s about four percent of all adults in the United States. About 1.3 million mentioned that they had made a suicide attempt in the past 12 months. Generally, that’s about 1 out of every 200 adults in the United States. Then there were about 45,000 deaths due to suicide in the year of 2016. That’s a suicide about every 12 minutes in the United States. That gives us an idea about what the magnitude of the problem is, but it also gives us an idea about where there may be opportunities for intervention.

Given that there were about 9.8 million adults that seriously considered suicide, but yet only 1.3 million that engaged in suicidal behavior, there’s a lot of opportunity to work with that 9.8 million to try to prevent them from moving on to suicide attempts. And from that 1.3 million to the 45,000 that died as a result of suicide trying to prevent those that engage in suicidal behavior in those non-fatal suicide attempts from moving on to the fatalities. It’s important for us to prevent fatalities, but also important to look at those risk factors—those that have thought about suicide, those who have engaged in suicidal behavior—and try to prevent them from moving on to more serious or more lethal aspects.

Another data system that I will give you an example from is the National Violent Death Reporting System. This is data from 2015 that describes the patterns of suicide for the twenty-seven states that reported all of the deaths due to suicide in their state. One of the things to see here is that about fifty percent of the suicides were a firearm with the mechanism.

We'd like you to focus just for a minute on those 15 percent, so about 1 out of every 7 in which poisoning was deemed to be the mechanism of death. Of those that died as a result of poisoning suicides, you can see that for about a third of those opioids were considered the main cause of death. But also note that there are other forms of chemicals that are also found in other substances from antidepressants to benzodiazepines to antipsychotics and that oftentimes with those that die of the result of poisoning overdoses, as well as other leading mechanisms, that often times there are multiple substances that may be involved in those forms of death.

This bar chart gives you an example that suicidal behavior, that alcohol-related substance abuse, and that drug-related substance abuse, in terms of causes of death, affect all populations. So, whether you're talking about Native American, Non-Hispanics, White Non-Hispanics, African American Non-Hispanics, or Asian and Pacific Islanders, it affects all of those populations. It manifests itself differently in these different populations, but it's important to note that it affects everybody. You know, whether you're talking about different age groups, whether you're talking about different communities, whether you're talking about urban or rural populations, that all communities are affected in some form or fashion.

You can see in different populations that alcohol-related deaths might be the largest portion. In other populations, it might be overdose-related deaths in terms of prescription or drug-related overdose, and in other populations it might be suicides, but it affects all of them.

This trend line just demonstrates that especially when you look at suicides in the purple, that rates have been increasing since the year 2000 steadily all the way up to 2016 and then when you look at unintentional drug overdose, poisonings in the yellow, that rates have been increasing since the year 2000 and especially have increased since about 2012. So, while many other of the major leading causes of death, especially the top ten causes of death in the United States, have been decreasing. Heart disease, cancer, stroke, all of those have been coming down. These two have been increasing. Also in relation to looking at some of the other forms of injury-related deaths, that some have been dropping, but these two have definitely been increasing.

There are different sources of data and there will also be handouts that are available for you to download that you can access some of this data that might look at the national data, might look for the data for your state, or in some cases may also have locally available information.

Along the first row, Web-Based Injury Statistics Query and Reporting System, also called WISQRS, which is available on CDC's website that includes fatal, as well as non-fatal data, that you can look to opioid abuse deaths, as well as suicides, and then also non-fatal suicide attempts.

The second row, National Violent Death Reporting System, which currently is available in 40 states, plus the District of Columbia and Puerto Rico. We got word that probably by the end of this year we ought to be able to expand that system to cover all 50 states, plus DC and Puerto Rico, and that includes information about suicides as well as the circumstances that were precipitating those suicides.

The National Survey on Drug Use and Health, which collects information about adults, includes information about opioid abuse and about suicide attempts and about suicidal ideation. The Youth Risk Behavior Survey, the next to last row there, that includes information about high school students and does ask questions about substance abuse, about suicide attempts, and also about suicidal thoughts.

Then a new system that we are now developing and providing information of is the BioSense Platform or ESSENCE, which provides real time data on hospital emergency department visits across a number of different entities including substance abuse, including suicide, and suicide attempts.

At this point, I'll turn back over to Gisela and we will talk a little bit more about some of the implications and give some examples. Thank you very much.

[Gisela Rots]: Oh, Alex, thank you so much. That was an incredible amount of data. I just want to take a step back for a moment because I think one of the things that you all will notice is that today we are going to be focusing a lot on data. So, we just kind of presented some national data. Alex showed you this other handout we have that identifies different kinds of data sources and how you can break them down.

But kind of again, to take a step back and talk about this data collection piece. Collaboration and partnership-building — these are two pieces we're going to focus on heavily today. And just to explain why, I'm sure as many of you as community-level prevention practitioners know and understand the importance of this, right? But we have to make sure that we're collecting data that is relevant and that helps us to identify what the priority problems in each of our communities are. Then to think about the specific community contexts in which we're operating so that if it's relevant, we can then identify the appropriate kinds of evidence-based programs that we could be implementing if we need to address, for example, suicide and opioids specifically.

We understand these are, both suicide and opioids, are certainly big concerns for so many communities in our country, but not for each and every community. So, I just want to not be too fatalistic about that. Sorry, that's probably not the right word, but just to put that caution out there.

It's important for us to go back and really look at our community-level data so that we really know what we're working with.

So, when we're thinking about that data piece for, if I'm a community-level prevention practitioner either working on suicide prevention or substance abuse prevention, I want to be able to step back and identify what kind of community-level data I have that assesses cause of death. So, do I have anything related to medical examiner data? What might my youth health survey tell me about both kind of suicidal thoughts and ideation, any substance misuse, and those kinds of things? So, I want to make sure that I know what kind of community-level data I have.

Then I want to be able to look for both kind of the method of suicide and the presence of opioids and that can look a little bit different. Again, that might involve some information from medical examiners, or coroners, and toxicologists, right?

Then I want to take a step back and look to see how my community data compares to the national and state data. Is it completely different? Is it on track? What does that mean for how I might need to be able to respond?

Based on all of that, then I want to really identify partners who I might want to approach for qualitative data, right? So, key stakeholder interviews or focus groups and that will hopefully then lead me to a place where I might understand better which populations are most at risk in my particular community.

So, Alex, if you can just kind of softball a question to you. If you're thinking about this process at the community level, which kind of partners might you be looking for us to reach out to, to try to engage in this and get some additional data from?

[Alex Crosby]: I think there are a number of different partners that would be interested and willing to participate in terms of the efforts to try to address both of these two problems and you know there might be one way of trying to think about kind of two big categories of partners.

One might be those partners that might have data and data providers. You know, from, as you mentioned, maybe medical examiners or coroners that would have information about death data. There might be some ability to collaborate with those that work in the areas of social services. You know, whether it's the Department of Family and Children's Services, and depending on different states, they may have different names, but understanding that those kinds of organizations may have information about those that may have had trouble with some of the different areas.

Substance abuse—whether it's clinics or hospitals, or other kinds of organizations that might have that kind of information. Law enforcement may also have information in terms of providing data and oftentimes in working with those organizations, you'll find that some organizations have some bits of the puzzle and other organizations have other parts of the puzzle and by putting those

together, a better coordinated effort to identify where are the vulnerable populations, where are the at-risk communities, might be better able to work together.

The other big category in terms of looking at who might be some of the stakeholders would also be those organizations that are involved more in the prevention aspect. So, they may also have information about services that they can provide. Those kind of folks that they have seen as part of their clients or patients that they may be able to provide information, not only the data, but then also capacity for being able to work with some of these groups that might be at risk. And then also how that there might be some needs within the community that are unmet and that by working together and collaborating with some of these different organizations, we might be able to do more than just one organization by itself.

One of the other things that I wanted to mention too, that as you talked about identifying community-level data sources to assess the causes of death. Mortality is an important aspect to try to take a look at. What do we know about those that have died as a result of overdose or those that have died as a result of suicide and trying to understand the risk factors that we might be able to address? It also may be important to identify, as we talked about, some of those that have been affected but have not died. You know, the non-fatal injuries, the overdoses that were able to be treated and not lead to a fatality because that kind of information is also useful in identifying those populations where we may be able to intervene before a worse tragedy occurs.

[Gisela Rots]: That is super helpful. Thank you so much, Alex. I think especially kind of as you help us to think through how do you build capacity, right? So, thinking about those organizations we can partner with and what that means for our capacity as well as the needs that are being met, and those that are not being met, and thinking about risk factors, which I know we'll be talking a little bit more about in just a few minutes. So, thank you so much. That was really helpful.

In the meantime, I am going to keep us going because we actually have an example from the field that I just want to kind of share with you all because I think it's helpful. So, we're taking this example from the State of Rhode Island, and they actually have gone back and tested all those who died of suicide deaths. So, for specifically looking at anyone who is twenty-five and older, and have tested those for opioids.

In September 2017 they released a report where they found and there were about eighteen percent of those who had died of suicide had opiates present in their system. They didn't just test for prescription opioids, though, they also tested for fentanyl and carfentanyl, which I know in different parts of the country is becoming an increasing concern. They used this data to really help them think through how they could collaborate more effectively with their partners, right? So, they used the National Violent Death Reporting System data that Alex was just talking about and then did a follow-up test for the presence of opioids, and they were also able to then step back and use this

information to help inform that drug trafficking information that they had and think about what that meant for how they could reduce the opioids supply, right? So, thinking very strategically about kind of how they could collect a little bit more data to make that picture a little bit more whole. And you know, right, for some I get that testing all of those suicide deaths for opioid might be beyond the scope of kind of what we're able to do financially, but it's just one more way to think a little bit outside the box about how you can collect more information and how that might actually be able to not just address reducing suicide and opioids, but also thinking about reducing the opioid supply.

So, that was just a brief example from the field on how one state has gone about, how can they enhance the data they're collecting and go a little bit deeper, build on that twenty-state partnership that you see kind of highlighted on your screen in terms of opioid trafficking.

And you know everybody has to do this differently, but I thought that this was a great example. If you're interested in more information, you can see the website is right there on your screen. It's www.preventoverdoseri.org.

So, with that, I think we'll go ahead and keep on moving. So, with that, I'd like to now hand it over to Dr. Kristen Quinlan who's going to help us understand a little bit more about the relationship between suicide and opioids. So, Kristen...

[Kristen Quinlan]: Good afternoon, everyone. Thanks, Gisela. So, in this next section I'm going to be exploring the relationship between suicide and opioid abuse. As you're going to see, it's a complicated relationship that the field's really still unpacking. Researchers are still trying to understand the mechanisms that explain the relationship between opioid abuse and suicide, and it hasn't been easy.

You're going to see in this next section that our efforts to understand the relationship have been thwarted by some very serious data concerns, and we're going to get to those concerns in just a moment. First, I want to take a look at some national data on the intersection of prescription drug abuse and suicide before turning specifically to the research.

So, on this slide here, you see data from the 2016 National Survey on Drug Use and Health. This slide reflects the percentage of adults, so these are folks who are eighteen and older, who reported serious thoughts of suicide in the past year. If we compare those with no history of prescription drug abuse to those who have a history of prescription abuse, we see a pattern. We see that those who have abused prescription drugs are at a higher risk for suicidal thoughts. And this is true every year from 2011 all the way through to 2016.

This is actually similar information, but from CDC's Youth Risk Behavior Survey through 2015. This time, the slide reflects the percentage of children, so these would be youth in grades nine through twelve who reported serious thoughts of suicide in the past year. Again, if we compare those with

no history of prescription drug abuse to those with a history of prescription abuse, we see that same pattern that we saw for adults. Those who have abused prescription drugs are at higher risk for suicidal thoughts. And again, this holds true every year, 2009 and all the way through.

So, now that we've seen some of the national data on both of the slides I just presented and the ones that Alex did earlier, I want to take a look at some of the research. I think it's important to turn to the research literature, because it really lets us explore some of the nuances of the relationship. So we can explore questions about whether the dose or the frequency of opioid abuse impacts its relationship to suicide, and other complicated questions like that, that move us beyond general associations.

So, if we look at the research literature, we see that adults who receive high doses of opioids are at increased risk for suicide. In this study cited here, on the first bullet of this slide looking specifically at VA patients, this relationship between higher doses of opioids and increased risk of suicide holds true even after controlling for demographic and clinical factors. So, the relationship between higher doses of opioids and increased risk of suicide is still true regardless of demographics of the patient and regardless of whether or not that patient has a history of or a current diagnosis of depression or anxiety.

The relationship between opioid abuse at lower levels, so this is less than weekly, and suicide can mostly be accounted for by demographics and psychiatric conditions. So, once we control for those things, things like depression or demographics, the relationship between opioid misuse and suicide really falls away. However, if we start looking at adults who abuse opioids weekly or more, so more frequent users, we see they're at higher risk for suicide planning and attempts, and this holds true even after we control for things like depression and other psychiatric conditions.

The third bullet on the slide here, comes from a meta-analysis, and a meta-analysis is a study that combines the results of several different studies. This particular meta-analysis found that adults who have an opioid use disorder are thirteen times more likely to die by suicide than the general population.

I think we can draw a theme from all three of these bullets here, and what they have in common is that the degree of opioid involvement matters. People who abuse opioids frequently, or who use them at higher doses, or who have an opioid use disorder appear to be at particularly high suicide risk.

So, this is where I want to kind of get into the mechanisms through which opioid abuse and suicide are related. There could be a lot of explanations for the relationship between opioid abuse and suicide, so maybe higher doses of opioids offer increased access to lethal means. They're available in folk's medicine cabinets and that explains the link.

Maybe opioids have some kind of disinhibiting effect. So, they increase the likelihood that a person can or will act on a suicidal impulse. Or maybe people who take higher opioid doses share characteristics that explain the link with suicide kind of in other ways. So, for example, research tells us that people with a history of depression are actually more likely to receive prescription opiates for pain, and they're more likely to receive them in higher doses, and with a greater days' supply than when you compare them with people without a depression diagnosis. So, maybe this is where the explanation is.

Any of those hypotheses are actually a possibility or even a combination of these hypotheses are really entirely possible. I think the take home point here is really that the relationship between opioid abuse and suicide is complicated and the explanatory mechanisms for understanding that relationship are not really well understood.

So, understanding the relationship between opioid abuse and suicide is made even more complex by some inconsistencies and limitations in our death data. When classifying a death as a suicide, a coroner or medical examiner has to determine two things. They have to determine if the person knew that the dose was likely to be lethal. Did they have enough experience with or knowledge of the substance to really understand its effects?

And what was the person's intent? And this intent question is one of the more challenging aspects of our opioid suicide death data. Was this an intentional suicide by opioid poisoning? Or was this an unintentional opioid overdose? And the issue is that intent is really left up to coroners and medical examiners who might have their own biases or opinions about what constitutes level of intent. So, coroners and medical examiners are left to determine where on this intentionality continuum a death might fall. And this is complicated because sometimes even the decedent might not truly understand his or her own intent. So, it's very challenging for coroners or medical examiners who find themselves in that situation.

So, as a result, medical examiners' and coroners' systems are just challenged. These are the categories they have to choose from on a death certificate, here on this slide. And clearly the last four represent that overdose-suicide intentionality continuum that you saw on the last slide. We have cases of clear suicide and cases of clear accident, but sometimes intent isn't known and we need to make sure that medical examiners' and coroners' systems are being systematic in their selection of manner in death and not inadvertently biased about selecting some cases as a suicide, some as an accident, and some as undetermined.

On this slide, we have a summary of some of the common challenges that medical examiners and coroners are facing when they're trying to classify a poisoning death. First, they're met with scarce resources and inadequate training opportunities. Coroners in some states are elected officials and they might not have any medical training, and some states don't have any policies regarding

requirements for any kind of ongoing training. So, when something pops up like the opioid crisis, coroners and medical examiners are sort left scrambling. You know, they may or may not have the resources or the training to really adequately address it and understand all of the nuances associated with it.

So, there's the issue of punitive policies. So, some insurance policies might have punitive policies, meaning that if a decedent took out an insurance policy just before their death, for example, if it was a suicide it might not be paid out. Coroners and medical examiners know this and this might come into their manner of death selection.

We also have a bias that's produced by knowledge of existing trends. The opioid crisis is really everywhere. So, it's on the news. It's in our everyday conversations and the medical examiners and coroners are operating in this context. So, they might hear the word opioid death, and they may not necessarily be thinking about suicide.

There's also the issue of stigma and cultural opinions. Coroners and medical examiners might face some political pressures not to classify a death as a suicide because of stigma. They might have some ideas about what they think a suicide looks like. They might not look so closely at classifying a death as a suicide if doesn't contain very specific characteristics like a note or if they're using a more passive method of death over a more active manner of death. So, a gunshot wound or a hanging being more likely to be classified as a suicide than an opioid overdose. We also have those complexities around determining intent, which I sort of covered already.

I think the issue of intent, along with the issues that are identified on the last slide, mean that the undercounting of suicide is a potential problem when we start thinking about overdose death. And I think the bigger problem is that the undercounting might not be random. If it were random we would expect that all populations were affected equally by the non-random undercounting, and while this would be a problem because it would lead us to think that suicide was maybe not happening as often as it truly was, it's not sort of disproportionately less in some groups over others. The non-random undercounting of suicide means just that, that the suicide undercounting is non-random.

So for those who are interested in this issue, I think if you read Ian Rocket's work he's very specifically focused on this issue. He's from West Virginia University and he's found that specific groups might be more affected than other groups by the undercounting of suicide. The characteristics you see listed here on the slide, minority race/ethnicity, younger age, lower levels of education, lack of history of psychiatric comorbidity, and a lack of a suicide note indicate those people who are more likely to be placed in that category of injury of undetermined intent and, therefore, at risk for a possible misclassification of suicide. So, there's some suspicion that the undercounting of suicide is, in fact, non-random.

Not included on this slide is some more research that indicates that more active modes of injury, like gunshots or hangings, are more likely to be classified as suicides than less active modes of injury, like poisoning through overdose. I think the take home point here is that there's a lot of grey area in classifying overdose deaths, and that grey area means that some groups might be at a higher risk of misclassification than others. And that's really important when we're thinking about using this data for where we're directing our prevention resources, because the data may be leading us in a different direction than is actually happening on the ground.

I think importantly we want to turn and think about tribes, because when we think about tribes, we have all of the same concerns we just covered in the prior slides, but we also have a few more. For some tribal communities, there are concerns about the power of words and language. The term suicide might be outside of their cultural and religious lexicon. So, the cultural concept of suicide might not really exist for some tribes, which makes it awfully difficult to count. Because tribes have historically been disenfranchised, they may be really protective about their community and worried about what their data might be used for if they were to share it more broadly.

A tribe might be collecting data in ways that are different from each other and different from the systems that have been developed by the federal government. So, this means that in some cases data may not be available for certain tribes or certain groups.

Again, I just want to underscore the point that the undercounting suicide really matters. It matters for tribes and it matters for other populations. We use this data for planning and for making the case for prevention dollars. We also use it for evaluating our prevention efforts, and inaccurate data could seriously impact our prevention work.

So, what I want to do next is turn to Gisela and talk about examples and implications.

[Gisela Rots]: Awesome. Thank you, Kristen. That was an awful lot of information.

I actually would love to before we talk a little bit more about this example from Kentucky, I want to take a step back and actually pose a question to Dr. Richard McKeon, who you all heard earlier during the webinar.

Dr. McKeon, so Kristen talked about the challenges related to undercounting, and I'm wondering whether, since you have a very national perspective on this, if you could say a little bit about why that is problematic from a national perspective and if you could maybe give an example of how you've seen that being addressed either through the form of a collaboration or in some other form?

[Richard McKeon]: Well, I think the undercounting is problematic and for a number of different reasons. One of which is that it minimizes the attention being given to the steadily increasing rates

of suicide in the United States, and the undercounting means that it's worse than it appears even in the national statistics, you know, which are concerning enough.

And, you know, the example was given about how that . . . you know one thing that's utilized is the presence of a suicide note. When there's a suicide note there, then we know that it's a suicide, but there are a couple of issues associated with that. One is, and I think Alex would know this better than I, but I think it's no more than 1 in 3 suicide deaths actually have a suicide note. So, the idea that a suicide is invariably associated with a suicide note is inaccurate.

And how to determine that, of course, it is challenging. And I think we see the same challenge when we look at non-fatal overdoses. And you think about all the people who present to emergency rooms either after a suicide attempt or a non-intentional overdose, and the reality is until somebody sits down and talks to the person, they're not going to be able to make a determination about whether it was a suicide attempt or it was an accidental overdose, and that's important. And there may be some instances where even the person themselves may not be clear about what their intentions were.

You know, so because of this, and this fits in with why we're doing these webinars on this topic, it's really important for us to be aware of the importance of collaborating and working together.

So, for example, those who have made non-fatal overdoses, whether they're intentional or not, being seen in emergency departments—all of them, regardless of whether it was a suicide attempt or not, require rapid follow-up and linkage to care, regardless of whether it was intentional or not. And each of them needs to have a careful assessment in the emergency room by staff who are familiar with both suicide as well as the opioid epidemic and other substance use-related issues. So, those are some thoughts around that.

[Gisela Rots]: That's super helpful. Thank you for that.

Kristen, I actually want to throw another question at you. We've gotten a couple of questions around the definition of opioid abuse. Can you say a little bit about that? Is it related to DSM-5 or is there another definition that you were looking at here?

[Kristen Quinlan]: So, when we're talking about opioid abuse, it depends on the survey which we're referencing. So, different surveys refer to it in different ways. For some folks it involves the use of prescription drugs that were not prescribed to you; or the use of prescription drugs in a manner that was not indicated by the doctor; or, you know, the use of someone else's prescription; or the use of prescription in an amount that's different than what was prescribed. So there's a whole host of different ways in which it can be defined. Sometimes it's defined with all of those.

Also, within the surveys, some surveys ask about lifetime. Have you ever done this in the course of your life? Others will look at past year. Have you abused prescription drugs in the past year? So, the definition really depends on the source, so depending on that that would be how you define it.

[Gisela Rots]: Great. That's helpful. Then to kind of circle around to the other side of the question, which is you referenced the question of a high dose of opioid being at an increased risk for suicide. Can you define high dose of it?

[Kristen Quinlan]: Yeah, so I cannot at this time, but actually I can refer back to the research on this, the citation on that slide. I can pull that for you. I'm sorry, I don't know what that particular research study cited as a "high dose," but often in this type of research they refer to high dose, also a higher number of prescribed days, so the longer sort of length of prescription. There's a whole list of different variables that they use to sort of define access to opioids in general.

[Gisela Rots]: Great. Perfect. Thank you. So, we will loop back around on that one. Alex, I'm wondering if I can also pitch one more question to you before I start with my "so what" implications. We got a question around mandated screening. So, is there a suicide risk screening that is mandated for providers who prescribe opioids? Would you happen to know the answer to that question off the top of your head?

[Alex Crosby]: This is Alex. I don't think there are standardized protocols for that or mandates for that across the board. You know, so for all providers that would provide opioids, I don't think there is a mandate for that. One of the things to mention in that regard is there was a recent review by the *Guide for Clinical Preventive Services*, and one of the things they found is that there wasn't solid enough evidence for some of the screening tools that were available at the time. And this was a couple of years ago, and I know they're going to try to review that, but some of the screening tools did not provide enough evidence for action by the providers or, in some cases, the infrastructure wasn't available to identify somebody that screens positive. What is the follow-up? Is there an in-person interview? Is there standardized treatment? Is there availability of treatment for folks? So, at that point, there was insufficient evidence when the clinical guide put together a systematic review of all the evidence that had been published at the time.

[Gisela Rots]: Great. That is really helpful. I want to go ahead and kind of loop back around the implications for practice and think a little bit about what we as suicide and substance abuse prevention practitioners can do to help address this issue? I guess an extra note to say that, as Kristen alluded to, the stigma around both overdose and suicide is huge, right? As public health problems, I think that stigma is something that we all should be thinking about. So, we have to think about that as we move forward. I think actually some of the questions about how do you engage people around this topic, kind of get at how do we overcome this stigma? We don't have a ton of

time to talk about that today, but I do what to make sure it's kind of in folks' minds and we can go ahead and loop back to that in a bit.

But a few things, right? So, once we've identified who's being impacted or affected in our community, we want to think about what's happening in our community that puts some populations at higher risk than others at certain times, and how can we ensure that we're really being intentional about knowing who's being impacted and why, and ensuring that we know that cultural context? I think this is one of the reasons that community-level folks are often the most appropriate to be thinking about how to engage in this, because we understand the community context in which we operate.

Secondly, we want to be thinking about engaging those key stakeholders to understand their classification practices. I think Alex kind of referred to this in his earlier comments around engaging the coroners and the medical examiners to really understand what their classification practices are. We do know that the CDC is pulling together a guidance document based on some workshopping and work groups of key stakeholders that they've been working on that will have some tools that will provide some support to develop kind of standardized classifications. So, that will be a tool that will be forthcoming that would be really helpful for these, especially the coroners and the medical examiners.

Then we want to make sure we identify others in our region who are addressing this issue. I think Alex alluded to this earlier when he was talking about the organizations who are providing practices. We often think about this at the community level, but understand that regionally this is also incredibly important, because I know many of us don't live in communities where all of the services are easily accessible, you know right within those geographic bounds. So, thinking about that and making sure that we are thinking about who else we should be tapping into.

I know when I worked at the community level, I was always kind of reaching out to my partners in different communities who I knew had different experiences and access to different resources, and so kind of thinking very strategically about that is really important.

With that, I want to move us along to another example from the field. This time, I want to be highlighting some work being done in Kentucky. So, in Kentucky, in addition to having some standardized crime scene tools, they're also thinking very strategically about connecting people who overdose and end up at the emergency room with a peer support recovery specialist, who also happens to be trained in suicide prevention-specific kind of evidence-based programs. So, I believe, in this case we're talking about QPR and Assist.

And we know that not everyone who overdoses ends up calling 911, but I think that this example specifically highlights how someone can access more services and why it's so important to think

strategically about how we can do some of that cross-pollination. In this particular case, this collaboration has really helped the state think about how to improve accuracy in suicide and opioid overdose data, and they've thought about how they can address suicide risk and overdose risk simultaneously or concurrently. That is also incredibly important.

So, if you have peer support recovery specialists in your emergency rooms, and you're able to link them with some resources for suicide prevention, that really kind of helps to collaborate and start some interventions at that community level.

In order to keep us on time I am going to keep us moving, since we just finished answering a few questions. We are going to move on now to thinking about opioid abuse and suicide and what we know about specific risk factors. This will be our last section today and, again, we'll come back around to see at the end of this section to talk about some practical implications and answer some questions and give you another case example. But for now, I want to hand it back over to Kristen who's going to help us understand a little bit more about these risk factors.

[Kristen Quinlan]: Great. Thank you, Gisela. So, as Gisela mentioned on the next couple of slides I want to talk about the factors that increase risk for opioid abuse and factors that increase the risk for suicide. Then I'm going to look at the overlap together. So, we'll see what risk factors these two public health issues have in common, and I want to talk about how an understanding of shared risk factors can really help us in our prevention work.

Let's turn first to the factors that increase risk for opioid abuse. I want to flag first physical health problems and pain. I saw that come up a couple of times as a question in the chat on the relationship of opioid abuse to pain, and we're going to be covering that relationship between pain and opioids in a greater detail in our next webinar. For now, I just want to flag the fact that pain patients, particularly those with a greater supply of pain medication, could be at a higher risk for opioid abuse and dependence. And the relationship can really be magnified if there's a history of trauma or a prior history of substance abuse. So, pain patients with a trauma history or with a substance abuse history are at an even higher risk of opioid abuse.

I also want to flag behavioral health problems here, on this slide. Depression and anxiety are very well studied risk factors for opioid abuse. They've been studied as risk factors for both adults and youth as well. And interestingly, we can actually tie the risk factor of depression and anxiety—behavioral health problems back to that issue of chronic pain, because chronic pain patients are at higher risk for depression and they're also at higher risk for opioid abuse. So, the risk factors that we see here on this slide are not isolated risk factors. They're actually linked together with one another.

I also want to flag trauma as a risk factor. Trauma, which some researchers have defined as childhood abuse and neglect, has also been directly associated with an increased risk of prescription

opioid misuse in early adulthood. Some researchers suggest that this connection can be mediated by the experience of pain. So, pain plays a really important role in understanding that connection between child abuse and neglect and opioid misuse. Again, just flagging that factor that these are not isolated risk factors. They are interconnected.

I also want to look at social isolation. Rural environments, which some researchers have used as a proxy for social isolation, have been associated with prescription opioid misuse, particularly for White adolescents. If we look specifically at measures of social isolation and drug use, we see that for adolescents the risk of drug use increases with loneliness. So, there's some research out of Colorado State that kind of tiers in terms of risk factors in different types of adolescents. So, youth who don't have any drug-using friends, but who have a lot of friends, are the least likely to participate in drug use or abuse. While lonely youth and youth with many drug-using friends are more likely to abuse drugs. So, this research isn't really opioid specific, but it does really speak to that vulnerability of loneliness as a risk factor for drug abuse.

I definitely do not want to leave this slide without talking about the difference between causation and correlation. The factors on this slide show increased risk of opioid abuse, but they don't guarantee it. So, even if a person were to have every single risk factor on this slide, it doesn't mean they will abuse opioids. Opioid abuse is not necessarily caused by any one of these risk factors, and these risk factors have very complicated relationships, even with one another. So, I want to really underscore that fact that these relationships are complicated and they are not causal.

On this next slide, I want to talk about the risk factors for suicide. If you're looking for a really nice summary of some of the risk factors associated with suicide, you might want to turn to the National Strategy for Suicide Prevention, and the link to the National Strategy can be found in Handout #2, which you see here on this slide and also in the bottom left-hand corner of our presenting pod here. I've highlighted a few of the risk factors that can be found in the National Strategy here on this slide as well. I want to flag first physical health problems and pain. Cancers, degenerative diseases like Parkinson's or Multiple Sclerosis, traumatic injury, and chronic pain conditions like headache and back pain are all associated with suicide risk.

I want to highlight social isolation as another well-established risk factor for suicide, particularly for adolescents. If you look at some work out of the University of Minnesota, we see some clear associations between social isolation and suicide attempts. In this specific research that I'm thinking of, they actually defined social isolation as having fewer than one friend. So, youth who kind of endorse to that risk factor, were also at higher risk for suicide attempt. I also want to turn to trauma and highlight that here on the slide. Research has shown a positive correlation between the number of adverse childhood events, or ACEs, and future suicide risk. We also know that historical trauma seems to be associated with future suicide risk and we've seen that in Native American and Alaskan Native populations.

Again, I want to underscore this idea that correlation doesn't equal causation. The factors on this slide are associated with suicide, but their relationship to suicide is complicated.

If we think about this slide and the slide before it, we can see that there are some commonalities between those factors that place people at risk for opioid misuse and those factors that place people at risk for suicide. Specifically, we see that physical health problems, behavioral health problems, trauma, and adverse childhood experiences, and social isolation are all associated with both opioid abuse and suicidality. There's some intersection there.

And I think that as prevention practitioners, it's important to think about what we can do to address suicide and opioid abuse because of that clear intersection. So, we might want to think about implementing strategies and programs that really target those areas of intersection. There are a few ways we could go about this. So, for example, we could move upstream a bit. Maybe we could target those shared risk and protective factors early. So, we look at strategies that reduce social isolation, for example.

Or we can think about those shared risk factors as a way to provide targeted supports. So, if we know that adults with chronic pain are at high risk for suicide and opioid abuse, for example, we make sure that people who encounter adults experiencing pain, like those who work at pain clinics or through home visiting programs, are really well prepared to do appropriate training and referrals for both suicide and opioid abuse.

And substance abuse preventionists and suicide preventionists have a lot in common. One of the commonalities is that there's never enough funding for all of the prevention work that we need to do. And so joining forces really helps all of us. There's a lot of benefits to it. It focuses on those at highest risk. It avoids the duplication of effort. It provides good value for our prevention dollars.

On this slide too, I want to highlight Handout #3. I think individually suicide prevention and substance abuse prevention have generated a lot of really good resources, but suicide preventionists might not be aware of some of the resources from substance abuse prevention and vice versa.

One of the reasons I was really excited to do this webinar is because we really targeted both audiences. On the line here we have suicide preventionists, we have substance abuse preventionists. And I'm really excited to see handout number three, because it highlights the good work of both fields. It's a nice opportunity for both fields to learn about what the other is doing so we can increase collaboration.

I want to turn things back to Gisela so she can talk about some real-world examples of applying things and implications.

[Gisela Rots]: Perfect. Thank you, Kristen, and I know a couple of you had questions around specific strategies and encouraging collaboration and hopefully the two handouts that Kristen just alluded to will help kind of get you on your way. There are definitely a lot of really helpful pieces in there.

I'll just highlight, I know we've gotten a few questions specifically around working with tribal populations. Just to highlight that there is actually a tool in Handout #2 that's geared toward working with tribal populations called *Cultural Approaches to Prevention*. So, I encourage you to take a look at that.

For now, I'm going to, again, think about some "so what" implications. So, based on what Kristen just shared with us, what are some of the things that we should be thinking about and what implications for those of us working at the community level does all of this have?

Again, we're really talking a lot today about data and making sure we capture data around the means of suicide and making sure that the populations that are at highest risk are being captured effectively. The importance of understanding who's at risk cannot be underscored, and the means by which they are committing suicide is really important. And understanding this, again, is the key to being able to link to evidence-based strategies to ensure that the efforts that we put in place are going to be as effective as possible to help us get those outcomes that we are looking at.

Then again, focusing on engaging those new partners who can both identify and implement innovative strategies to address both overdose and suicide are really important, right? Thinking about perhaps are there pain management centers in your community or other sectors who can help with something like a prescription drug disposal strategy? Is that possible? I think that those are the kinds of things that we can be talking about. Again, we'll talk a little bit more about chronic pain specifically on the next webinar, but you can be thinking about some of these other folks and partners in your community beyond medical examiners and coroners who can help out.

Then there's this question of does it make sense to pull together a special task force to address this intersection of suicide and opioid abuse? You know, the idea of building new partnerships and help to address stigma. This is the perfect place where you can also engage folks who are either in recovery from opioid use disorder or who may be using illicit drugs actively. I know we've presented some data around prescription opioids specifically and how that's related to risk, but of course there is this piece around folks who are using illicit opioids also being at risk, and although we may not have called that out specifically that is certainly a part of this conversation. The data is a little harder to get sometimes, but again if you're able to do those post-suicide autopsies, you can find out what kind of opioids may be present in the system. And again, the special task force in this particular case can help you bring together the various folks who will know the most about these populations.

Then finally, this issue of stigma. I brought this up before today, but understanding yourself the stigma that's facing the populations that are abusing and misusing opioids and those who are at a higher risk for suicide is really important. As prevention practitioners, finding ways to talk about this in our communities in a way that is both understanding and compassionate for all those involved is incredibly important. And by talking about it and doing so compassionately, you know, we can help to kind of take down or breakdown some of that stigma by being careful about the language that we use, which is something, you know we constantly have to be thinking about and we have to be adjusting.

And I think you've heard us do that today a little bit during this webinar, kind of going back and forth between language—it's a process and it's not easy, but I think that we as prevention practitioners, whether we're working on the suicide side or the substance abuse side, we have the opportunity to go ahead and start having some of those conversations.

So, that's kind of a few implications for practice that we wanted to highlight. Again, I wanted to land on one more example from the field and this one's from Connecticut. And the reason we opted to kind of highlight Connecticut here is because of some of the work that they have been doing to build an infrastructure within the state where they really are able to address that intersection of overdose and suicide.

So, over the last ten years, Connecticut has actually been building up their infrastructure with both their suicide prevention grants, their substance abuse prevention grants to really seek to integrate the substance abuse prevention, the suicide prevention, and actually the mental health promotion efforts that are happening across the state.

They've kind of gone beyond just going statewide and then gone down to regional levels and looked at integrating the regional Boards of Health and the Substance Abuse Prevention Councils, making sure those are integrated and working together so that there aren't separate entities doing this work kind of across the board and really looking at making sure that they're all kind of singing the same tune, if you will.

This has also allowed them to actually address access to lethal means both in healthcare areas, as well as within universities. They have been working hard to reduce the stigma against access to naloxone and using naloxone to reverse overdoses. They've also been able to kind of share the detrimental impact on family and loved ones when suicides are misclassified as opioid overdoses. That was something that really came up as being really important for them.

And kind of landed in this place where, you know, the more people know and understand and the more people were at the table, they found the better and greater the questions being asked of the state to effectively address both the issues of overdose and suicide and their intersection, right? So,

the more people you have at the table the harder the questions that get asked sometimes and that helps to push us all to get clarity on where we're going and what kinds of things we need to be thinking about.

So, I want to wrap that up there. I hope that was a helpful example for all of you.

We do have some time for questions, and I'm actually going to go ahead and go back a little bit, because we had a question from a participant around psychological autopsies. And Kristen, I'm wondering if I could pull you in here. The question is: Is there any evidence that psychological autopsies improve data collection? I'm wondering if you have any thoughts on that.

[Kristen Quinlan]: I do. So, for those who are not familiar with psychological autopsies, some states have child death review committees. A child death committee will actually look at the death of children and kind of do an investigation, a psychological autopsy if you will, speaking to parents, other family members, friends, providers to figure out what systems they touched prior to their death and other . . . just to get a good sense of the kinds of issues that the child might have been dealing with prior to their death. Some states also have suicide fatality committees that do similar things but for suicides.

The question with regard to psychological autopsies led me to think about Nate Wright's work out of the University of Minnesota. Nate Wright is an epidemiologist who is working with psychological autopsies specifically for tribal populations.

So, what Nate Wright did is he looked at all of the deaths by overdose of Native American individuals in Minnesota and classified those deaths, using the manner of death classification by the coroner to say, "Okay, well was it a definite suicide? As in, it was classified as a suicide by the coroner. Was it a possible suicide? Was it a probable suicide? Or was it an accidental overdose?" He sort of classified all of the deaths of Native American folks who died by overdose in this way. In doing so, he actually found that the rate of misclassification of suicide looks to be about 28 percent in Minnesota. So, the possible misclassification of suicide for Native American populations in Minnesota is about 28 percent for overdose death.

And that seems important and also relevant to some of the work that we've seen come out of emergency departments and reviews that suggest that the rate of opioid overdose death misclassification is somewhere between 20-30 percent, and so certainly psychological autopsies, which really seek to gather more information about the decedent and all the circumstances surrounding their death, can sometimes challenge the manner of death classification by the coroners or medical examiners, are certainly important tools in understanding that misclassification issue.

[Gisela Rots]: That is super helpful. Thank you for having that at your fingertips, Kristen. There's also a question and, Kristen, Alex, I'm not sure which one of you might be the best to answer this question, but we've gotten a couple of questions around HIPAA and whether HIPAA is a barrier to building a more clear picture of the intersection of opioid abuse and suicide. Alex, I'm wondering if that might be up your alley.

[Alex Crosby]: There are some places in which HIPAA may be involved with public health surveillance data. Oftentimes, especially in response to health departments, there are some, I guess I want to call it exceptions that health departments can collect information about that for the use in developing prevention or intervention activities. So, there are some places in which certain organizations, especially state or local health departments, can collect information about individuals when they need that information to develop programs. There may be some restrictions on HIPAA, especially individuals trying to get other individuals' information, but there are some ways in which you can work with that.

There are also opportunities, you know, whether that's working with hospitals or working with inpatient or emergency department data, in which the hospitals may be able to share aggregate data, in which they take off personal identifiers, but put together some of the information that may be related to risk factors or mechanisms that were used or even in some cases substances that were used, but there's no personal identifiers on its. So, there are ways in which data can be shared. It's often times a matter of working with those organizations, finding out what their comfort is. Sometimes you do have to work through some of their office of general council, but there are ways in which some of that data can be shared. Again, what is the purpose of it? Are we trying to work towards intervention and trying to prevent these adverse conditions occurring in the community?

[Gisela Rots]: Great. Thanks so much for that, Alex. That was super helpful, and Kristen, I think I'm going to launch probably the final question that we can take today to you, which is kind of a follow-up question really. You know, I imagine in a lot of our communities or even kind of smaller regions, counties, we might be looking at relatively small numbers of overdose and suicide, and especially then when we try to get down to identifying specific populations that this is impacting, we can get some really small numbers, and there are some best practices and guidance around not reporting, I guess I would call it surveillance data, on too small a number. Could you say a word or two about some of the ways that, as an epidemiologist, some of the best practices you might lay out for folks to be thinking about?

[Kristen Quinlan]: Yeah, absolutely. That's a great question. So, I guess as you were speaking, I was thinking about small numbers in Montana, for example. In Montana, their state suicide prevention person at the state level has actually trained himself to be a coroner, and he reviews all of the death certificates that were suicides and kind of does his own psychological autopsy, and they can do that because the Ns are small, but those small Ns mean there's identifiers. There's accidental identifiers.

So, the release of information can actually lead you to be able to inadvertently identify a person. And this is a problem in small communities, those very rural communities. It's a problem for tribal populations. One of the reasons why, in some cases, tribal communities are a little concerned about having their data shared, because those small Ns lead to accidental identifiers.

So, there's some nice, you know, best practices when it comes to dealing with small Ns. I'm calling them small Ns—small numbers of folks. I think, first of all you need to consider the use of data that includes small Ns. So, it's very hard to interpret trend data and things like that if your N is, in fact, too small. So, you want to think about whether or not your N is even appropriate for analysis.

You also want to think about the way in which you break down your data. So, when you're breaking down your data, if breaking it down by race/ethnicity, for example, leads you to a too small N, think about working it back up and not breaking it down according to certain characteristics that might lead to unintentional identifiers.

When you're doing your data agreements with different groups, when you're working with your partners, you want to think about kind of setting those specifications up front, so you and your partners have a sense of at which point you're going to suppress the data, so you're not going to kind of report it out on, so that way those inadvertent identifiers are not available.

And so, those are some of the best practices with regard to small Ns. I also think that when we talk about what small Ns can be used for, they are useful when we're thinking about psychological autopsies, when we're thinking about systems that folks have touched, when we're thinking about quality improvement. So, really dealing with, you know, you've got a small N, it's important to dig if you have access to individually identifiable data, not for sharing purposes, but for understanding where in the system folks are touching possible places for intervention.

[Gisela Rots]: That's a lot to think about, but thank you, and I think that that also kind of highlights for us again, making sure that we are addressing the appropriate public health problems in our own communities. So, thank you so much for that.

And looking at the time, I see that we really need to wrap-up. So I'm going to zip through our summary and encourage folks to ask any other follow-up questions. If we didn't get to your question, we promise we have it logged and we will do some follow-up.

But just to summarize kind of where we've been today. Suicide and opioid abuse and overdose rates have grown over the past decade. The relationship between these health problems is complex and much is still unknown because that data is limited, which Kristen just kind of reemphasized for us. Collaboration is key and including efforts to address shared risk factors is incredibly important, and we want to just make sure that we're thinking appropriately about collaborating with the appropriate entities and making sure that we are really thinking strategically about that.

So, with that I really appreciate everyone hanging in there with us today. We know there is a lot of material, but I would like to hand it back over to Dr. Richard McKeon.

[Richard McKeon]: Thank you. So, again, I just want to underscore that there are resources that are available to you currently from the CAPT, and you can see them in front of you on addressing opioid overdose and working to reduce the flow of prescribed opiates and preventing prescription drug misuse. All of those can be quite valuable.

As well as from the SPRC, including those that assist in terms of suicide prevention in American Indian and Alaskan Native settings. And one that you see pictured in front of you, we mentioned the importance of emergency departments. This is on caring for adult patients with suicide risk.

And from our partners at the Office for the U.S. Surgeon General and the Action Alliance and at the CDC the *National Strategy for Suicide Prevention* and CDC's *Preventing Suicide: A Technical Package of Policies, Programs, and Practices*, which provides support for a comprehensive approach to suicide prevention, which is what is likely needed for us to reduce suicide in states and communities across the country.

And let me just mention one other thing in terms of the important overlap between these issues. It's important to be aware that they are similar, not only in terms of the behavior that's involved. I mean someone who takes an overdose, the exact same behavior, whether it is intentional or nonintentional, but also sometimes in the emotions that underlie it and that these are deaths and injuries that have as underlying them despair. And the Nobel Prize-winning Princeton Economists Case and Deaton have written about what they call the "Deaths of Despair" and their increase in the U.S.—opioid overdoses, suicides, alcohol-involved liver disease. And so there are some very important connections for us to be aware of and to continue to work together into the future. So, we'll look forward to being able to engage with you around that. I would now like to turn it over to my colleague Dr. Carol McHale to close this out.

[Carol McHale]: Thank you, Richard and thank you everyone. Thank you again to our presenters today: Alex Crosby, Kristen Quinlan, and Gisela Rots, and thank you participants for joining us today to explore these important intersections of opioid abuse, overdose, and suicide. This concludes our SAMHSA webinar event for today.