REALTIME FILE

West Virginia University – Center for Excellence in Disabilities
THE EPIDEMIOLOGY OF INJURY AND
SCIENCE OF INJURY PREVENTION
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>> Dr. Robert Bossarte: Our mission is fairly broad. We support a lot of research, about 50% of our annual budget is dedicated to funding original research and the rest is used to support education, outreach and training, which I should put in there. It also supports administrative core which is not listed here when we are offsite. So it pays our rent as well.

For those of you who have never had the opportunity to come by the ICRC, I invite you to visit us. I have an immersion opportunity I want to make sure everybody is aware of that I'll talk about later on for students or even interested faculty, happening towards the end of the summer.

We're driven by a community partner model. We really focus heavily on transaction findings. Now translation or implementation science, two areas of significant interest. First thing you see in all Injury Control Research Centers, required to have an outreach core to support translation of original research to implement practices within the community.

As a CDC-funded organization or group, we are very interested in community-based programs and implementation of evidence-based programs. That said, we work a lot with partners within the community. Most of our work consisted with [Indiscernible] focused on having an impact within the community and having an impact on [Indiscernible] which we'll talk about as well.

So very quickly, I thought I would go through a couple of quick definitions, talk a lot about the burden of injury in the United States and why we do this. I'll talk a little bit about some of our bigger priority areas, suicide, epidemiologic overdose -- like many people in West Virginia, that's an intense focus for us. A lot of work going on in this area -- intimate partner violence, falls, traumatic brain injury, of course a priority for CDC as well as most centers, and motor vehicle crash. Those are the big ones for us. We also have occupation and environmental health but less. So these are the majority for us.

Very quickly, this is sort of CDC's model, for those of you who are public healthy, you've seen this before. I think it has specific interest and purpose for us. We really try to think about work along this continuum. Thinking about the best way that we can find, thinking about how we can improve surveillance or data to inform risk and protective factors.

I would like to say quickly, I am not a huge fan of the risk and protector factor model. I don't think it's necessarily gotten us where it should. I work on a couple of projects which I hope are a bit of a paradigm shift there where we move a little bit away from [Indiscernible] protective factors as an early stage activity and think about it more as a later stage activity, perhaps as we develop and test provision strategies as a component of that, not necessarily as the means for targeting particular populations; of course ensuring widespread adoption.

At the Injury Center we're involved with all of these from the question of injury data and analysis, and thinking about modifiable characteristics or process that could be targeted to reduce rates of injury, the development in evaluation of new prevention strategies and our outreach for working with our community partners [Indiscernible] to ensure widespread adoption. So that's in a simplistic way our conceptual framework though obviously the specific activities are going to be a little more complicated.

There is a lot of uncertainty and lack of clarity sometimes when we talk about injury. People say, I don't think of overdose as an injury. How is that an injury? How did suicide find its way into injury? Why aren't we just talking about falls and motor vehicle crashes? Our definition is injury that's anything external. So external mortality or morbidity defined as injury according to the CDC and therefore becomes part of our mission. So opioid overdose is part of external and therefore one of our priority areas.

We've traditionally focused on seven different forms of injury. I'll just go to them quickly. Suicide overdose [Verbal reading indiscernible] We have entered a new phase to begin targeting more purposely or more limited number of priorities. We've identified those partly based on our strings but also on what we see as a particular burden in Virginia and Appalachian region where we might have an opportunity to make a unique contribution. We define those as drug abuse/overdose poisoning, suicide and child abuse/neglect which is new for us, still part of offer development as we begin to explore opportunities for focus on childhood adversity, in particular, though our report is child hood abuse/neglect, and where we might have strategic collaboration.

Those of you familiar with the work done at the University of Pittsburgh might know about the Allegheny County data repository and the data project they have there. They've been using that to look at characteristics associated with increased risk for childhood adversity and to inform the provision strategies and activities. We've been having some conversations with some of the faculty from Pitt about [Indiscernible], thinking as well about those programs specifically for childhood [Indiscernible] and preventive services meant to reduce adverse outcomes associated with childhood adversity.

I'd like to tell you [Indiscernible: Speaking too fast], announced this year as the three

areas of focus for the National Center for Injury Prevention and Control which is our funding group within the Centers for Disease Control and Prevention. So we overlap priorities although, as you've heard, our portfolio in some of these areas continues to develop.

This is a leading cause of death in the United States. For 2015 -- the 2016 data is out but they haven't released this yet, not that I could find. It doesn't change very much from year to year. The blue, green, and red are specifically injury categories. They're meant to illustrate the overwhelming burden of injury or mortality particularly among younger adults or children, younger adults in the United States, where unintentional injury is the leading cause of death between essentially 1 and 45. And suicide is a particular contributor to middle age mortality. Adolescence, you know, between 15 and 24, but a lot of discussion about suicide increased among middle age populations over the past decade.

And you can see people 35 to 44 suicide is the fourth leading cause of death [Indiscernible: Speaking too fast]. It's a particular concern and focus for us. In case you're wondering, overdose falls within the unintentional mortality group or injury group. So it's included as a cause of death there, highlighted.

We don't really have any programs right now that focus specifically on homicide. West Virginia's homicide rate is not disproportionate to the rest of the nation really, although suicide and opioid overdose rate are significantly higher, though obviously overdose the rate is highest in the country but for suicide we also have the 10th highest rate in the country, which for East Coast makes us unusual.

This is a much more colorful figure which gives different categories of unintentional injury. What it demonstrates, you look at the number one row there, where unintentional injury was the leading cause of death between pretty much 1 and 45. You now see that while it is unintentional injury, the specific mechanism shifts from drowning among younger adults, not something that's particularly high here in West Virginia, to unintentional poisoning, overdose. Among the middle age adults. You can see different categories, unintentional fire or gun injuries have a particular burden among younger adults.

>> [Inaudible Off-mic]

>> Dr. Robert Bossarte: A little bit of an understanding of variability within that category. There are a number of different ways research could go when looking at the -- some of these different causes of death. Falls, though, are an area of particular concern here in West Virginia, particularly for adults in our state which is disproportionate.

This particular figure, which looks like it was just developed around Christmas time, showed homicide and suicide, red and green. You can see the suicide is a much larger contributor to mortality among adolescence and adults where firearms are particular, homicide, end up a larger contributor among younger children.

Overall, the number of people who die by suicide is markedly greater than the number of people who died by homicide each year, although obviously when you're younger, less mortality overall, intentional -- other [Indiscernible] or other inflicted violence is a larger contributor among younger persons.

And then just quickly, this non-fatal injury, data provided by the CDC. You can see that falls are a leading cause. Also falls have secondly such as TBI, motor vehicle accidents. This data from 2015. I would suspect that the poisoning rates have gone up for 2016 once those data are available. The rates have gone up.

Why do we care? Because we're reducing morbidity and fatality but also it was a pretty significant cost. 2/3 of costs comes from non-fatal. So that's true for almost every

category of injury that we've talked about, although obviously the case fatality rates for different forms of violence or injury, different mechanisms, play a factor in that. About $214 billion a year, from 2013 data but still fairly consistent, for fatal injury and $457 billion for non-fatal injury.

If you look at fatal injuries by themselves, you've got suicide which costs about $50.8 billion, homicide $26.4 billion, unintentional injuries, $129.7 billion. Unintentional again would include opioid overdose, motor vehicle accidents, and those called undetermined.

Non-fatal injuries, falls are the major contributor. It's kind of reflected in the earlier chart we looked at when it showed that falls were a leading cause of non-fatal injury across the age groups, particularly among young adolescence and adulthood and then the other categories, 1.3%. And then transportation-related injuries, 21.4%. Obviously there's a bigger burden financially in terms of the human cost because there are more [Indiscernible: Speaking too fast] but the breakdown is very different.

I thought I'd talk a little about suicide. I'm a suicide researcher. It's pretty much all I do. The majority if not all of my work is in suicide prevention and analysis of data and [Indiscernible: Speaking too fast] surveillance systems or in using data for targeting at-risk populations.

Suicide is now typically the cause of death. I've mentioned that, for all ages in the United States. In 2016, the data just came out, just over 44,000, almost 45,000, suicides in the United States. The rate is now 13.42 and continues to increase. We've seen increases of suicide in the United States since 2008. And overall the largest increases have been about people in middle age; although there have been some groups identified as having disproportionate increases, particularly 10 to 14-year-old girls, middle age women most recently identified as having significant increases. And there is the longstanding at-risk population of older white men, particularly those living in rural areas.

There was a space issue on the next, I apologize. But West Virginia, 362 suicides in 2016 and West Virginia, you can see, 19.8 per 100,000, significantly higher than the rest of the country. That's kind of unusual for an East Coast state. Suicide is traditionally seen as a Rocky Mountain phenomenon. Overwhelmingly rates of suicide are highest in the Rocky Mountain region with Colorado, Utah, Washington, usually very high rates, Alaska the highest rates in the country. The Dakotas, Idaho, New Mexico has high rates. So for West Virginia to show up in the top 10 or even the top 15 is pretty unusual. If I recall correctly, we're the only state in the East Coast within the top 15.

An interesting anecdote, and I don't include the data, there have been some pretty significant increases in the rate of suicide in West Virginia since 2012 which is interesting because it also marks a time of pretty rapid increase in the rate of overdose mortality in the state of West Virginia.

Some of you may be thinking did that have anything to do with the opioid crisis. Answer obviously is maybe. It's more than likely not misclassified overdoses where -- meaning it's probably not that overdoses were inadvertently called suicides. It's much more likely, and some of the work of Dr. Rocket here, quantified that it's -- the degree that it's much more likely that suicides were called overdoses eighth overdoses called suicides [Indiscernible: Speaking too fast]. There's something happening concurrently in the trends. Certainly gets back to unique characteristics in West Virginia. Some of the socioeconomic and environmental factors in West Virginia that may have been related equally to both of these adverse outcomes.

I would like to say about the work we've been doing here at the Injury Center,

recently it's been trying to understand what's going on with these seemingly independent phenomena but almost certainly related outcomes. If you think about all three that I mentioned with childhood adversity, suicide, and opioid overdose, a fair commonality approached by public health professionals [Indiscernible: Speaking too fast] common risk factors, protective factors, things that these three different categories of outcomes may share. But there's a different way of thinking about it. There's a different way of thinking about it that was advanced for some time by the CDC though they don't focus on this as much. [Indiscernible: Speaking too fast] driven by common, social, environmental factors that have synergy between them.

So it's not as in the opioid crisis in West Virginia is happening in isolation from the conditions and factors, increased risk for suicide. In fact, we're beginning to understand much more that the populations at risk for suicide frequently are populations who are also at risk for overdose [Indiscernible: Speaking too fast] opioids and [Indiscernible: Speaking too fast]. So we know [Indiscernible: Speaking too fast] independent events, begin to think about how there may be synergy between these two different phenomenon and how we may address them to quantify where there's overlap. More importantly, perhaps, how we think about implementing programs designed to interrupt that synergy first but reduce rates by considering the fact that developing implementing a program designed to target a specific outcome without consideration of those other factors contributing to the likelihood of that outcome but may appear to be something else unrelated order unlikely to be successful.

I offer as a data point to support that the Department of Veterans Affairs recently released a report looking at rates of suicide last year among patients within the healthcare system. In that report they broke down the suicide by psychiatric diagnosis or disorders. And, of course, those are associated with [Indiscernible: Speaking too fast] risk of suicide. But they looked at the rate of suicide among persons with opioid use disorder. What they found was that the rate of suicide among persons diagnosed with opioid use disorder exceeded rates of suicide for every other psychiatric diagnostic group including major depression and schizophrenia which were typically associated with the highest rates of suicide.

So we know that there's reason to look there. We were beginning to have a better understanding where to look but our work in that area certainly continues to be [Indiscernible: Speaking too fast] by what we're doing now [Indiscernible: Speaking too fast] help us think about how we can address it. The cost, as we talked about before, is fairly significant, $51 billion, combined medical and work costs associated with the suicide each year.

Suicide by mechanism, it's a complicated thing. Firearms account for 50% of mortality. Veterans stated it was nearly 2/3. You can't think about doing something about [Indiscernible: Speaking too fast] without thinking about how we tackle this very complicated problem of access to firearms.

It's been a challenge. Researchers are -- at least considerations that are supported around firearm suicide or that involve firearms. Certainly needs to be thoughtful. As this graph demonstrates, if you're thinking about a way [Indiscernible: Speaking too fast] for the rate of suicide, you're thinking about where do you get the biggest return for an effective program, finding a way to do something about firearms suicide is going to be where you start. Particularly when [Indiscernible: Speaking too fast] strategy [Indiscernible: Speaking too fast] is controlling access. It's been successful in the U.K. where they restricted access to [Indiscernible: Speaking too fast]. It's been successful in China where they restricted access to pesticides, where suicide by pesticide was common. And certain certainly there have been

things such as barriers to bridges to reduce rates of suicide by jumping.

So firearms presents its own particular political challenge. [Indiscernible: Speaking too fast] around increasing understanding and compliance with safe storage practices. Generally considered to be a short amount of time. Available data suggests a short amount of time between when a person decides suicide and that death. So the thinking is if we can give people a momentary time to think, even if it's as little as 10, 15 minutes, there's a chance you may interrupt that death by suicide.

So restoring firearms or removing firearms from the home of someone in crisis is where the field is trying to move now by working in collaboration with gun shop owners and the firearm industry to promote what are already existing accepted standards for storing and using firearms in supported suicide prevention.

Here's a really long, complicated slide that says non-fatal suicide thoughts and behavior. Pretty prevalent, much more than he would like to acknowledge. The data point, estimated 9.3 million adults are reported having suicidal thoughts in the past year. Often these are associated with depression but not exclusively so. The percentage of adults having serious thoughts about suicide was highest among adults age 18 to 25. Generally speaking, there's an inverse relationship between the number of suicide attempts in a population and death. Adolescents, there's a ratio of suicide attempts, number of people who attempted suicide, 20 to 1. It's about 4-1 in older adults. Part of that is function to access of firearms. You can see the rest of the data points. I wouldn't go through them. But they talk about how prevalent it is.

One thing worth keeping in mind is that the fourth one down, adults who made a suicide plan, age 18 to 25, we focused on that a lot because there's imminent risk. Though obviously suicide attempt is much higher. An estimated -- much closer to [Indiscernible: Speaking too fast] but much less prevalent, about .6% of the population estimated attempted suicide in the past year compared to about those reported making plans but not making suicide attempts. So you see it's a fairly low prevalent thing though a burden is higher typically among older adults than that would indicate.

Probably don't have to tell about the importance of doing something about overdose. I'm sure you know the United States has an epidemic, although, frankly, I would debate that as there were probably more listed crisis than an epidemic. Either data suggests and what we're seeing may not be as much of an epidemic as much as it is a crisis related to the availability of more [Indiscernible: Speaking too fast]. But some of these data points are -- obviously affects all people, all ages. More than three of five drug deaths involved an opioid. You can hear -- many of you probably know this information very well. The overdose deaths from opioids [Indiscernible: Speaking too fast] since 1999. And overdoses have killed more than 28,000 people in 2014.

And those numbers continue to go up. Between 2015 and 2016, West Virginia rate of opioid overdose increased by over 25%. We were already leading the nation. We're now over 50 for 100,000 through.

The green line on top [Indiscernible: Speaking too fast] for 2000 to 2014 [Indiscernible: Speaking too fast] 100,000 population. So you can see it's going up. [Indiscernible: Speaking too fast]

You can see the blue line there in the middle. It's blue. Kind of aqua. [Indiscernible: Speaking too fast] heroin has taken off since 2010. West Virginia -- 2014. I apologize. It's not updated. Nothing much has changed other than the numbers have gotten bigger. West Virginia stands out in the rate of opioid overdose among the rest of the states in the United States.

Here's some West Virginia specific data for you. It's useful to reflect on how it may be similar or dissimilar from the U.S. trend. Overall increase from 2001 to 2012. The rate of overall overdoses, all substances, decrease a little bit. 2012 is also when the [Indiscernible: Speaking too fast] was implemented or the changes of [Indiscernible: Speaking too fast] implemented here in West Virginia. You see a decrease.

What is perhaps more troubling is an increase in heroin and [Indiscernible: Speaking too fast]-related overdoses and certainly the comment I made about the potency of the substance used, heroin and fentanyl can be more potent than prescription opioids and there are carry a higher fatality risk associated with use or misuse. So exactly what's driving the changes and whether it's an increasing population at risk or increasing lethality of the substance being used as opposed to something that merits further consideration and something we're looking at here where some of our work, both independent and some work along with Samson.

Just another slide to really demonstrate taking data from the international survey on drug use now showing that the overdose death is kind of spiking not just for us but for the nation and the percentage change among these groups. Clearly it demonstrates 18 to 25-year-olds, 109% increase, and 26 or older is where a lot of the change is occurring. Non-Hispanic white, obviously there's been a focus on increased morbidity and mortality from overdose in rural areas. A pattern we also see along the suicide risk.

Intimate partner violence is an area we do a fair amount of work in. Describe the work group as an international collaboration, using data to look at intimate partner violence. It's something that West Virginia also has a higher -- well, comparatively higher rate of intimate partner violence including murder followed by suicide where West Virginia's rate last time was roughly twice as high as would be expected based on national data. It's very prevalent, estimated 31.5% of adult women have been victims. [Indiscernible: Speaking too fast] an estimated 22.3% of women have experienced at least one active, severe violence by intimate partner during their lifetime.

So it's prevalent. It affects all age groups. Although as this first slide shows by category, forced sexual intercourse, stalking or physical violence, the age of first victimization varies by type of violence with forced sexual intercourse, overwhelmingly occurring before the age of 18, stalking, and intimate partner violence respectively occurring more frequently as -- with stalking more heavily within the 18 to 24 [Indiscernible: Speaking too fast] age groups and intimate partner violence more likely to occur during the years of 18 to 24.

I would like to point out some of the work supported by the ICRC also looked at sexual violence perpetrated against males where there's also violence and victimization, putting aside for a moment reciprocal violence or [Indiscernible: Speaking too fast] so maybe by directional. There was also male victimization. Roughly but not really age-based patterns here. I guess the important part of this slide is there are age-based differences and the type of violence. Although very importantly, the characteristics of sexual violence are very different [Indiscernible: Speaking too fast]. Again, looking at opportunities for prevention, focusing on people younger than 24 years of age, particularly among men where both men and women have a higher prevalence of first experience with intimate partner violence.

Falls are a particular concern for West Virginia. Not only because of the morbidity and mortality associated with falls but because of the unique characteristics of West Virginia, fact that we are aging as a state in a way that's disproportionate with national trends.

The problems of falls are the fall themselves, of course, but the secondary injuries

such as traumatic brain injury. It's highly prevalent, more than 2.8 million older adults treated for falls. Over 800,000 each year treated for hip injuries. I'm sorry, for head injury or hip injury. More than 95% of hip fractures are caused by falling, almost always by falling side way. And falls are the most common cause of traumatic brain injury. The pattern you see of a lot of injuries, falling once doubles your chance of another fall.

I put a graph in. Similar to what you saw with overdoses, you see rates of unintentional fall death among older adults increasing dramatically since 2005. Those increases have continued.

If we look at all forms of injury-related mortality in West Virginia, falls have the greatest growth in rates over the past five years. While it's not specifically one of our top three priority areas right now, it is an area that remains a focus and concentration for us. The challenge for us has been simply people who are willing to work in this area. [Indiscernible] Jones [Indiscernible: Speaking too fast] investigator and has done a tremendous amount of work for the Injury Center for the State of West Virginia in this area. But we don't have a lot of other people who are interested. So if anyone listening is interested and would like to discuss potential research projects in this area, we welcome those conversations.

This is a fall-related mortality rate for everyone, all ages in West Virginia between is the `99 and 2014. It shows pretty clearly that it's increasing. Just [Indiscernible: Speaking too fast] in 1999 to just over 14, 15, by 2014. If you switch back to older adults, this being age 65 years and older, you can see it's gone from under 35, the -- I think 33.6, to just under 75 per 100,000. So it's more than doubled in the past 15 years. That trend is expected to continue. The 2015 and 2016 data again showed increases. In the fall-related mortality rate among older adults in West Virginia.

Motor vehicle crash, can't start this conversation without existing [Indiscernible: Speaking too fast]. Motor vehicle crash. In contrast to other adverse outcomes, motor vehicle crash rates have been decreasing in the United States over the past decade which is why for us right now it's a secondary priority although we have seen some increases in motor vehicle crash and are some particular characteristics of motor vehicle injuries in West Virginia and other rural areas that are unique such as [Indiscernible]-related injuries which [Indiscernible] used to study here. [Indiscernible: Speaking too fast]

What's interesting is they haven't fallen as much as they have in other high-income countries [Indiscernible: Speaking too fast] U.S. crash deaths fell by 31% depend -- in 2013. They fell about 56% in 19 other comparison countries, other similar high-income, developed countries.

In the last bullet, 18,000 lives could be saved if U.S. crash deaths equaled that of the average of the other 19 high-income countries, meaning we could do better.

The cost is high, in direct medical costs. They are largely preventable. Major risk factor [Indiscernible: Speaking too fast], car seats, booster seats contributed to over 9,500 crash deaths. And driving while impaired or drunk driving with 10,000 crash deaths. Then of course, driving impaired while using other substances coming out of states who have legalized marijuana, the impact [Indiscernible: Speaking too fast]. And then, of course, excess speeding which is a [Indiscernible: Speaking too fast] risk factor.

The last area I'll touch on before talking about research for a couple of minutes is traumatic brain injury. Estimated 1.7 million people sustain the TBI annually. Any of you who have heard about [Indiscernible] probably knows a lot about TBIs or long-term consequences, even if [Indiscernible] is not clear or the criteria we use to define TBI are still under debate. The

consequences of TBI are not. Out of the 1.365 million people sustain a TBI [Indiscernible: Speaking too fast] nearly 1.4 million are treated and released from the emergency department. So we know that the individual and social cost of TBI is high, contributing factor to a third of all injury-related deaths in the United States. About 75% TBIs are concussions on other forms of mild traumatic brain injury.

So there's now evidence that it's repeated assaults to the brain associated with the increase for severe outcomes rather than major [Indiscernible: Speaking too fast]. Costs are high. In every age-group TBI rates are higher for males than females. [Indiscernible: Speaking too fast] just evolution. Males age 0 to 4 have the highest rates of TBI-related injuries, deaths. I thought I would leave some stuff there.

So the five minutes I think I have left to talk I thought I would go over our bigger projects to give you an idea what we're doing. We're currently preparing our submission for the fall for our next five years of funding. 56% of our budget will go -- or roughly $430,000 a year will go to support the research [Indiscernible: Speaking too fast]. If anyone has an interest in any of these topics or interested in collaboration of these topics, please reach out to me. I'd be happy to talk to you.

In addition to the research projects as part of our funding we will also, if successfully funded again, have exploratory research program which will give smaller awards to internal or some external partners. Those do not have to be announced as part of the proposal but will be determined each year as we move forward. [Indiscernible: Speaking too fast]

Some of the major activities we've been working on over the past several years are overdose prevention, obviously. The center is working on [Indiscernible] distribution. [Indiscernible] who joined us last year is continuing that line of work as well as expanding her work with developmentally support for [Indiscernible] programs including [Indiscernible] distribution [Indiscernible: Speaking too fast].

One of our Ph.D. students [Indiscernible], is wrapping up her dissertation, working on data that was [Indiscernible: Speaking too fast] using data for six countries who have administered nationally [Indiscernible: Speaking too fast] surveys on data on marital violence and looking at predictors of marital violence. [Indiscernible: Speaking too fast] suicide risk.

We're doing a fair amount of work in this area. This is our foray into machine learning, predictive analytics, using large clinical and social environmental data to reduce risk for suicide. The idea behind these initiatives are to develop risks stratified or population level stratifiers. So that instead of identifying people based on risk factors, we identify people based on their predictive risks for and then work to identify modifiable factors where we [Indiscernible: Speaking too fast] to reduce risks once the person has been identified.

This started with something called the U.S. Army Stars project, which is a large Department of Defense-funded suicide prevention research project continued by the Department of Veterans Affairs. The Department of Veterans Affairs is currently -- has over the past year implemented an outreach intervention strategy based on predictive risk. So what is happening now among their roughly 6 million people who [Indiscernible: Speaking too fast] each month every patient in that system has a suicide risk calculated.

And for anyone who falls within the top tier predicted risk, an intervention is initiated, including [Indiscernible: Speaking too fast] case review [Indiscernible: Speaking too fast], some safety planning, discussion of firearm access within the home, and strategies for [Indiscernible: Speaking too fast] when the person is in crisis, and just other ways of letting the individual know services are available [Indiscernible: Speaking too fast] care and communication.

That has not yet been adopted by other health systems that I'm aware of though interested in that work is continuing.

We are working with the Department of Veterans Affairs [Indiscernible: Speaking too fast] as well as working with the Uniformed Services University of Health Sciences which happens to be a home to the stars project, comparable work not necessarily predictive analytics for suicide prevention but other works that looks for risk of suicide among military populations with the idea of transporting those projects to academic settings including here at West Virginia University where we're proposing a new project in line with these two.

Fall prevention among older adults, the work has been critical [Indiscernible: Speaking too fast] in that area. Characteristics and prediction of opioid overdose. The very same way we're looking at how to identify people at risk as well as -- without waiting for those risk factors to be identified or emerge. We're working with [Indiscernible] data, [Indiscernible: Speaking too fast] extraordinary large patient population and they link all of their data to mortality data so you not only have information on the cause of death but you have information on the clinical characteristics for how long they've been in that system that could be used to generate the predictive [Indiscernible].

And this is actually the dissertation topic of another one of our students welcoming in support of that program [Indiscernible: Speaking too fast].

And then the development and implementation of toolkits [Indiscernible: Speaking too fast]. This work is being done by one of our affiliates, a specialist in health communication, look at development in evaluation. The toolkit, media and communications toolkit, working with communities to implement and evaluate [Indiscernible: Speaking too fast] media and education campaigns using the available evidence from the fields of health communications, communication in general with a little [Indiscernible] thrown in. We look at the long-term or short-term effects of these sorts of public education and mass media strategies.

That is it. Those are my slides. Happy to answer any questions if anybody has any.

>> Can you hear me?

>> Dr. Robert Bossarte: Yes.

>> Ok. I was on mute a couple of times. So I had to make sure.

I unmuted everyone else's phones. So if you do have a question, feel free to go ahead and state your questions.

While people are thinking about their questions, obviously the traumatic brain injury area is a direct -- you know, one area where the two centers overlap. So I think -- I appreciate you noting that. I think maybe setting down to discuss the different approaches, that particular program, we just finished with the webinar. There's a federal and a state side. And the federal application has just come out. So there's an opportunity there to incorporate partnerships as well, as your cycle of funding for the ICRC. So that would be good.

>> Dr. Robert Bossarte: That would be great. That's an area where we are developing. I wouldn't say it's one of our investigators strength. So an area where collaboration would be a particular benefit.

>> Ok. That would be great. And, of course, you mentioned a lot about opioid and that's a huge issue for our state. I think we are developing, and I'll follow up with you about this, we're developing a panel discussion. I know another one is coming up during the festival of ideas, the week of that. So our Director of the AUCD is coming in for a visit and we're trying to get a panel event to discuss about opioid use among individuals with disabilities. You might have seen a comment period go out from NIH about that. We think maybe grants are coming out

afterwards. So to get that conversation started might be good.

And I'll follow up with you to see if would have an interest or availability there.

>> Dr. Robert Bossarte: Absolutely.

>> Great. I appreciate that.

We'll just pull you in all kinds of different areas.

>> Dr. Robert Bossarte: I'm headed to DC next week. The ICRCs are sponsoring a congressional briefing which I'm sure will be attended by any number of staffers, not necessarily our representatives but specifically on this topic and how the Injury Centers are contributing to the solution to the opioid crisis. So I'd be happy to sit down with you as well before I go to let you know what we're covering and maybe even what some of the other centers are doing. As the sort of Injury Center collective week, not really trying to find opportunities to support our [Indiscernible] collaboration but if we can help foster collaboration [Indiscernible] who may have work going on well with what may not be our strength, happy to make those connections as well.

>> Thank you. Likewise. Likewise.

Ok. Anyone have any other questions?

[No Audible Response]

I know there's been several chats for me about whether this is being taped so that they could review it and consider it in a deeper level. So I appreciate your time. It is nice. The first of many steps to get the two centers working together. So thank you very much.

>> Dr. Robert Bossarte: Thank you for the opportunity.

>> All right. Take care.

>> Dr. Robert Bossarte: You, too.

>> Thanks.

Bye-bye.