Please stand by for realtime captions. >> First of all , I have no financial disclosures. And I would just go briefly over the learning objectives for the entire review session. These are the ones that fit my talk the best. This should help you interact with patients and professional colleagues to display professionalism . I will let you be the rest. There is practice lead regulation and ethical practice . This may help you identify them of your patient's feelings and attitudes that help us understand how they are approaching the therapeutic process. And finally, we will reflect on the role of some very specific behavioral interventions for patients and families so that we can help them along in the communities. >> First I will talk about can't in prevention of which there are many. I will focus on Mary, secondary, and tertiary prevention as well as some arenas of prevention. Talk very specifically about overdose prevention with Naloxone and prevention of blood-borne infections, particularly for those injecting drugs. And finally, opioid maintenance prevention in multiple areas will be part of it. I work for the department of health and currently and have been for many years a prescriber of methadone and/or even offering. Let's think about goals of prevention. I want to practice by saying we'll talk about primary, secondary, tertiary prevention and we will look at the definition and you to think about the definition because , depending on what we are trying to present, certain interventions may fit into primary, secondary, tertiary. So think about what we are trying to prevent certainly we try to prevent totality . We try to reduce transmission of blood-borne viruses. In particular it is hepatitis C and HIV. We want to preserve and improve the general health and well-being of the patients we are seeing we want to reduce drug related crime and reduce or cease drug use. I see the final one as a pathway to the first four in so many ways. >> Primary prevention aims to prevent disease or injury before it even occurs. We do that by preventing disease or injury before it occurs in increasing resistance to disease or injury should exposure occur. We will talk about some ways, perhaps, of preventing drug use and we'll talk about ways of preventing HIV or hepatitis C from occurring in the first place and I think in a very timely way, this would be where vaccination fits and we have a lot of vaccination going in the country right now. The public policy document of prevention suggests that we as clinicians and addiction medicine really need to participate in preventing addiction and substance use disorders. So one of their items is to acquire to institute evidence informed prevention education and standards. That's a lot harder said than done in many ways. We will focus on talking about early adolescent here and prevention education based on social competence and influence. I'm fond of this document from the United Nations office on drugs and crime. They have looked at drug use prevention techniques and rate them according to how much they seem to help. There's a lot of prevention out there, a lot of activities called prevention that do not necessarily help at all. Some of it may be harmful. They started in 2015 and updated in 2018. I hope they will continue to update this document. >> This is what they found. Some characteristics deemed to be associated with efficacy and/or effectiveness include the following. There's interactive method rather than straight lecture. It is generally delivered through a series of structured session, sometimes once a week but often booster sessions over the years as people get older and your perspective change pick we need them to be done by trained facilitators which certainly can include trained peers. They should provide an

opportunity to practice a learner wide array of personal and social skills. Should impact the perceptions of risks associated with substance use , emphasizing immediate consequences. With adolescence , they don't think about what they will happen when they are 30 pick they think about what will happen to them next week. We will dispel misconceptions regarding the normative nature and expectations linked to substance use. They may be in a small circle where there's a lot of substance use going on they realize that that is not necessarily the norm for their entire group even the entire school. It's changing to realize they do not need to do everything their peers might be doing in order to have friends and socially. Some things that have been found to be associated with a lack of efficacy or effectiveness or even with adverse effects include , as we mentioned, they should be interactive, lecturing straight ahead without any interaction is not found to be helpful. Just giving information in lectures or handouts, particularly trying to make people afraid , they have to own opinions already and I think some of you may know that that can be found to be a bit laughable. It should be structured dialogue sessions. There is a lot of focus on building self-esteem and emotional education. But we also need to talk about the information and the drugs as much as possible. >> It should not address only ethical or moral decisions but should address people's everyday life. Finally, while X drug users can be trained as educators , but using testimonials about what horrible things drugs data that is not found to be effective either. So think about these things as you approach your schools, as some of you are perhaps in family medicine and approach the adolescent that you are seeing. Do dumb of the document. It is great.

Secondary prevention aims to reduce the impact of a disease or injury that has already occurred. We do that by detecting and treating disease as soon as possible to halt or slow its progression, encourage personal strategies to prevent reinjury or recurrence , and implementing programs to return people to their original health and function to prevent long-term problems. That is where our screening and referral for sepsis disorders comes in when we are working in primary care , emergency settings, et cetera. And that is where overdose prevention with Naloxone access can come in , it can come in at multiple levels because people that I haven't would've so not going to be able to be returned to their original health and function.

Finally tertiary prevention aims to soften the impact of an ongoing illness or injury that has lasting effects. Here we are talking a lot about substance use disorders and addiction which is very often a long-term, chronic condition. So we help people manage the long-term and sometimes very complex health problems and injuries that can come with substance disorders in order to improve their lives as much as possible, their ability to function, and equality and quantity of life. This is where long-term maintenance medications for addiction treatment comes in. And I would particularly emphasize here that the continuing care that we need to give to people, even if they continue to use opioid use cocaine or drink of the hall , that we need to keep in in care because we can improve both the quality and quantity of their lives even if they have an ongoing issue with substance use. >> This is a really nice framework that the Association of State and territorial health organizations put together concepts. Things move around a little bit in the ways of looking

at prevention. Keep that in mind. On the bottom level, we see environmental controls and social determinants. We want to reduce access to the addictive substances, promote protective factors so everything from age restrictions on who can buy alcohol or increasingly cannabis these days too much broader interventions like preventing adverse childhood events. We want , taxation can reduce particularly alcohol and cigarettes and probably we will see marijuana but also something that we do like looking at the prescription drug monitoring program and being very careful of how we prescribe controlled substance since. That we get to the secondary level of chronic disease screening and management where we are treating or diagnosing our senses disorders and addictions. In order to do this very effectively, we need to contingency to understand how to remove stigma which has been quite difficult but it does happen and we need to think about , for many people, addiction is a chronic, long-term condition. Finally on the tertiary level here, they are talking about preventing acute health events such as overdoses and driving while intoxicated and preventing blood-borne diseases. You we have syringe needle exchange programs, other access, Naloxone , and ignition interlock so that when people are drinking, they are not able to start the cars. >> I will end this section with a look from the World Health Organization prevention of hepatitis C. Primary prevention , I put in bold items that are really important for us in this world of addiction medicine, provision of comprehensive production services to people who are injecting including those with high risk for hepatitis C so they need sterile injecting equipment and not just syringes but the other equipment that they use. And of course, there's effective treatment of dependence that reduces or stops the injection or at least makes it safer.

Secondary prevention for people with hepatitis C includes immunization with hepatitis A and B vaccines to prevent further liver damage, early and appropriate of the antiviral medications we have for hepatitis literacy which are so easy and straight forward now that we should all be involved in that. And then there's regular monitoring for early diagnosis of liver disease. >> Looking at some of the other arenas of prevention, environmental or primordial pension looks a bit like primary prevention . It minimizes future hazards to health and the establishment factors to increase the risk of substance use and substance use disorders pick some include reducing the number of liquor outlets, raising the cost of tobacco, allowing purchase of clean syringes, and economic and social equality. >> Supply reduction, we have heard a lot about this and I will add to that a negative trio with harm reduction as well. Supply reduction includes preventing , stopping, disrupting the supply of these substances we are talking about some of the illegal drug and some legal ones including tobacco and alcohol. We see age restrictions here , we see prevention , stuffing, disruption of supply such as coming across the border or shutting down . And then there's limiting density of licensed retailers and venues . Currently alcohol , tobacco, and soon cannabis will enter that realm in more states. >> Demand reduction , reducing the idea that people want the substances , so we know that delaying the onset of use can have long-term impact in reducing demand. Reducing misuse of them in the community and supporting people to recover from dependence through evidence informed treatment , again, we see taxes here, substance use treatment is key in demand reduction, and addressing the underlying determinants of substance use disorders which is not limited to but

includes the adverse childhood events and adverse social and economic circuit dentist. >> Harm reduction, I think reduction is my title. So that is a place I've been working on for many years. Reducing the adverse health, social, and economic consequences of the use of drugs for the user, their families, and the wider community, so this includes again, a range of things , depending on which substances we are talking about. We have smoke-free areas which has been a huge change in the last few decades in this country. There's responsible venue operation. If you do have of our , making sure that you are not serving people to the point that they are unable to get home safely with the rest of the community, hepatitis B vaccination is a form of harm reduction for those people that continue to expose or be exposed to the potential of hepatitis B, and will talk a little bit more about syringe access and naloxone access as we go along. Harm reduction principles is really a set of practical strategies by which harm related to illicit drug use is reduced. First we recognize that drug use is extremely common. Second, we include a full spectrum of strategies from safer use to abstinence . Harm reduction is not the opposite of abstinence. There are many people in the world of harm reduction who have chosen as the best way they can reduce harm. It is not the opposite. Low threshold is very key. We need to have people able to access the drug treatment , the syringes, whatever is needed without having to jump through a lot of hoops. That just keeps people from entering these areas. And will talk more about that with opioid maintenance treatment. And the goal is a longer and healthier life, it is godless of drug use. Harm reduction very much includes the people being served in making the decision. It is about people's right to healthcare and human rights in general despite their activity in use of drugs. >> Now I will turn to the prevention of overdose. Here we see some kinds of naloxone you have been seeing. The one on the rights, the one is a brand name and it's perhaps the most commonly used around the country right now pick one of the left, the little files with the needle is still used by many many syringe exchange programs around the country and despite the fact it is low-dose, it has been highly effective at preventing overdose even in a defensible. Of course we all aware of what has been going on with overdoses. Early on, we had rice prescription opioids and then you get to level off and we had raises in overdose so now , as you probably well know, we have a tremendous increase in synthetic opioid, basically fentanyl and its analogues that has continued to go up to the pandemic. We had a record number of evidences in 2020 and those statistics are just getting to come out typically have a lot of work to do. What are some strategies to address overdose?

Here I put in bold the ones that actually have strength behind them. Not to say the other ones are not good ideas that we know increasing access to naloxone reduces deaths from overdose. We know expansion of opioid agonist treatment reduces overdose. We hope the good Samaritan laws, making it easier for people to call for help should they witnessed overdose help , prescription monitoring programs, they seem to have reduced the prescription drug overdoses in many places . But unfortunately, that has been totally overshadowed by the illicit drug overdoses. Prescription drug take back events may be helpful and we hope the safe opioid prescribing education that many of us require to take his helpful. Naloxone is, of course, a prescription opioid antagonist that rapidly reverses overdose related sedation and respiratory depression. It

may cause withdrawal. People don't really like to receive a lump sum. People that are having overdose will wake up minutes after ministration. It works very quickly. It is, it feels like a miracle drug when you're using it. It will displace the opioids from their scepters for 30 to 90 minutes which is usually enough time to prevent an overdose from occurring but we still ask people to get help despite the fact that they have reversed and overdose. It has no pleasant psychological effects. Is much hated by people that are dependent on opioids. It has no other effects. It will not be. If they have no opiates on board and if it's not an overdose that is causing a consciousness , normally done as long as one is still calling for help. I would like to add that we are constantly reading the newspapers that this new fentanyl does not respond to naloxone. If it is an opioid, a response. And for the most part, while people are afraid and getting more and more doses of the lock so, for the most part, those doses included the basic kits are sufficient to reverse overdoses even from fentanyl. Willing to remember the point of thoughts and is not to make them wake up in agony. Is to make sure that everything. Hopefully they will be transported to the hospital. The training is really brief. Is started as for our trainings and all we can do it in 5 to 10 minutes depending on what the person already knows , what does the legs on do , it stops and overdose but had we recognize and overdose? We generally teach the sternal route , reputable seven down your breastbone, just so people are clear that a person is unconscious before they administer Nordson. Maybe they were just sleeping. We suggest everybody call EMS and administer naloxone if the phone is closer , call first. If naloxone is closer use of naloxone first. We teach the recovery position so if people awaken and vomit, they will not choke.

This is happening many places. Basically began at syringe exchanges. The distribution of thoughts and begin at syringe X changes. The idea that was created by people that were using opioids, well, EMS has this and maybe we should have naloxone and from there it spread to drug treatment program, police in Newark where we give naloxone to any person exiting the New York State person if they wanted upon release and pharmacies, Fort Lee now have it now and it's kind of funny pharmacies with the last ones to get it. Since we are working for many of us are working in the world of drug treatment, I want to talk a little bit about a model for naloxone use within an open rate treatment program. I have been following this study and I presented an earlier version of it last year or the year before and they continue to this really great work. So in this treatment program, they trained nearly 400 people on overdose it is so and gave them to doses naloxone can send percent study and over the course of the year 18% of these participants reported overdose reversals using it. 73 is a really high amount of use for something that is relatively inexpensive . They used it on 114 people , mostly family and friends so certainly they saved a few lives here and certainly they prevented morbidity related to overdose and if one wants to talk about people in recovery, to go out and save a life is a really wonderful thing, to tell somebody that is in drug treatment that they can save lives, to tell somebody with the person, because he lives as a secondary benefit to the distribution of naloxone. None reported using a kit on themselves or someone else using a kit on themselves. That may have happened but they are in an opioid to program which typically reduces the risk of overdose so that is probably the case but they were out there in the community

using these kits on other people. I would also say this could happen anywhere . had to use my kids both on the subway with people I did not know. Both times they were used successfully. Now pharmacies across the country are now caring locks and it certainly you can prescribe it you to your patience with the patient Pacific order. Some states are really promoting and prescribing naloxone alongside any opioid prescriptions . But seriously think about prescribing into any of your patients using opioids, whether they are prescribed or illicit. Insurance will sometimes pay for it not always. Medicare does pay for it , some Medicaid encourages paying it across the country that you can also look at the free naloxone distribution sites in some parts of the country, for example, your, Pittsburgh, Boston, many areas have distribution programs. And in pharmacies, most or all states have some mechanism of dispensing it with non-patient specific or standing order. It is called different things in different states. But every state now has a mechanism for a pharmacist to be able to supply naloxone, use the person's insurance or accept cash without having a specific prescriber on hand. >> I will show you a little of the evidence that this works . this one is about naloxone ascribing rather than distribution in a community. This study is a nonrandomized observational study essentially. They , the folks in San Francisco, they asked several clinics that were staffed by medical residents to start prescribing naloxone to people that might be at risk for overdose because they were prescribed opioids, because they are in opioid treatment program so they are thought to be using illicit opioids. What you see in the chart is the dividing line down the middle is pretty locks and prescription and it is emergency room visits and they were seeing more and more emergency room assets, most of which were related to overdose. And eight have a projected path if they have not added the prescription of naloxone , actually, that is the focus, they didn't get prescribed naloxone, but the legacy is the dramatic reduction in emergency room visits related to opioid among this group of people. Now did the people actually go and fill the prescriptions,? They did not find that book for people who are spoken to and prescribed naloxone, the likelihood of going to ER with an opioid -related visit primarily overdose was reduced and put into perspective . One naloxone prescription , 29 naloxone prescriptions would reduce one emergency related visit in the subsequent year. That has got to be highly cost-effective , emergency room visits are expensive, the study was not large enough to measure its impact on mortality but it would follow, it would have an impact on mortality as well. >> We will turn now to prevention of like when infections. I'm thinking about syringe access. You are all from any state the class the country and legal options vary by state and you can see the law Atlas referenced at the bottom and check your loss many states at syringe exchange programs. Some are opening you and. Some states are closing down existing ones. There are over-the-counter sales and pharmacies and 47 dates. But the discretion allowed or required by the pharmacist varies from state to state. We prescribed just for reducing the spread of blood-borne diseases which is backed by the American Medical Association . Think about counseling. People are surprised when you say I hope you never eject again but I want to make sure you and your friends and 11 no where to get a sterile syringe. It can be a huge icebreaker in developing and trusting relationship with somebody newly treatment with you for their use of heroin or cocaine by injection or math . Is expressing carry make sure they have information to keep them

safe sure they continue to inject drugs. We've got a lot of studies and this one is from New York City which again to do syringe exchange in 1990. And this follows the numbers are just going out in 1990. It was just a few hundred thousand. In 2002, there were 2 million searches going out and you can see what happened to the rate of HIV among people admitted to a detox program. In 1990, nearly half of all injectors were HIV-positive. It's down to about 12%, many of whom get HIV other things including sex, not to injection. You did see the incident of HIV dropping as the number of syringes go up. We can't say causing and affect for sure but there are many settings with this has been a similar correlation at Association. I would also like to say that these of switches dropped during a period of time despite the fact that we were getting syringes on the street and people turned away from injecting because they became afraid of HIV. And frankly the supply went up as well making it easier to sniff rather than inject. Hepatitis C is in all of our communities. Again, please add that to her addiction practices. This looks at what the CDC estimates is happening with hepatitis C. We get very little reported but it is estimated that there are more cases each year. We have a huge epidemic of injection related problems. I am not addressing soft tissue infections. But that has really been going up as well. We need to think about where and how outpatients potential patients are injecting . Hepatitis C is really hard to prevent. It can be any equipment. It is a lot easier [pause] it is a lot easier to prevent HIV. But in 1990, in New York City , of all the people entering the detox program that were injectors, 80% of those injecting were positive. It dropped to under 40% which is still high but that's what it looked like as we got images out and it appears from a study in Baltimore that the first, time from first injection to time if infection has gone from months to years. So we have the opportunity to prevent it not just with syringes with treatment. Now I will turn to another look at opioid maintenance treatment. I know we will have in other parts of the conference but I am thinking about it in terms of prevention. We know opioid maintenance prevents mortality. This is an older study but it's great. This is in Norway looking at a group of people applying for methadone and eventually buprenorphine treatment in Norway. 4000 subjects were followed for up to 7 years. This is the mortality per year . Not everybody could be put into much. Somewhere on a waiting list. We could see there was a 2.5% mortality each year and the vast majority of that was related to overdose. While they when she was, you can see the overdose percentage was dramatically decreased and overall mortality went down to less than 1.5% and still greater the general population but it was high. And finally, posttreatment , the mortality recurred that this is not actually significant we different from the pretreatment although it was that way but overdoses and mortality went up dramatically so we need to keep people in treatment. Another look, now this is professional pre- tran08 in Baltimore look at here notices and heroin overdoses are in the red line and you can see they were increasing up until 2000. In the bottom line, we are looking at the entry of buprenorphine in 2002 on the other dashed line is access to methadone. So as access to methadone increased and as access to buprenorphine increase, and heroin overdoses went down really dramatically. Now of course, we have fentanyl now so it's not so genetic that without these, we would be in worse shape as well. A Billy maintenance reduces infectious. Methadone maintenance in a larger the study is found to be associated with a 54% reduction in the risk of HIV

among people who inject drugs. This is huge. The Global fund and some countries required that methadone beatitude HIV prevention if they wanted funding. It makes such a difference to people who inject drugs. Buprenorphine has been around a short time but certainly shown to reduce the risk of behaviors and probably has a similar impact as methadone. And are some studies finding reductions in hepatitis C incidents among patients on methadone or buprenorphine. That is particularly if they get started before they move on to injecting. Dosing matters. This is a little bit hard to see. The reference number here is 1. So those not enrolled in opioid agonist, the risk of overdoses, excuse me, hepatitis C is 1 pick if you look at people who have a higher dose of opioid maintenance and the patient perceives it as adequate, that risk is less than 0.2 pick if they do not perceive it as adequate, the risk is 0.32. Moderate doses and lower doses is an ever increasing until people on a low dose, they do not feel as adequate, have a 1.42 odds ratio of getting hepatitis C. >> Interim buprenorphine, we have had interim opioid maintenance for a while but it has not reached much widespread use unfortunately. This is an ingenious study in Vermont where they had all these people come in that they randomize buprenorphine or no buprenorphine and it did not take. They were all using opioid pretty close to 30 days a month. Then to give the people with the buprenorphine of wheel so they could have wondrous everyday they cannot take more they cannot take less. They had no interaction. So we did not include any counseling at all. They came in at various times to have urine toxicology done and you can see that at four weeks, eight weeks, 12 weeks, the people having just buprenorphine without counseling had dramatic reductions in both urine toxicology and reported opioid use. They do not have urine toxicology for everyday. But I very much value counseling . I sent my patients to formal counseling. I believe I am trained to do counseling but it is not necessarily what we save lives with. We also know that, if people do not stop using drugs, they still are safer. So going back to Norway for a minute, this is comparing people that were on buprenorphine and methadone, these are people currently on maintenance and was never on maintenance and the people currently on maintenance had an odds ratio of half of non-overdoses . Frequency of injection dropped. Daily use of heroin dropped. They were less likely to engage in theft or drug dealing. I want to wrap up a couple of the last comments with our implementing trans-mucosal buprenorphine for treatment of opioid use to a sorter in New York State put together by the health estate agency for the treatment of opioid. We put forth that service should ensure continued access to buprenorphine even for those patients that you want counseling. We should not be discharging patients based on the use of prescribed or on prescribed substances, including but not limited to cannabis and benzodiazepines. I don't feel so comfortable to prescribe buprenorphine to people with benzodiazepine disorders going on at the FDA has stated that it is far more dangerous out there on the street with Helen and Sentinel then to be co-using these drugs . like the treatment should continue as long as the patient is benefiting. Patients very often want to stop . They should feel free to return if they do. Risk of returning to illicit opioid use is extremely high when treatment is discontinued so I hope my patients if they want to taper but they are always welcome to go back up to return . And I certainly have done it with any. Finally, public health prevention principles can be applied to preventing or delaying onset of drug use, reducing or stopping drug use, and preventing

avidity and mortality despite drug use. I know some of you come from state where insurance companies or state laws make it harder to use some of these principles. But encourage you all to think about how you can use these inner practices. I hope you will do great on this little quiz we have. Which of these measures aiming to delay the onset of alcohol use our , excuse me, measures to aiming to delay the onset of alcohol use are examples of, A, supply reduction, B, primary prevention, C, secondary prevention, D, tertiary prevention. ? >> Interesting answers. Which of the following has been documented to reduce the risk of opioid overdose? Provision of naloxone, good Samaritan laws protecting persons with an overdose and a rescuer, prescription takeback programs, or prescription monitoring programs? Which of the following is considered to be an effective way to prevent drug use? Thank you for your answers. I appreciate you listening to this session. I am looking forward to interacting with you in the chat box. >>

[event concluded] >> [Event Concluded]