WOMAN: Alright, so we are all set up, and thank you so much for your patience, and, Dr. Hayes, thank you so much for providing us today with this didactic, and here, it's all ready for you.

INSTRUCTOR: Great, and feel free to interrupt. If you have any questions, raise your hand and speak up, and I can't always see everybody, so if you raise your hand and I don't say anything, like I said, please just interrupt, so next screen. Next slide, and we're gonna be talking about office-based management, and we're gonna talk in specific about being able to interpret urine drug screen results and then strategies to recognize relapse and tools to help identify diversion, next slide.

And I think being able to understand urine drug screens is a really, really important part of being able to treat for a substance use disorder and also for chronic pain, and I think, in general, people really think that urine drug screens are far more simple than they actually are. I think urine drug screens, I have been doing tons of these. I've done tons of extra training on them and I still find them fairly complicated, and I find that people often think that they can do things that they can't, and I think, somehow, people think that people who are positive on a urine drug screen are using drugs and people who are negative are not using drugs, now, partially, that's just not true, and so you wanna have a way to confirm unexpected results, and if you have something show up on a urine drug screen you're not expecting, and that can be either way. Either they're showing up for a drug that they shouldn't be taking or they're not showing up for a drug that you think they're taking.

You wanna have a way to confirm it, and the easiest way is to walk in the room and say hey, your urine drug screen today shows cocaine, and have the patient look up at you and say oh, yeah, I used cocaine this week, and boom, you've got your answer right there. However, if they look at you and say I haven't used it this last week, I don't know why that would be, I think you really do need to send it out to the lab for more specialized testing, and never base your treatment decisions solely on urine drug screens result. Especially, never ever do it based on an in-house urine drug screen because those are so inaccurate. I have seen people go back to jail or prison. I have seen people lose custody of children based on in-house urine drug screen results, so you really need to make sure that you're doing confirmation. Always ask the patients what you'll find, and I have known some providers who really wanna catch the patient in a lie. They really think that if they know it's positive for cocaine and they walk in and say, you know, what's your urine drug screen show, and patients say oh no, I haven't used. Then you can catch them and you know something, and I prefer not to do that. I'd like to start and establish rapport where the patient feels comfortable talking about it, and
I think one of the ways is to just be upfront about what you know, so, you know, tell them your urine drug screen today is positive for methamphetamine. Do you want to tell me about that?

So next slide, and so when you're doing a urine drug screen, it helps to know what the results actually mean. So opiates will definitely include heroin and morphine. It may or may not include hydrocodone. If the patient has only taken one tablet of hydrocodone or even if they're on a fairly low dose chronically, depending on your urine drug screen and depending on what the, how much the patient is taking, it may or may not show up positive. So if I have a patient who's chronically taking hydrocodone, and I have any concerns about it, I will always send it out to the lab because I've had a lot of them show up negative in the office and then positive, and this is one, and I just said, the easiest way to confirm it is to walk in the room and say to the patient, so you turned up positive. This is one that I will often send out, even if they turn up negative or if they've acknowledged it to me because of the hydrocodone, and then the other thing is what I have, for some reason, a lot of patients think that heroin is a relapse and hydrocodone is not, and so what I find is that they will tell me yeah, I took one Lortab, and when I send it out, instead, I find that they are actually positive for heroin.

So I think it's really useful to be able to make that distinction. Some of the things that will not show up as positive on an in-house urine drug screen for opiates include oxycodone, methadone, fentanyl, and buprenorphine, and so all of these ones are ones that I have separately, well, not the fentanyl, we don't have the fentanyl, but the other ones, we all have separately on our urine drug screen so that we can look for that on the test. So and if you don't have it on your in-house drug screen, I would really encourage you to add it on.

Cocaine, cocaine is nice 'cause if you've got cocaine on your urine drug screen, it's almost always correct. False positives are unusual. I think I've had two in my entire career, so they can happen, but they're much less common than any of the other ones. Benzodiazepines, the in-house test for benzodiazepines tests for oxazepam, and so depending on what benzodiazepine your patient is taking, you may or may not be picking it up. If they are taking clonazepam, they have to be on a fairly high dose of clonazepam for it to show up positive.

Valium will normally show up, and alprazolam will usually show up. The other thing is if you have a patient on prescribed benzodiazepines, I think it's really worth sending it out for metabolites because I've been surprised at the number of people I have who claim they are, you know, just taking the clonazepam, but end up actually having multiple benzos on board. The other thing, you really wanna talk to a toxicologist about the metabolites because the benzos cross-metabolize all over the place, and it can be very easy to think that the patient is taking multiple benzos when it's just the metabolites, and I actually carry it in my phone because I can't remember them at all.

Marijuana can stay positive for 28 days in a frequent user. Oh, one more thing on the benzos before we leave that. Sertralin is very commonly causes a false positive for benzos. It's one of the more common ones I see, so remember that if you have any concerns about a patient. Marijuana can stay positive for 28 days in a frequent user. The longest I have had was 4 1/2 months. Does anyone have anyone who stayed positive for longer than that on someone who you were fairly certain had quit but was still showing up positive? So, anyway, 4 1/2 months is the longest I've seen it. I have read that it can actually
stay in the system for up to a year, especially in somebody who was very overweight and lost a lot of weight because then it becomes concentrated in the fat cells which is where it's stored, so it can take a long time to get out of the system. Amphetamines and barbiturates can cause false positives fairly commonly, especially the amphetamine. The most common one I'll see for amphetamine, does anyone know what that is likely to be? The two most common drugs that are gonna cause false positives that you're gonna see?

WOMAN: Is antihistamines one of them?

INSTRUCTOR: Close, pseudoephedrine, actually, yeah. And then does anyone know the other one? The other one you're very commonly gonna see is ranitidine or Zantac, and I've seen that one a lot. That's probably the most common false positive I've seen, and I actually take Zantac and I have these fears of being called in for a drug screen right before I start an on-call weekend and not being able to cover calls, so and then I'm gonna disagree with this slide.

This slide says that the alcohol urine screen is not recommended, and I'm gonna actually disagree with that because it's not very sensitive. It only lasts for about 18 hours, 18 to 24 hours, and so, but I find, a couple times a year, I check it every six months on my patient. It is a send-out test, and every six months or so, I'll have somebody who ends up showing up positive for alcohol who is totally denied alcohol use, and if they're showing up positive on an alcohol urine screen, you can be pretty sure that they've got a fairly significant problem because really, they have to have used within about 18 hours and probably less in order for that to be showing up positive, and for some reason, a lot of people also, just as they don't really view hydrocodone as a relapse, they also don't view alcohol as a relapse, and so they won't mention that they're drinking a six pack a day, or, you know, a quart a day, and so I find it is occasionally useful for picking up people who are very heavy drinkers who I did not realize, so next slide. And then patient stable on buprenorphine for months has the following urine drug screen result. He reports doing well on treatment and has no concern. Urine drug screen, positive for buprenorphine, positive for opiates, otherwise negative. So people wanna tell me what they think might be going on with this? Anybody?

WOMAN: Well, wouldn't he be, I mean, I would think with a positive opiate that he would've probably taken something. I mean, I don't, buprenorphine isn't going to metabolize to an opiate, correct?

INSTRUCTOR: Correct. So what are the things he could have taken?
WOMAN: Well, I would think that it could be heroin, morphine, I don't know. I don't think oxycodone goes into an opiate. Hydrocodone isn't an opiate. It doesn't go into an opiate, so I don't know. Those are the two I would go, codeine. Codeine's metabolized into, right?

INSTRUCTOR: Yeah, so hydrocodone may or may not show up as an opiate on this test, and so and this test is what's called the immunoassay test, and that's an in-house test, and a couple things, does anyone know the one non-drug thing that is likely to show up as an opiate and is actually, you can't distinguish it out because it is a true opiate. What's that?

WOMAN: Poppy seeds.

INSTRUCTOR: Poppy seeds, yes, that is correct. Now, interestingly, the, I'm blanking on the transportation organization. When they do the trucking physicals, they do drug screening, and they have their cutoffs set very high at 2,000, and at 2,000 or above, you are not gonna get a positive for poppy seeds unless you're eating like two pounds of poppy seeds, but in the medical field, we actually have our cutoff set fairly low. Ours is set at, if you look down below, where it lists the cutoff, the cutoff for opiates is at 300, and at 300 to 800, you will sometimes see poppy seeds show up as positive. I've had a few patients who I really did trust who came out positive at very low levels for opiates. So you definitely can get poppy seeds showing up positive, and then what's the one other thing this could be that you always have to keep in mind? Just a false positive. You can definitely get them that show up positive, and if you guys have the ones in your office that you're looking at, you know you, everybody in the office is kinda sitting around saying I don't know, do you see a line? I think I see a line, maybe, and it's not nearly as straightforward as you would like it to be, so the GCMS is actually a little bit more straightforward.

Next slide. Okay, so possible scenarios. I think we came up with them. Patient relapsed with an opioid such as heroin, next. Patient was prescribed opioids for a medical reason, such as cough syrup with codeine, next. Patient has a false positive from poppy seed ingestion or technical error, next, and so if patient absolutely denies having used, what I will generally do in this scenario is to send it out for confirmation, and it depends, I know providers who insist that the patient acknowledge the relapse. I encourage it, but I don't insist on it because there are definitely people who are not ready to acknowledge it, and if you insist on it, you're gonna either scare them away or get in a position where you're forced to tell them not to come back.

So I really encourage them to talk about relapses and just trying to be ready for it, expect them, and some patients will never have them. Some patients will have them fairly often, and one thing I really talk about is I try and figure out the severity of it. Was this a one time thing? And try and figure out what the trigger was, and I find the first thing you wanna sort of determine is was this something where they came across someone with heroin and that's how they ended up using or they did they actually go out looking for it because those are sort of two different scenarios, and how you are gonna address it is gonna depend on which one it is.
Then if they actually went out looking for it, figure out what the trigger was that they went out looking for it, and the two most common things, two most common reasons I see are either that patients have had a fight with their family member or that they're just feeling stressed in general, and so once you've figured out, the folks who run across it, and I have folks, I had one guy who just could not stay drug-free, and he kept every time he went to parties, which was two or three times a week, somebody would offer him heroin and use, and he kept saying well, you can't go to a party in Espanola without being offered heroin, and I personally have been going to parties in Espanola for 23 years and never been offered heroin, although I suspect I'm going to different parties than he is, but I think it's if they're somebody who's constantly running across it, you need to work with them on figuring out how are they gonna be able to avoid it, and then, on the other hand, if it's problems where they're either feeling very stressed or they're fighting with their family, you want, it's gonna be a different strategy.

You wanna get them other mains of dealing with stress, and I feel you should never fire a patient for a positive urine. If it's frequent and they're not doing follow up, it's a different thing, but for one positive, I think there's never an indication to get rid of a patient for this. You want to intensify their treatment plan. You can see them more frequently or you can have nurse visits, do more frequent urine drug screens, make sure they're following up with psychosocial supports, and then have some idea of when you're gonna refer for a higher level of care, either methadone or in-patients.

So next slide. And then this is considered confirmatory testing. Like I said, I always do it if the patient is not acknowledging the positive in the urine drug screen, and I have a very large number who do come up negative when I do the send out, and I think it's really important you don't, just because you have a positive on the in-house, don't go in assuming that the patient has used because I have had multiple patients who are in tears saying I have not used, and when I've sent it out, indeed, it came back negative, and so you don't wanna go in assuming that they've used 'cause that can be really devastating for patient, and when you talk about the urine, you never use you did this.

What you always do is you talk about the objective data. Your urine drug screen was positive for cocaine rather than you used cocaine because for one thing as I said they're not always 100%, and you're gonna feel kind of foolish if you say, you know, you used amphetamines, and then you send it out, and it's negative, but beyond that, the patient can argue with you about if you tell them you did this, whereas if you tell them this is what my urine drug screen showed, they can't argue with that, and so then you could, and I tell people I have no way of telling who's telling the truth to me and who's not, so I act based on the objective data I have, so if I need to increase treatment because of a positive urine drug screen, I'll do that, and if the patient doesn't wanna intensify treatment, just say it's standard of care. It's not a personal thing, and people are often, you know, kind of wounded that you don't trust them or whatever it is and just say no, this is how I respond on all of this, so next slide.

And so you tell the patient that the urine showed opioids. You talk to them about any prescriptions, any recent poppy seed ingestion, any recent medical procedures. So the patient continues to deny relapse,. You ask the lab to confirm the results. You check the prescription monitoring program which hopefully you'd already done before you saw them anyway. Inquire about recent triggers, and intensify treatments by increasing visit frequency, behavioral health support, and what I'll often do in a case like this for if they're absolutely, you know, denying relapse is I will send their urine out, give them a one
week prescription, and get them back in the following week, and then I have the results from the lab, and if it confirms that they did indeed have opiates in their system, at that point, I'll do the increased frequency.

So next slide. Patient has been struggling since engaging in treatment. She has had intermittent relapses with heroin and benzodiazepines. She continues to smoke marijuana daily. She is at risk of losing custody of her child. She struggles with anxiety and insomnia. Today, she presents as sedated and guarded and denies any recent drug use. Urine drug screen result shows buprenorphine and is otherwise negative. Does anyone have any ideas what might be going on here?

WOMAN: She might have used something the screen didn't pick up.

INSTRUCTOR: Okay, good call. Anything else?

WOMAN: It might not be her urine.

INSTRUCTOR: Okay, so those I think are the two most likely. So next slide. Patient is taking buprenorphine and sedation is due to a non-drug effect. Next, she's taking buprenorphine and sedation is due to use of drug not tested for on the urine drug screen such as alcohol or fentanyl, or I would include clonazepam on that one. Next slide, patient tampered with her urine since it would be unusual for a daily cannabis user to have a urine negative for cannabis. Next slide. And so people really struggle with what to do with people who are continuing to use other drugs.

WOMAN: Can I add one to that? Something else I've seen? I've had a few circumstances where the nurses had accidentally put a client's urine in the wrong client number label.

INSTRUCTOR: Ooh, ouch.

WOMAN: And so there was a tracking system in the back house and it was caught. It wasn't purposely done, but we had some errors with overworked nurses, our nurses were overworked, and those errors were happening with urines as well.

INSTRUCTOR: I've had two situations. One where we switched urine drug screens and went for what a line was positive to where no line was positive, and the urine showed up exactly opposite of what we
were anticipating, and then another one where we switched pregnancy tests and told a young woman with fairly significant mental illness who was not sexually active that she was pregnant, and she was very puzzled by that and decided it must have been angels. Called to tell her no, it was not angels. It was a screw up on our lab's part, so, but yeah, it's important to consider that that's a possibility. So if the patient is using other drugs, the research is kind of mixed about how bad is this actually, and my feeling is if they're using other drugs, even if it's not good, they're still more likely to stay heroin free if they're on the buprenorphine, most of the time, than they are if they're not on the buprenorphine.

Obviously, I would rather not having them use methamphetamine or anything else at all, but my personal feeling is I continue to treat them. Alcohol and benzos are the riskiest because of overdose use. The FDA actually recently came out with a statement, maybe a month ago, stating that even though benzos are risky, we should not be withholding medication assisted therapy because of benzos because heroin is much, much riskier with benzos than either buprenorphine or methadone.

What I do with benzos is I really try very hard to figure out if this is sort of an occasional lapse where they're using benzos, you know, Valium once a week when they get really stressed after a fight with their mother or something like that, or are they using it on a daily basis and in an out of control manner, and you can't always tell 100% for sure, but a lot of times, you can get a fair idea, in part, based on the levels, and in part, based on what the patient tells you, and alcohol can be really tricky to find out. You always want to, if they're using something else, figure out if it meets the criteria for substance use disorder. I have patients who use methamphetamine occasionally, but when I've gone through the criteria, they don't actually meet the criteria for a substance use disorder for methamphetamine.

I still discourage it, but I don't worry nearly as much about that as I do somebody who's, you know, got a severe methamphetamine disorder. You wanna maximize the psychosocial supports. A lot of times, our patients with opiate use disorder do not have very good coping mechanisms for dealing with stress, and so since they can't use heroin anymore to deal with stress, they turn to another drug, and you need to decide yourself how you're gonna approach ongoing use of other substances. Some people are quite comfortable continuing treatment. Because of that, other people don't wanna do it, and I think, I don't recommend discontinuing buprenorphine for an occasional positive urine drug screen, but ongoing use, I think that's something you need to decide whether you feel comfortable with it or not, and if you're not comfortable with it, it is perfectly reasonable to refer out for this.

Next slide. Let the patient know that you're concerned about how they're doing and aim to build rapport. You wanna intensify treatments with frequent clinic visits, mental health support, possibly an SSRI to treat the anxiety. The tampering, I think, is a really big deal, and I tell people, this is, you know, one of the things I'm just not gonna put up with, in part because I worry about diversion with tampering, and so I tell people, you know, basically, I give them one chance, and if they continue it. In a case like this where you've got a urine that's negative for everything else and positive for buprenorphine, it is very, very common for people to take a tablet of buprenorphine and put it in their urine, and so I will often send it out for metabolites at that point. You can also do a repeat urine.

You consider other testing such as oral swabs. We do the urine temperature and creatinine on everybody to make sure it is actually a urine sample. People very commonly bring in other people's
urines and we are good with urine drug screens in my clinic, and I am amazed how many people still manage to pull one over on me. My all-time favorite was the woman who brought in a urine in a ziploc baggie in her vagina because she knew she was gonna have a witness urine drug screen and had done this two or three times and was only caught when she went to do it and her hand slipped and the bag fell into the toilet, but she pulled it off several times, so next slide. Patient is stabilizing on buprenorphine. Has been adherent with recommended treatment, no concerns. Urine drug screen result, negative for all substances, including buprenorphine. What do you think is going on here?

WOMAN: They may not be taking it. Sometimes, they’ll be giving it to other people or selling it.

INSTRUCTOR: Definitely. And the other possibility? Somebody brought it up with the last patient.

WOMAN: Well, could they be metabolizing it differently, like a fast metabolizer?

INSTRUCTOR: Yes, that’s possible, and they just have very low levels.

WOMAN: I think about another lab error, or maybe it's not, this is the wrong urine.

INSTRUCTOR: Yeah, lab error, or they brought in somebody else’s urine, so next slide. Patient is diverting the buprenorphine, next. She’s run out of the buprenorphine early, next. She’s a fast metabolizer or has a dilute urine, and next. She’s tampered with the urine to hide a relapse. And it can be really, really hard to figure out which one of the above is correct. You can get some idea by asking the patient. For number three, most of the time, if you send it out, the cutoff for the GCMS is gonna be enough lower that you should at least get some buprenorphine in the urine. If they’re a fast metabolizer or dilute urine. If you’re really concerned about number three, I would get serum buprenorphine levels, and make sure that they’re taking it, and then if they’ve tampered with their urine, obviously, that’s gonna be a different story, so and of the four, the first one, if I knew that one for sure, I would definitely cut them off. The second and third, I’m just gonna work with them and figure out how to do it. Number four, you know, we’d have a long talk about tampering and why not to do that, and, you know, other ways to deal with relapse, so, but like I said, it’s not always easy to figure out which one it is.

Next slide. So as far as diversion, urine drug screens must include buprenorphine testing, and do all of you have in-house urine drug screens? Yeah, and does all of them test for buprenorphine? Yes, okay, and then, I do metabolite testing every six months on everybody, and more often if I have any concerns, and the reason metabolite testing for buprenorphine works so very well is that buprenorphine is not
water-soluble, so if you get a urine, what you're actually testing for is norbuprenorphine because that is quite water-soluble as our buprenorphine glucuronide and norbuprenorphine glucuronide.

So what you will find when you send the urine out for metabolite testing if they are taking as prescribed is they will have very low or no actual buprenorphine in their urine and very high levels of the metabolites, the norbuprenorphine, the norbupernorphine glucuronide and the buprenorphine glucuronide. Now, just to confuse things, if anybody uses LabCorp, LabCorp lumps buprenorphine and buprenorphine glucuronide together, so what you'll find is they'll have high levels of buprenorphine and high levels of norbuprenorphine, but other labs separate out those four, and if they separate out the four, you should have very low buprenorphine and high levels of the other three.

In addition, levels of naloxone if they test for it, if the patient put a subloxone tablet or film in the urine, then naloxone's gonna be sky high, and you will never get naloxone in the urine if they're taking it as prescribed, and so I find that to be a very useful test, and I will tell you, if you have not been doing metabolite testing and start doing it, when we first started doing it in the state about three, four years ago, we almost all started doing it at about the same time, and everybody found that 15 to 20% of the urines had been tampered with, had high levels of buprenorphine and no metabolites, and it was really quite devastating, 'cause often it was patients you thought were doing very well. So don't be surprised, don't feel like you're a bad doctor which is what we were all convinced of if you find that there's a large number of your patients who are actually tampering with their urines.

The random visits with pill counts for stable patients. I must admit I don't do this just because transportation and communication are such an issue for my patients, at least, you know, 15% of my patients do not have reliable phones and at least 1/4 cannot make it into the clinic without substantial warning ahead of time, so I've not done that. I think it's a really good idea, but I just find it a little complex to actually get it done, and obviously, we wanna be checking the prescription monitoring program regularly. Next. So use of non-prescribed buprenorphine is often to self-treat withdrawal. As compared to, say, someone who's diverting oxycodone or hydrocodone where it's very often being used in a very dangerous way, this is frequently used just the way we would prescribe it in clinic. I've had patients who've maintained for months on buprenorphine that they've bought off the street and actually are doing quite well and drug-free on it.

The risk of diversion may actually increase as patients stabilize and they self-taper the medication and start selling it, so educate the patients up front about the importance of not diverting it. It is in our agreement and I tell people this is one of the few things that will get them kicked off the program without a chance to get back on, and you know, I go over it with them once a year, and you do have to stop prescribing if you have strong evidence of diversion, and I have patients, I had one patient who was, I'm fairly certain, taking her medication, but then she was also selling some of it and got arrested for selling it. I stopped the medication at that point, and she relapsed and has done very poorly, and it's very frustrating because I think she was doing well on the meds, but obviously, I can't continue on somebody who is diverting, so next slide.

And then so back to the case. Ask the lab to run the quantitative testing. Like I said, the in-house, the levels are much higher than the ones you can get if you send it out for GCMS testing. Check the urine
creatinine and see if it does look like a dilute specimen. Call the patient back in for random pill count. Discuss the results with patients. Ask them what they show. Confirm they are taking the buprenorphine as prescribed, and if the patient no-shows to the random call back, I would have a really high suspicion for diversion at that point. Next slide.