Live webinar recorded November 28, 2018

Opioid Use in Older Adults: The Double-Edged Sword

Transcript

Jennifer Inker: Good afternoon, and welcome to today's live event. We're so pleased you can join us today. I am Jenny Inker, Gerontologist and Joint Program Director of the Assisted Living Administration Specialty Area at Virginia Commonwealth University, Department of Gerontology, and also your host and moderator for today's webinar.

This afternoon, we are very proud to begin our seventh series on the Mental Health and Aging Training Initiative which brings together the geriatric mental health planning partnership in collaboration with the VCU Department of Gerontology and the Riverside's Center for Excellence in Aging and Lifelong Health.

The series has been funded by a grant from the Virginia Center On Aging and we are most grateful for their continued support. This initiative has produced a library of 18 webinars which have attracted close to 4,700 attendees to date. As a reminder, all of our webinars are archived and all resources and materials are available for review and download for free.

A couple of housekeeping items before we begin, we kindly ask that you help us out in continuing this free offering by taking five minutes to complete the demographic survey which we shall send to you by email. Certificates of attendance for today's webinar will be made available one week after the event. To receive your certificate, you will need to complete the exit survey which should pop up following your exit from the webinar and which we'll also repeat by email.

Today's interactive webinar titled Opioid Use in Older Adults: the Double-edged Sword, we'll address the timely topic and we'll feature to presenters from the Virginia Commonwealth University. Dr. Ericka Crouse is Associate Professor in the Department of Pharmacotherapy and Outcome Sciences at VCU School of Pharmacy. Dr. Crouse received her PharmD degree at the University of Florida, then completed the Geriatrics Pharmacy residency at the Durham Veteran's Affairs Medical Center in North Carolina and a Psychiatry Pharmacy residency at VCU Health.

She practiced as a clinical pharmacist on the inpatient psychiatry unit at VCU Health for 12 years prior to transitioning to a faculty member. Dr. Crouse continues to practice at VCU Health where she rounds on the inpatient geriatric psychiatry team and practices at the MOTIVATE Substance Use Disorders Clinic. She currently serves as a Secretary for the Board of the College of Psychiatric and Neurologic Pharmacists Organization.

Dr. Laura Morgan is currently Associate Professor in the Department of Pharmacotherapy and Outcome Science at VCU Medical College of Virginia. She is Director of the Foundations of Pharmacy Practice Laboratory courses and works as a clinical pharmacist in the Palliative Care Clinic at VCU Health. Dr. Morgan is interested in the management of chronic non-malignant pain and cancer-related pain. She has published in the areas of pharmacy education, chronic pain management, and opioid overdose prevention.

Our webinar today will begin with presentations by Dr. Crouse and Dr. Morgan which will be followed by a question and answer period. To submit your questions, please use the questions tab on the control panel on your screen. Do feel free to submit your questions at any time throughout the presentation. Following the presentations, I will share your questions with the panelists and we will address as many as possible in the time remaining.

Without further ado, I will now ask Dr. Morgan to begin her presentation.

Laura Morgan: All right, thank you very much for the introduction. Can you see my screen?

Ericka Crouse: Yes, thank you.

Laura Morgan: Awesome. Well, thank you for joining us this afternoon. We're going to be starting with a question to get to know the audience a little bit. I always like to know who I'm talking with. If you don't mind answering the poll, in which area do you primarily practice: Hospital practice, long-term care, outpatient specialty, outpatient internal medicine or family medicine, or another practice.

And if you fall into the other practice category, if you wouldn't mind typing them to the question and comment box and kind of explain what that other area is so that we have a feel for who is listening to us today.

Jennifer Inker: Thanks, Dr. Morgan. So, as Dr. Morgan just said, go ahead and take this opportunity to answer the questions presented to you. Which do you work in? Do you primarily practice in a hospital setting, in a long-term care setting, in an outpatient specialty setting, in outpatient internal or family medicine setting, or some other setting that isn't listed? And if you want to tell us what that setting is in the chat box, then we'll be able to read that back to the presenters in just a moment. I see some answers coming in. Go ahead and feel free to let us know who you are.

Ericka Crouse: We have 84% voted, so we still wait for a few more.

Jennifer Inker: A few more will come in. If you haven't taken your opportunity to vote, absolutely do so now and let us know who you are.

Ericka Crouse: Okay, we shall be closing this soon.

Jennifer Inker: All right. What we've learned from this poll ... Thank you so much for participating ... is that 5% of you are working in a hospital setting. 25% of you are work in a long-term care setting. 9% in outpatient specialty. 2% in an outpatient internal family medicine setting. And a whopping 59% of you, the majority, are working in some other settings.

Let's see what we've got here. We have public health students. We have somebody working in a health and wellness programs for older adults, in a regulatory setting. We have a social worker here. Somebody working in a low-income senior community setting. Let's see, what else do we have? Case manager for individuals with acquired brain injuries. Somebody working in the state governments, in adult day center. And we have some students here too, some more students. Area agency on aging. More local governments. Someone working in a geriatric prison. Somebody working for a local public health department.

Let's see, what else we might have missed here? Somebody working in geriatric care management. Somebody working for adult protective services. Another participant working in a quality improvement organization. These are really varied. Yeah, we have some instructors here. Another person working in affordable housing. A pharmacist working for Medicare Quality Improvement Organization. And somebody who works in vocational rehabilitation, so very varied, other category.

Laura Morgan: Wow, interesting.

Jennifer Inker: Dr. Morgan, back to you.

Laura Morgan: Thank you very much. Interesting group. Some of our objectives for this afternoon, we're going to talk about physiological changes in older adults and how they impact choices of opioid therapy and selecting an appropriate opioid for older adults, and then describe opioid misuse and management of opioid use disorder in older adults.

I want to start with this disclaimer about managing pain. When possible, chronic non-cancer related pain in older adults should be managed by nonpharmacologic methods in combination with non-opioid analgesics. As we will discuss, there are some challenges in managing chronic pain in older adults with our typical agents.

What we have listed here are our common medication groups that we use to treat pain and some of the challenges that go along with that in patients who are older. We know that acetaminophen is often a first-line analgesic. But as far as its efficacy, we have some mixed results as far as how effective acetaminophen actually is for managing different types of pain. And we do know that it can be very toxic to the liver especially in higher doses, so that often limits our amounts that can be given of acetaminophen and to be able to get enough pain relief.

NSAIDs or our anti-inflammatory drugs as a category have a lot of toxicities including GI toxicity and scars caused in ulcers, renal toxicity so they can worsen our kidney function, and certainly cardiovascular toxicity. They've been linked to increase cardiovascular events like heart attack. We know that ... We'll talk a little bit about the changes ... with normal aging for these different organ systems, then these toxicities can be amplified.

Topical agents like lidocaine patches or creams and ointments are often less effective in older adults. We know that topical agents are less effective due to skin changes. With age, the skin becomes less hydrated and the epidermal layer thins. But absorption of topical medications are affected by this decreased hydration, the thinning of the tissue, and the surface lipids on the skin. The decreased lipid layer makes it more difficult for transdermal medications to penetrate. And because a lot of our patches like our lidocaine patch are designed for gradual absorption and rely on the intact well-hydrated skin with adequate circulation, they can inhibit the absorption of the drug which would lead to variable treatment effects. They may not be as effective in our older patients because of these skin changes.

Some of our adjuvant therapies like our tricyclic antidepressants, again because of toxicities, they are not recommended for older adults because of cardiovascular as well as CNS toxicities. Well, the SNRIs, the serotonin-norepinephrine reuptake inhibitors, are a reasonable option. Even in older adults, we do have to keep an eye on renal function because they do require renal dose adjustment and they also can't be used in severe liver disease.

The antiepileptics are also, as a category, a reasonable option. But again, many of these have to be dosed based on renal function. And they do often have a lot of side effects that can cause cognitive impairment, dizziness and drowsiness, so we have to be careful with increased risk of falls. And certainly, muscle relaxants should not be used because of the increased risk of falls which can lead to fractures and disability.

And then as you see, there is limited evidence in the literature to guide management of pain in older adults because they are often excluded from clinical trials due to comorbid conditions such as cognitive impairment, gait disorders, kidney, lung and cardiovascular disease. These are often exclusion criteria for our clinical trials, so what we often find is there aren't very many older adults who have been enrolled in these studies.

What do we do if moderate to severe pain persists? Opioids do remain a treatment option when non-opioid analgesics or non-pharmacologic therapies don't provide adequate relief

where there are contraindications, reason that we can't use those types of medications. But we do have to keep in mind age-related changes and our kinetics and pharmacodynamics that can make older adults more susceptible to adverse events of opioids.

When we look at our Medicare Part D claims data for 2017, you see that there's a large amount of spending on opioids for this group. Many are using opioids. We see that nearly 1 in 3 three have received at least one prescription opioid, and 1 in 10 are receiving them chronically. They're taking opioids for three or more months out of that year.

And you'll notice that we do see somewhat of a decrease in spending on opioids in 2017, but it's still over $3 billion. And what was noted in this report from the Centers for Medicare and Medicaid Services is that this decreased spending is more driven by lower prices of the medications themselves than by lower prescribing rates. So, a lot of our older adults are receiving opioids. Now, we're going to talk about how the physiological changes with normal aging, about how the body handles medications including opioids. We're going to go through this by these different systems that we have listed here.

We'll start with the GI tract. We know that with normal aging, there is delayed gastric emptying and reduced peristalsis which helps to move things through the GI tract as well as reduce blood flow. What this means is there's not much difference in the drug absorption as far as clinical effects, but what we do see is an increased risk of our side effects, especially opioid-related gut motility disturbance. Because opioids bind to those receptors in the gut, they cause a slower transit time and our older adults already have a slow transit time just as part of normal aging. This binding also increases water reabsorption, so we see a lot more problems with constipation in our older adults because of these changes.

Now, we'll move to the liver. What we see is a decrease in hepatic blood flow which causes a reduced first-pass metabolism. Just to explain a little bit about what first-pass metabolism is, this is whenever the liver metabolizes the drug that is absorbed from the gut through the hepatic portal vein circulation. The greater the first-pass effect, the lower the bioavailability of the drug, so the less percent of the drug actually gets into the system.

Now, this only applies if the drug is given orally. If you give a drug orally, it goes down into the gut and gets absorbed through the stomach, through the portal vein system and the liver kind of chops it up, metabolizes at that first pass. Then if there's a medication such as morphine that has a high first-pass metabolism has a low bioavailability typically. But with this reduced first-pass metabolism that we see because of the decreased blood flow, then you're going to end up with higher concentrations of morphine than you would have otherwise expected.

This is in contrast to medications like methadone and oxycodone. They have a low first-pass metabolism. The change in hepatic blood flow has a little impact on bioavailability because they were being metabolized to a great extent to begin with.

We also see a reduction in liver mass and the function of the liver cells which also affects our metabolism. You can see that our phase I metabolism, the oxidative reactions that are done by our cytochrome P450 enzymes and our MAO phase I enzymes are reduced, which means longer half-life for the drugs. The drugs are going to be circulating in the bloodstream longer than they would otherwise.

Whereas our phase II metabolism, the conjugation and glucuronidation is usually preserved. Something like morphine is glucuronidated as well as hydromorphone that also goes through phase II metabolism rather than going through the cytochrome P450 enzyme, so this is going to be a more predictable half-life for these medications. But it is difficult to predict the precise effect in a given individual as far as these changes in the liver metabolism.

When we look at changes in renal excretion, so keep in mind that all opioids are metabolized in the liver and eliminated by the kidney. With our changes with normal aging for a kidney function, we have a reduced blood flow to the kidneys which reduces our glomerular filtration rate and reduces tubular secretion. What we see here is a reduced excretion of the drugs and their metabolites. This can lead to accumulation and prolonged effects, so again, the drugs are going to be circulating for longer than what we see in our younger adults.

There's also change in volume distribution. With normal aging, there's decreased body water and an increased body fat. And our clinical consequences for this mean that we're going to have a reduced distribution of water-soluble drugs like morphine while our lipid-soluble drugs are going to have a longer effective half-life, so things like fentanyl that's more lipid soluble. It's going to hang around for longer.

We also have a lower concentration of plasma proteins which means an increased free fraction for highly protein-bound drugs, but this is not as clinically significant and usually is just a temporary interaction. Once everything is back to homeostasis, then you don't really have to worry about that change.

And then lastly, there are pharmacodynamic changes. We have a decrease in our receptor density but an increase in affinity. What this means is that our older patients are going to have an increased sensitivity to both the therapeutic effects of these medications as well as their side effects. We will see greater side effects in efficacy at lower doses.

When we think about what this means in initiating opioid therapy. It's the old start low and go slow. Talk to the patient about what opioids they may have used in the past for dental procedures or if they've had surgeries. Talk to them about what worked, what didn't work, what kind of response they had, what kind of side effects they had and that can guide the initial choice. They can give you some affirmation about, I took this particular medication and it really knocked me out, or it may be itchy, then it can kind of help you narrow down in making that initial choice.

And then think about starting at a lower than what your typical adult dose is, maybe 25% to 50%. And if you're using short-acting agents, then having an extended interval. So, instead of dosing every four hours which might be typical for these agents, consider it in every six hours or maybe even every eight hours because we know these physiological changes are going to make our drugs hang around for longer and there may be more of the drug in the circulation.

Definitely keep in mind side effects. And all of these side effects are going to be seen in anyone who's on a chronic opioid. CNS effects like dizziness and drowsiness, increase the incidence of falls and fractures. This is especially important when initiating therapy or on increasing the dose. Usually, patients do become tolerant to these types of effects after two or three days but we always talk to them about certainly not driving before they know how they're going to be affected or if it's possible that they are not alone for those first few days that they're taking an opioid so that someone can help them getting in and out of the shower, the tub and those kinds of things.

It can also affect cognitive function. But usually once they stabilize on a dose, then their cognitive function should go back to normal. If it does not, then they are probably on too high of a dose and would need to go back for a checkup and maybe decrease the dose of the medication. And again, this is especially seen whenever initiating therapy or increasing the dose. With constipation, it's very important to be proactive. Make sure that patients are on a bowel regimen. Make sure they have something like Senna, that they have other types of laxatives like osmotic laxative and rescue type of agent as well.

For long-term use, opioids do cause hormonal suppression which can cause decreases in testosterone levels. And decreased testosterone long-term can lead to osteoporosis as well as just loss of muscle tone which is going to increase risk of falls, decreased energy, all of those things. This is something that should be regularly monitored if you have someone who needs to be on chronic opioid therapy. We should be checking their testosterone levels for men so that if it's getting too low, we can consider supplement therapy if we can't stop the opioid. And then lastly, urinary retention is common with opioid therapy and can certainly be worsened for patients who have enlarged prostate.

We have another question for our audience about what is your go-to opioid for an older patient with chronic pain. For those of you who are in a position to recommend or prescribe, or for those of you who might not be in that position but what do you see that's commonly prescribed for older patients with chronic pain. Our choices here are hydromorphone, morphine, oxycodone, fentanyl or whatever their insurance will pay for.

Jennifer Inker: Thanks, Dr. Morgan. Go ahead and take your opportunity to choose which of these in your experience is a go-to opioid for a patient with chronic pain. You have your choices there: hydromorphone, morphine, oxycodone, fentanyl, or whatever medication the insurance will pay for. And once you voted, don't forget: you can ask questions at any time during the presentation by entering your question in the chat box and we will take questions at the end. And just as soon as everybody has voted, then we'll report the results of this poll.

Again, we're polling on your go-to opioid for a patient with chronic pain. And if you're not a prescriber, you might comment on what you've seen prescribed for people that you work with. All right, and our results are in. And it looks like oxycodone at 47% is the most common go-to opioid for a patient with chronic pain followed by 33% whatever their insurance will pay for. And we have 10% use the hydromorphone as the most common go-to opioid medication for somebody with chronic pain. Fentanyl at 5% and following up at the end, morphine at 4%. Back to you, Dr. Morgan.

Laura Morgan: Great, thank you. Well, I'm happy to see those numbers because we're next going to talk about what the preferred agents are versus our more cautious choices you might choose but have to keep some things in mind. When choosing an appropriate opioid for an older patient, oxycodone, hydromorphone and fentanyl are our preferred agents. Oxycodone because of its flexibility in dosing is very commonly used. As I mentioned before, it doesn't have a high first-pass. It gets a pretty predictable concentration of oxycodone from patient to patient. It does have metabolites that accumulate but these are considered safer metabolites than other agents like our morphine which has more toxic metabolites that are renally eliminated.

Hydromorphone is preferred in renal disease. It does have inactive metabolite, so even with accumulation in renal disease, these tend to not cause side effects or increased sedation or things like that. And fentanyl is better tolerated than oxycodone in general when it comes to side effects and is often preferred in renal and/or hepatic disease. But we have to keep in mind that fentanyl should not be used in patients who are opioid naïve.

As far as our cautious choices, morphine is a cautious choice because it does have active and toxic metabolites that are renally eliminated. If you have a patient who has some renal impairment, then you may see increased risk of side effects related to the morphine. And methadone has its own characteristics. It has a lot of drug-drug interactions because it is a substrate for our cytochrome P450 enzyme system as well as P-glycoprotein. It already has an extended half-life that exceeds the duration of analgesia, so you can see a lot of accumulation. It also causes potential for arrhythmia by prolonging our QT interval. And it does sequester in fat tissue. What we know with normal aging, we tend to have more fat tissue and less water, so that can cause accumulation and even more prolonged action of the methadone, so that's why it's not preferred.

Let's talk about some less frequently used opioids but that may have some special characteristics that would make them good for our older adults. The first we're going to discuss is levorphanol. It's often compared to methadone because it works in a similar way. It not only works on our mu-opioid receptors but also is an NMDA receptor antagonist just like methadone and inhibits reuptake of serotonin norepinephrine, although to a lesser extent than methadone.

But some advantages that it has, it doesn't have the cardiac toxicity that methadone has. It does not go through our cytochrome P450 metabolism and it's not a P-glycoprotein substrates, so it avoids those types of drug-drug interactions. It does still have a half-life that's longer than duration of analgesia. It's usually dosed 1 mg or 2 mg every six to eight hours as the typical dosing. And it does have a proven efficacy in neuropathic pain as well as other types of general pain syndromes.

And next one that you can also use for pain that you may not see as frequently is the buprenorphine transdermal. And buprenorphine is unique and that it is a partial agonist antagonist. It does have a very high affinity for the opioid receptor binding that can make it really hard to displace even with naloxone, so you would have to be careful. If someone overdosed on buprenorphine, they would need a lot of naloxone in order to bump off the buprenorphine from those receptors. It's very lipophilic with a long half-life. And the transdermal formulation which is what's approved for pain management only has to be changed every seven days. And we do have some evidence to show it is beneficial for osteoarthritis as well as low back pain.

Buprenorphine is believed to have a better safety profile compared with other opioids and tends to be associated with less nausea, vomiting, and constipation probably because it is given as a patch which avoids the direct contact with the GI tract. But it also avoids some of those peaks and troughs that we see with the kinetics of our other agents that are given three or four times a day because this is something that's given and changed every week.

And the last agent is tapentadol, which is often compared to tramadol because it also access ...

Laura Morgan: Compared to Tramadol because it also acts as a mu opiod receptor agonist and a norepinephrine reuptake inhibitor. Compared to Tramadol it's not a prodrug, so it doesn't rely on that cytochrome P450 system in order to convert it to its active form. It doesn't prolong QT and it doesn't effect serotonin. It strictly acts on norepinephrine, which makes it good for neuropathic pain in addition to osteoarthritis and low back pain. It doesn't have any major drug-drug interactions or active metabolites. The metabolism is glucuronidation, which is the one that tends to be preserved even for folks who have some liver dysfunction. It is a substrate for one of the cytochrome P450 enzyme 2C9 and 2C19, but this tends to be the enzyme that has fewer drug-drug interactions than something like R3A4. It does seem to have an improved side effect profile when compare to Oxycodone for both GI side effects and central nervous system side effects.

Which of those have you seen prescribed for older adults with pain? Have you seen Buprenorphine transdermal, Levorphanol, or Tapentadol prescribed? Maybe one of those or tow of those or maybe all of those.

Jennifer Inker: All right, so Dr. Morgan is inviting you once again to participate in a poll. Which of the following have you seen prescribed for older patients with pain? Have you seen Buprenorphine transdermal? Levorphanol, I'm having to practice my pronunciations here Dr. Morgan, Tapentadol, two of the above medications, or perhaps none of the above medications? Here's your opportunity to let Dr. Morgan know what you see in your current practice and while we're waiting for people to respond to the poll Dr. Morgan, we had one

question you might be able to handle right now, which is could you please explain what opiod naïve means?

Laura Morgan: A patient is considered opiod naïve if they have not taken at least 60 milligrams of morphine for at least seven days.

Jennifer Inker: Wonderful, thank you. I hope that answers our listener's question. It's a great question. I encourage you to also continue. We see questions coming in to the question box now. We'll save the majority of these for the end, but if you do have a question don't be shy. Chances are if you want to know then many others will want to know the answer too.

All right and we have the results of our poll. None of the above the majority answer at 55%. Buprenorphine transdermal at 18%, followed by Levorphanol at 11%, two of the above medications at 10%, and bringing up the rear at 6% we have Tapentadol.

Laura Morgan: Okay.

Jennifer Inker: Back to you Dr. Morgan.

Laura Morgan: Great, thank you. These are truly still lesser used opioids, but as we discussed, they may have some advantages that we could be prescribing them more often.

Just as a reminder, we should always be educating patients about safe opiod use, talking with them about secure storage of their opioids to reduce the risk of diversion. We talk to our patients about getting something like a lockbox that they can store their opioids in. We talk to them about who they live with, who comes to visit, who's kind of in and out of the house, who knows what medications they're on, if there's any concern for risk of diversion by those friends or family members or folks coming in and out of where they live and how they can make sure that they keep things safe.

From a provider perspective, consider periodic urine drug screening to monitor adherence to therapy, to make sure that what you see in their urine drug screen is what's being prescribed. Then certainly frequent contact via phone or email or with clinic check ups to assess for and manage side effects that they might be having as well as for effectiveness, therapeutic effects as well.

Lastly I wanted to bring to your attention some policies that the Centers for Medicare, Medicaid Services are going to make effective January 1, 2019. They are going to be limiting new prescriptions for opioids to a seven day supply for opioid naïve patients. The way they are describing opioid naïve is patients who have not filled an opioid prescription in the past 60 days. This will stop a pharmacy from processing a prescription for more than seven day supply until an override is entered or authorized. They are also going to add an opioid care coordination alert so when the pharmacist is filling a medication that has a patient who's taking a cumulative milligrams of morphine equivalence per day of 90 or more, then it will require the pharmacist to stop and call the prescriber to confirm a medical need for opioids at this level.

They are also going to be able to implement something called a patient specific point of sale claim edit. What this means is they are going to be able to individualize limits of frequently abused drugs that may be dispensed to a specific patient. This limitation could be a restriction on all frequently abused drugs, or to specific drugs, or specific amounts. The plan will determine on a case by case basis as a result of their review of claims what the specific patient might be able to get. They say that they will make every effort to obtain a prescriber's agreement for this limitation, but they are authorized to implement this even if

the prescriber does not respond or if the prescriber does not necessarily agree with their conclusion.

Lastly they're going to be able to implement pharmacy lock-ins and prescriber lock-ins, which means that they're going to limit the patient to obtain prescriptions for drugs like opioids and benzodiazepines from a certain prescriber or prescribers and/or certain pharmacy or certain pharmacies. They're going to make it where the patient can only get opioid, benzodiazepines and other what they're referring to as frequently abused drugs from certain prescribers or pharmacies. This all becomes effective January 1.

That concludes my section talking about opioids as a therapeutic tool. I included this because we know that recently we have seen a crack down on prescribing and availability and as someone who works with patients who have chronic pain and who has cancer related pain, it seems like it has made it more difficult for us to get these agents for our patients sometimes. I hope these make you feel better, because they're all you're getting.

I will pass it back to Jenny.

Jennifer Inker: Yes, and thank you Dr. Morgan and we have Dr. Crouse up next. We may just have a little transition period here while Dr. Crouse gets her slides ready so just give us just a brief moment. There we are.

Ericka Crouse: Can you hear me okay?

Jennifer Inker: Yes, wonderful.

Ericka Crouse: All right. To kind of go to the opposite side of our double edged sword. I think Dr. Morgan did a good job talking to you all about how opioids are effective for pain management and unfortunately they do have a downside, so I'm going to talk about the risk of abuse, misuse and dependence with our opioids.

As I was preparing for this presentation, I came across an article that was published about 10 years ago in The Consultant Pharmacist, which is a journal that's targeted at pharmacists who work in the long term care setting. They really pointed out that our older adult population are going to be at a higher risk of having some of the, excuse me, risk for abuse of medications. One of the reasons being that even though back in 2008 the older adults only made up 13% of the population, they were receiving 33% of all mediation prescriptions. With the expansion of Part D, they felt that we would see an increase in prescribing medications to this population.

Also, as we all know, baby boomers are aging and they have a greater lifetime rate of using drugs than some of the previous generations. They grew up during the 70s and that might result in increased numbers of older drug users in 15 to 20 years.

They also predicted that the use of psychotherapeutics without medical directions in our adults greater than the age 50 will increase to about 2.7 million by 2020, which is only two years from now. They also discussed that doctor and pharmacy shopping and borrowing medications from friends and family would be an increase [inaudible 00:39:28]. I think Dr. Morgan highlighted how CMS will be putting some limits on pharmacy and prescribers in the future. Also the internet is a way that many people can obtain medications these days. Some of our older adults are also more likely to hoard old or unused medications and save them for just in case.

Lastly, they pointed out that think providers in general are going to overlook substance abuse or substance use disorders in our older population. We often see older adults as

having a change in behavior and we tend to want to focus on memory impairment or dementia or that their balance impairment may be attributed to Parkinson's disease rather than as a side effect of their medications. Food for thought as we move forward.

They actually developed a opioid risk tool back in 2005, for people who were prescribed opioids for pain to try and predict whether or not they would be at risk for misusing their medication. They looked at their family history of substance abuse, whether it be alcohol, illegal drugs, or prescription drugs. Their personal history of substance abuse, again, alcohol, illegal drugs, or prescription drugs. Their age, the younger age they thought would be a higher risk. Interestingly females with a history of preadolescent sexual abuse significantly increases the risk of misusing opioids, and lastly if they had a comorbid psychiatric disease.

To put this into perspective, you can see males and females do have different numbers, but if you scored less than three, or three or lower, you're considered low risk. If you're between four and seven, moderate risk, and greater than eight, high risk. This is a tool that prescribers of opiates can use with their patients to try and predict whether or not they will be a patient at risk for substance use disorders in the future.

I'm going to go and review the Drug Abuse Warning Network report from 2011. It specifically looked at older adults greater or equal to the age of 65 and looked at over 750,000 drug related emergency department visits. On an average day, roughly 2,000 of ED visits were related to drugs. Of them, 290 were either illegal drugs, alcohol with drugs, or non-medical use of pharmaceuticals.

If you look to the right side of your screen, you can see that both prescription and non-prescription pain relievers topped the charts with 118 daily visits versus ... of that, break down narcotic pain relievers falls within this, but 80 of them were related specifically to opioids or narcotic pain relievers. Heroin was much lower, but still surprisingly in our 65 and older population we did see 7 ED visits on a daily basis for heroin use.

This one was looking at first time admissions in adults greater than 55. They were presenting for treatment for an opiate use disorder. First looking at our actual prescription opioid admissions, you can see there's a little bit of rise between 2004 and 2011, it's kind of plateaued since 2011. The darkened shade of the graph shows you those of them that actually received opioid maintenance therapy. A much smaller proportion than surprisingly the patients presenting for help of an opiate use disorder who are actually using heroin in our 55 and older population. You can see this is the opposite. It was fairly plateaued between 2004 and 2010, and then we saw a drop and then a complete increase in the use of heroin.

Part of this can be attributed to about five to seven years ago we started putting limits on opioid prescription prescribing and I do think we have seen a turn in some patients who were receiving legitimate opioid prescriptions, turning to heroin because that was something easier to obtain. Just of interest. The good news is you can see there's also been an increase in access to opioid maintenance treatment over the last few years.

Switching gears to the actual overdose death rates, I think we've all seen vast highlighting the steep rise in opioid overdoses in most recent years. The good news is our older adults tend to be the lowest end of this curve. You can see the 65 and older remains at the low end, you have a small slight increase, but overall it is much less than we see with the younger population at this point in time.

That brings me to when should we recommend Naloxone? For those of you who are not familiar with it, it is an opioid antagonist that is available for reversing opioid overdoses. Definitely something to consider in patients who are prescribed high dose opioid narcotics,

or also those that we know might be illicitly using opioids, heroin, or just have family members who could also be at risk for overdose.

In Virginia as of 2017, prescribers of opioid prescriptions for chronic pain are recommend that if our daily morphine equivalent exceeds 120 milligrams, we should definitely be providing the patient with a prescription for Naloxone. They also recommend that if you are taking an opioid in combination with a benzodiazepine, so it's a medication like Lorazepam, Temazepam, or Diazepam, because we've found that combining benzodiazepines with opioids also increase the risk of overdose. They should be also prescribed Naloxone.

I know we had a lot of care givers and social workers in the audience. If you are familiar of your patient or family member on this combination of medications or high dose, but you have not received a prescription, you also can just walk into any pharmacy and we have a state-wide prescription order where a pharmacist can actually dispense to a patient or caregiver a Naloxone prescription as long as they receive appropriate counseling on how to use it.

Lastly, the other things when we should be using Naloxone if somebody is in treatment for an opiate use disorder, or if they have a history of previously overdosing.

Let's switch gears. I'm going to go through two polls. This first one is Mr. J. He's a 72 year old male with a history of BPH, hypertension, and osteoporosis. He was recently discharged after undergoing a hip replacement surgery. At discharge he was prescribed oxycodone in combination with acetaminophen, one to two tablets every six hours as needed for pain. They sent him home appropriately with a seven day supply.

He calls the orthopedic clinic after five days asking for a refill, stating he's run out of medication. Upon questioning, he reported that the medication was wearing off after three to four hours, so he started taking it five to six times per day, which he looked up on the internet that it could be prescribed every four hours.

Jenny, if you want to open it up to everybody and have them determine if this is legitimate medical use, if this is abuse, misuse, diversion, or dependence.

Jennifer Inker: Great. Thanks Dr. Crouse. Here's your opportunity once again to participate in a poll. How would you describe his use of oxycodone and acetaminophen? Do you see this as legitimate medical use? Perhaps you see it as abuse or misuse. Is it a diversion of these drugs or could is be dependence? Go ahead and cast your vote now and questions, great questions continue to come in, so please don't be shy. We'll take as many of them as we can once our presenters are both finished. Shortly we'll put up the results of this poll.

Once everybody's had a chance to vote, how do you see this use of oxycodone and acetaminophen?

All right. We have our results here. The vast majority at 77% say that they see this as misuse, followed by 10% seeing it as a legitimate medical use, 8% as dependence, 5% as abuse and no one is seeing this as diversion. Over to you, Dr. Crouse.

Ericka Crouse: Okay. I'm going to answer that in a minute, but we're going to do another case study first. Just for comparison. This is actually the case of Mrs. Z, who's a 68 year old female with a history of osteoarthritis, breast cancer, and diabetes, who recently started complaining of right knee pain. She reports that acetaminophen and ibuprofen "were just not cutting it." A neighbor offered some oxycodone and acetaminophen that they had left over from a recent surgery. She's been using the oxycodone/acetaminophen two to three times daily, with

significant pain relief. She denies any history of substance use disorder. She essentially calls her primary care doctor to see if they'd be willing to prescribe it.

How would you describe Mrs. Z's use of oxycodone/acetaminophen? Thank you Jenny for opening the poll. Would you consider this legitimate medical use, abuse, misuse, diversion, or dependence?

Jennifer Inker: All right, and we have our results in. We have at 31% our participants say they see this as misuse, 29% see it as abuse, 20% as drug diversion, 14% as legitimate medical use, and 6% see this as dependence.

Ericka Crouse: Hmm. Thank you. Very varied results. We're going to talk about that in a second. Slide to advance, there we go.

I'm going to review the definitions first. Abuse is actually what is an older term from the DSM-IV, which is the Diagnostic Statistical Manual used in psychiatry to diagnose psychiatric and substance use disorders. We're kind of trying to get away from the term abuse and dependence. I'll talk a little but more about that in the future.

Essentially abuse was defined as recurrent use resulting in failure to fulfill obligations with home or work. Using a substance in a physically hazardous situation, often linked to legal problems, such as a DUI, driving under the influence. Also seeing continued use despite social or interpersonal problems. Abuse is also defined as purposely taking medications for uses other than prescribed or doses greater than prescribed.

Whereas misuse, which I think a lot of you felt the last two cases had, is when a prescription medication is taken incorrectly. Either too often, at the wrong dose, too long, or for an incorrect indication.

Whereas diversion is transfer of a legally prescribed controlled substance medication to another individual. That would be the case of, say your mother received a prescription for hydrocodone for a toothache, and then she gave it to her daughter after she fell and broke her ankle. That is technically still diversion, even though it is within the same family, because it was not originally prescribed for that person.

Lastly, dependence again, was an older DSM-IV term, which was traditionally linked to physical dependence resulting in withdrawal when the opioid medication is discontinued.

Coming back to Mr. J, the majority of you were correct. His use of oxycodone/acetaminophen is considered misuse, because it was appropriately prescribed to him and he was using it for the intended indication, he was just taking it more frequently and at a higher dose than prescribed. That is misuse.

Whereas Mrs. Z, she is actually technically abusing the medication because the oxycodone/acetaminophen was not intended for her and was not intended for her knee pain. Whereas her neighbor actually falls under diversion, because she was the one offering her personally prescribed medication to a neighbor for an alternate use than what it was originally prescribed for and for a person other than it was initially prescribed. Hopefully that helps clear that up for you all. It is not misuse in this case scenario because the Mrs. Z never ever actually had a prescription for an opioid to begin with.

Looking at some other things surrounding access and diversion in our older adult population. As I said, many older adults are prescribed opiates by doctors. Dr. Morgan previously talked about where they fall within the pain management algorithms. People who live in senior living communities, we do actually see sharing of their prescriptions similar to

the case scenario I just shared. Family members, this is always an interesting things. Not just our older adults, but a lot of our younger children and high school age kids get into using opioids from going to visit their grandparents and searching through their medical cabinets and finding that they have stored opioids from a previous surgery. Stored benzodiazepines from a previous prescription that they didn't take all of and sometimes borrow some of them and take them home.

As we've said, you can actually purchase medications on the internet at this point in time. Then I know we had a wide diverse population on today's webinar, but there is unfortunately sometimes diversion by staff in either our long term care or hospital facilities where you will see a patient who has a PRN order for oxycodone/acetaminophen who say, for two to three days will not take any and then one nurse comes on and they get it every four hours during that time period. There is concern that the staff member is diverting it, they're removing it from the [Pixes 00:55:07] machine or [Omnisom 00:55:08] machine, scanning the patient's name and charting that they administered it, but never actually administering it to the patient and taking it home for themselves.

All right. I mentioned briefly the DSM-IV and the DSM-V. Previously the DSM-IV did consider abuse and dependence to be two separate kind of levels of substance use disorders. Abuse was more of the short term and only had four criteria, whereas dependence was seven of the current criteria and they did include tolerance and withdrawal. When the DSM-V came out in 2013, they decided that they should just encompass both abuse and dependence into the same disorder, which now is referred to as a substance use disorder, so in this case would be an opiate use disorder. We're also trying to get away from some politically incorrect terms such as addict or junkie when we're referring to people with a substance use disorder.

In an ideal world I would go through every single symptom of a substance use disorder in the DSM-V, but Dr. Morgan and I thought it would be more interesting to run through a patient case scenario. We're going to do an interview for you today of a 67 year old female who has a past medical history of ankylosing spondylitis, chronic obstructive pulmonary disease, and chronic pain. Her medication list is extensive, but does include methadone 10 milligrams, taking two tablets three times a day scheduled, along with oxycodone 10 every three hours as needed for breakthrough pain.

In the past four months she has requested fills early, so the provider has switched to a 7 and 14 day supply. Given the early request for refills, her provider does a urine drug screen, which comes up positive for methadone, positive for morphine, as well as positive for oxycodone.

As Dr. Morgan and I go through this interview, we request you to pay attention to how many of the following questions the patient, my voice is going to be the patient, has a positive response to and kind of tally those up, and then we'll determine if the patient has what we consider a mild, moderate, or severe use disorder.

Listed here is the DSM-V criteria and as I said, Dr. Morgan and I are going to essentially screen through this. Dr. Morgan, if you would like to start.

Laura Morgan: Sure. Hi Miss P. I'm concerned. You have been requesting us to write your methadone and oxycodone prescriptions early and on your urine drug screen today not only was it positive for the methadone and oxycodone, but also for morphine. Can you tell me about that?

Ericka Crouse: I admit I ran out of my methadone early so I had to borrow a friend's medication.

Laura Morgan: Was it morphine that you borrowed?

Ericka Crouse: I thought it was still oxycodone.

Laura Morgan: Okay. I'm going to ask you some screening questions. I'll ask that you please be honest. Do you ever take more methadone or oxycodone than prescribed?

Ericka Crouse: I admit yes, sometimes my pain is really, really bad, so I might take an extra one or two doses, which is maybe why I run out early.

Laura Morgan: Have you ever tried to take less?

Ericka Crouse: Truth, I would prefer not to have to take it, but when I try to take less, my pain is definitely worse and sometimes I get really sick.

Laura Morgan: Do you spend extra time trying to obtain opioid medications?

Ericka Crouse: When I run out of my methadone, I definitely have searched it out and bought some off of my neighbors.

Laura Morgan: Do you only purchase prescription medications?

Ericka Crouse: Well, not a lot of people are prescribed methadone. Heroin's definitely cheaper and I found that it helps with my pain too. I admit I've never injected it though, I've only snorted it, and I had to use it in the last few days because I could not locate any pills.

Laura Morgan: That explains the morphine in your drug screen because morphine is a metabolite of heroin. Do you have a craving to use opioids or heroin?

Ericka Crouse: Truth, yes.

Laura Morgan: Have you ever failed to meet your obligations due to using opioids?

Ericka Crouse: I've been on disability for chronic pain and haven't worked in years, but there have been times that I've forgotten to pick my grandkids up at the bus stop.

Laura Morgan: Has your opioid use affected any of your relationships?

Ericka Crouse: My daughter and I often fight over my use of pain medications. She tells me that I'm often disengaged, I sometimes nod off or fall asleep, sometimes I seem like I'm out of it. Frankly, I'm surprised she trusts me with her kids sometimes.

Laura Morgan: Yet you continue to use-

Speaker 2: With their kids sometimes.

Ericka Crouse: Yet you continue to use despite your daughter's concerns?

Speaker 2: Yes, I don't think I can live without them.

Ericka Crouse: Have you used in a situation that's physically hazardous?

Speaker 2: Not to my knowledge.

Ericka Crouse: Do you feel as if you either need to take more medications to have the same effect, or you have a diminished effect with the same amount?

Speaker 2: Yes, that's why I often run out early. I've even tried crushing and snorting the Oxycodone to see if it would work faster.

Ericka Crouse: Have you experienced any withdrawals?

Speaker 2: Yes, and that's why I've been forced to purchase pills or heroin off the streets because the withdrawal is awful and feels like the flu.

Ericka Crouse: Okay. Thank you for being honest with me. Thank you.

So, for the audience, severity of an opiate use disorder is defined by the number of criteria that they meet positively. So, if it's two to three, it's considered mild, if it's four to five, it's considered moderate, if it's greater than six, it is considered severe.

Based on how the patient answered the questions, do you feel that they have a mild, moderate, or severe opiate use disorder?

Jennifer Inker: Alright, and our poll is now open for everybody, so go ahead and feel free to answer after that patient interview. Based on how the patient answered those screening questions, would you classify the severity of their opiate use disorder as mild, moderate, or severe? Three choices there. Go ahead and let us know how you would characterize that based on what you just heard, and then when everyone's had a chance to select their choice, we will feedback the poll results.

Once again, do you see this as mild, moderate, or severe? We have our results in. 80% of you say that you would categorize the severity of their opiod use disorder as severe. That's 80%. 20% say moderate, and 0% say mild. Back to you Dr. Crouse.

Ericka Crouse: Excellent. I'm gonna agree with the majority of you. This patient definitely meets the criteria for having a severe opiate use disorder. The fact that they're crushing their Oxycodone, have been purchasing heroin, and also have failed to meet some of their personal obligations they do fall within a severe use disorder.

I just wanna stop for a minute and break down the older opiate use disorder population. As Jenny mentioned when she was introducing me, I work in an opiate use disorders clinic, and we see two primary types. There's either the patients who had early onset and have been using heroin and other substances since they were in their 20s, or even their teenage years, and have just essentially aged out and are now an elderly person with an opiate use disorder.

However, we have the late onset patients, too who were exposed to opiates later in life, maybe secondary to a motor vehicle accident, a prescription from a surgery, and then ultimately end up with an opiate use disorder.

Looking at the breakdown of people more likely to use heroin versus a prescription opiod in our older adults, heroin older adults defined as greater than 55 years old were more likely to be male of African American, or Hispanic descent in the patient populations that were less than 55 years old.

Also, we're typically, were open to using heroin either intranasally or intravenously. Here in Virginia at the Substance Use Disorders Clinic, I work with ... I do see a lot of olderly ... that is not a word, my apologies, older African American males who started using heroin in their high school to early 20s, and the majority of them have only used it intranasally for the last 40, 50 years which I find interesting. So, that's my anecdotal.

Versus prescription opioids, similarly older adults were more likely to be male African American, but were less likely to be Hispanic than those less than 55 years old. With prescription opioids, patients were more likely to use them orally as a typical prescription would be prescribed, greater than intranasally which is when you would crush it and snort it versus the patients who are less than the age of 55.

Interestingly, older adults are more likely to use alcohol and less likely to use other illicit substances for both heroin and prescription opioids. So, they're primary co-ingestant is usually alcohol, and we don't see as much cocaine, stimulants, things like methamphetamine, or amphetamines, et cetera. Whereas for both, we were likely to see patients living in an urban area if they were using heroin or prescription opioid.

Alright, so I'm gonna go over another case scenario. This is a 62 year old male with a history of BPH, hypertension, and chronic pain. He has a history of cocaine use disorder back in his 20s or 30s. He has been clean in recovery from cocaine use for over 25 years.

In 2002, he had a work-related injury and experienced lower back pain. For the last 15 years, he was prescribed Oxycodone/acetaminophen. He reports he only ever took it exactly as prescribed. He never took more. He never ran out early.

In November 2017 his prescriber informed him he would no longer be prescribing him Oxycodone/acetaminophen. This timeline falls within when a lot of the restrictions have been put into place for chronic use of opioids.

Unfortunately, no attempts of tapering his opioid were made. Mr. MA found himself purchasing prescription opioids from neighbors and off the street. He switched to heroin intranasally in March 2018 because it helped with his pain and was much cheaper.

In May 2018 he presented to our substance abuse disorder clinic essentially because he said he's too old to mess with this stuff. He reports he had no idea that he could become addicted to his pain medications. Had he been screened with the opiate risk tool, he would have scored four, moderate risk to develop future opiod abuse or use disorder primarily because of the fact that he had the history of cocaine use in his history.

I just thought this was a good patient to bring up because we do see a handful of patients who have been in a chronic pain management clinic taking opiate pain relievers for years, and then all of a sudden, their provider is no longer willing to prescribe for them. It really doesn't leave them many options. A lot of them go through significant withdrawal. Some of them turn to purchasing it off the streets. A lot of them probably would have never met the criteria for an opiate use disorder. They would have just been considered "chronic legitimate use of the opiod."

Unfortunately, at this point he does not have a provider willing to prescribe it, and we don't really want to see him using heroin. What options do we have to offer him?

When it comes to medication assisted therapy, there's three primary things that we're gonna talk about today. Methadone, which is an outpatient treatment program, Naltrexone, or Buprenorphine Naloxone. All three of these medications state within their prescribing information that they should always be combined with psychosocial treatment. That would be groups such as narcotics anonymous, or the twelve-step programs. We're often gonna combine group therapy and non-pharmacologic therapy with our different medication treatment options. You will hear me use the term MAT, because that is what medication assisted therapy refers to.

Ultimately, the goal is abstinence from opiate use.

Looking through each medication, Dr. Morgan talked about methadone briefly and its role in pain management, but when it comes to opiate use disorder, it is a full opiod agonist. It's access is very limited. For opiate use disorder you can only obtain it through an opioid treatment program licensed facility. So, not any average prescriber can prescribe methadone for an opiate use disorder. They have to go to a facility that has usually counselors, nurses, groups there on site.

Initially, in treatment, patients are required to go daily to get their dose of methadone, and it is administered on site directly to the patient. This is very costly for some people, it also time costly because you have to take time in your day to go visit the methadone facility every day. Patients can graduate to what are called take-homes, where they don't have to come to the facility every day if they have been enrolled in treatment for an extended period of time.

The dosing for this medication usually starts out low, five to 10 milligrams every four hours on day one up to 40 milligrams. Generally, day one they don't go over 40, but they do titrate the dose over the first week to two weeks of visits to figure out what dose is needed to prevent the person from craving opioids, and prevent them from going through withdrawal.

The usual range is between 60 to 120 milligrams per day. The higher the dose, the higher the risk of our QTC prolongation. In these programs, they do monitor them for urine drug screens. They should only be seeing methadone in them. Some patients have been dismissed from opioid treatment programs because of having other substances in their urines.

The other big limitation of methadone is it does have many drug interactions. Methadone was first used in the 1970s for this purpose. My understanding the original physician who started using methadone in a methadone treatment program really thought of this as a chronic disorder, as addiction as a chronic disorder, and that these patients would be on methadone lifelong, and not something that they would be in just for a short period of time.

Moving on, Buprenorphine Naloxone is the newest agent we've been using for medication assisted treatment. The main difference between methadone and Buprenorphine is that whereas methadone is a full opioid agonist, Buprenorphine is only a partial opioid agonist. The purpose of Naloxone in this combination product is really just as an abuse deterrent because if you take the Naloxone sublingually as prescribed, it really doesn't work as the antagonist, but if somebody were trying to divert it, to crush it, snort it, inject it, the Naloxone would actually be the blocker and prevent the effects of the Buprenorphine.

At this point in time, really only the combination product is used clinically for opiate use disorder. The access is by a data waivered provider only. Only a certain number of providers in the state of Virginia are actually licensed to be able to prescribe Buprenorphine Naloxone. So, not any typical physician, NP, PA can prescribe it. They actually have to go through significant training on opioid addiction before they can prescribe this medication.

The cost is a little bit different than methadone. It is per each prescription. Generally, when somebody started on Buprenorphine Naloxone, they'll start them in the office and they'll come in on day one and day two, maybe day three to figure out what does they need, and then they'll give them three day supply, sometimes graduate them to seven day supplies to 14 days supplies, then ultimately to 28 days supplies depending on how well they are doing in the program, how adherent they are to attending group therapies, sessions with their counselors or their social workers and essentially overall how well they're doing.

The usual range for most patients, they're on eight to 16 milligrams of the Buprenorphine part of this product daily. The max dose usually given is 24 milligram per day. The goal with this medication is to find the dose that prevents cravings, and also prevents them from going through withdrawal.

Similarly, the monitoring includes urine drug screens at each visit to make sure that the Buprenorphine's in their system and that not other illicit opioids show up in their urine drug screen. We also do routinely monitor their liver function test because of the Naloxone.

The third option for medication assisted treatment is Naltrexone. So, Naltrexone is the complete opposite. It is a full opioid antagonist. It blocks the opiate receptor for medications like our prescription opioids and heroin bind to. This one has no restrictions on who can prescribe it or dispense it. You can get a full monthly prescription, 28 days, 30 days. The dosing ... the bid stipulation is they have to be opiate free for seven to 14 days before they can start Naltrexone because of the fact that it is the opioid antagonist it can what's called precipitate withdrawal if they start the medication while they still have an opioid in their system.

A lot of patients I see in clinic, this is not an option for them because most of them have used an opioid within the last 24 to 48 hours, and are looking for some quicker relief. That said, the maintenance dose is usually about 50 milligrams daily. Some people do use 100 milligrams twice per week, with 150 milligrams on Fridays if the patient is abstinent from opiates and cooperative. Usual is a range, or dose, of 350 milligrams per week, and similarly the monitoring is a urine drug screen and their LFTs, their liver function tests.

Specific to our geriatric, or older population, with MAT options, really all three of these agents have no specific recommendations in [inaudible 01:15:03] renal function. Methadone does suggest if your renal function is significantly, significantly impaired, less than 10 mills per minute which is usually people who are on dialysis are gonna start at 50 to 75% of the dose.

Naltrexone you can see that area under the curve is increased five to 10 times in people who do have Cirrhosis, and it's not recommended in patients who have acute Hepatitis or Hepatic failure. Generally speaking, we treat our older adults similar as we do our younger adults. We treat until we see improvements in their cravings and improvement in their withdrawal symptoms.

From a drug interaction standpoint, all of them do interact with opioids. Naltrexone makes opioids ineffective or can precipitate withdrawal. Similarly, same with Buprenorphine Naloxone. We also see interactions with Benzodiazepine, CNS depressants, and other QTC prolonging drugs with Buprenorphine. The methadone also similarly QTC prolongation as an additive effect, patients who are on Cytochrome P for 53A4 either inducers or inhibitors may affect the dose of methadone needed, and similarly methadone is an opioid agonist so we're gonna have the same concern if we can combine it for the Benzodiazepine for increased risk of respiratory depression.

Lastly, methadone has a very prolonged half-life which can be something to think about in our older adults. There are reports of people developing central sleep apnea if they're on the really high doses of methadone, also.

Looking at the efficacy of the different options that are available, the first column here is the percent opioid free on active medication ... this should say "percent opiate free on placebo."

So, Naltrexone was 30% opiate free on the medication versus 23% on placebo. Not a major, major difference between the two whereas the Buprenorphine Naloxone two studies, you see between 20 to 50 and up to 60% of people were opiate free. Meaning every single urine drug screen they did not have another opiate in their system, versus the placebo rate in these trials was a little bit lower, 6% versus 20%.

One could say that treatment with Buprenorphine Naloxone was anywhere from three times, almost 10 times more effective than taking placebo, or not being on a medication to help with opiate use disorder.

Lastly, methadone had a similar positive rate of opiate free on medication. So, 60% versus the placebo is the highest placebo rate in the methadone trial 30%. So, it was about two times as, or twice as likely to see success with the methadone.

Take home point of this, these are medications that are effective for reducing the likelihood of continuing to use opioids. That said, they're not completely 100% abstinent. As you can see, there are still patients who may relapse or continue to use opiates by being in a medication assisted treatment program.

Looking at long-acting options, so people who have been stable on either Buprenorphine Suboxone, sublingual, or the Naltrexone, we do have monthly options available. So, there is one product, Buprenorphine, that comes subcutaneously. This is a fairly new medication that came out, and it's an injection once monthly, or once every four weeks underneath the skin. This can only be provided within the physician's office. The patients still must present to their opioid treatment program and get the injection by the nurse, or somebody there at the facility. It's not a medication that they can pick up and administer at home because it does have a risk if it were to be inadvertently taken IV of causing significant respiratory depression.

Prior to that, there was a Buprenorphine Naloxone implant, which interestingly you only had to have implanted every six months. The main limitation of this, however; patients had to be maintained on less than 8 milligrams of Buprenorphine daily which in my experience working in the Buprenorphine clinic, the majority of patients are on doses one to 12 to 16 milligram, to even 24 milligram range, so they were not candidates for the Buprenorphine implant, but they will now be candidates for the Buprenorphine subcutaneous injections.

Lastly, Naltrexone is another long acting injectable. This one is IM, again, it's every four weeks. Generally, we're gonna start them on the Naltrexone oral first, and if they do well with that we will transition them to the IM injection.

Coming back to our patient who had the history of taking Oxycodone/acetaminophen for the last 10, 15 years and no longer had access to it. They did go through the screening criteria, and he met the criteria as having a severe yeast disorder. The doctors decided to start him on Buprenorphine Naloxone combination.

The big thing with this one, also, we cannot start it unless the person is in what we consider moderate opiate withdrawal. So, we do screen them on their first visit to see if they're having symptoms of opioid withdrawal.

Down at the bottom here you can see the COWS which is the Clinical Opioid Withdrawal Scale. Screens for, we usually see an elevated hear rate during opioid withdrawal, we see sweating, usually very restless, have a hard time sitting in the chair while we interview them, we look at their pupil size, they often complain of bone and joint aches so they are ... they have knee pain or elbow pain. Interestingly, something very unique to opiate withdrawal they'll have a runny nose, or they'll actually just start tearing and they often apologize because it looks like they're crying but there's no emotions behind those tears, it's just a symptom of opioid withdrawal.

GI upset. They will have significant GI cramping, diarrhea, some of them have gone to the bathroom five to six times that morning before coming to clinic. We will see a visible tremor. Yawning is also a very unique symptom of opioid withdrawal. It starts out maybe once a

minute and can get to the point where you'll see them yawning 10 to 12 times during a minute while you're talking to them. They get very irritable because they're in pain and upset that they haven't had their opioids. We also see gooseflesh skin, also known as, goosebumps or pilo erection.

We will screen for all of these symptoms. If they have mild withdrawals, score of five to 12, we don't feel comfortable starting on the medication. We usually want to see their score, usually 12, 13 or higher so they're in moderate withdrawal. If they're up here in the 25 to 36, we know that they're in moderate to severe, and symptoms greater than 36 are definitely severe withdrawal.

Our patient today, his score was 14, so we initiated him on four milligrams/one milligram of the Buprenorphine Naloxone. He had some minor improvement. We usually observe them for an hour and then reassess their score. His came down, but only to about an 11, so they went ahead and gave him a second dose of the Buprenorphine Naloxone. Then they tell them to come back to clinic the next day.

The next day they did give him eight and they gave him an additional eight on top of that, so he did get 16 milligrams total on day two. He has actually been maintained on the 16 milligrams of the Buprenorphine as the combo product for the last five months. He does attend narcotics anonymous weekly at his local church, and one group per week at our clinic. His urine drug screens are consistently negative for any opioids or morphine metabolites which is great. He does occasionally test positive for marijuana, unfortunately, he states that it does help with his pain.

Medical marijuana is probably a debate, or webinar, for a whole other day.

On that note, I just want to conclude with some take home points. Older adults are at risk for opioid misuse and opiate use disorders and may be candidates for medication assisted treatment.

Physiological changes in older adults impact our opioid prescribing. If indicated, preferred opioids in older adults to include oxycodone, fentanyl and hydromorphone.

With that, I think we're gonna open it up to questions, right, Jenny?

Jennifer Inker: That's great. Thanks Dr. Crouse. I want to be very respectful of everyone's time. I know we're running slightly behind here. We had anticipated to finish around now, but if people can hang on for just a few moments more, I'll propose a couple of the questions we've received to our presenters. I was also going to ask Dr. Morgan and Dr. Crouse if they would kindly consider making written answers to the questions that we won't have time to deal with today, and we'll post those on our website so you'll have access to them all.

Let's see, we've had a number of really great questions here. Let me take this one first, which is a broad question really, what is the best way to approach a patient about opioid reduction or elimination? What should a provider say? Where do you start?

And Dr. Morgan, or Dr. Crouse, you can take that. Whoever is more comfortable taking that.

Laura Morgan: I'll take that one. It's a conversation we commonly have in our clinic. Especially with our patients who are in remission with their cancer. Often what we talk with them about sort of, where are they, what they've considered, cutting back on the opioids. We try to make sure they understand what the long term consequences of staying on opioids are that they might not understand. Like, immunosuppression and hormone suppression. We know that

increases risks for unintentional overdose, so we try to talk to them about what the risks are if they continue therapy.

Supporting them through the process is really important, and talking with them about a taper, and being able to see them frequently to see how they're doing on that taper, pausing whenever we need to, talking about what withdrawal looks like, how to manage withdrawal if they experience it.

A lot of it is just having good support and contact throughout the process, and really starting when the patient is ready. Having their buy-in is really important and sometimes you might not get that buy-in with the first conversation. You might have to have the conversation a few times. Just helping them to understand what to expect.

We know that patients who come off of opioids, when you look at them six months after discontinuing opioids, their pain is no worse and is usually better than when they were on the opioids themselves. So, giving them that information, as well.

Jennifer Inker: That's wonderful. Thank you for that great answer. Again, to be respectful of everyone's time, I'm gonna draw things to a close now, but we do hope to provide written answers to the many questions that were asked today, and you'll all be able to access those on our website.

Let me please end by saying thank you, once again, to Dr. Crouse, and Dr. Morgan for a wonderful very interesting and informative presentation, and for sharing your expertise with us today.

Thank you to you, also, our audience for participating so beautifully in today's webinar. This webinar has been recorded, so if you missed any portion of our presentation, or you would like to share it with a colleague, please visit the webinar page on our website. Here, you will be able to access both the recording and the slide deck, as well as, written answers to the questions once we've been able to produce them.

As a reminder, information alongside the survey links will be emailed to all registrants. Our next webinar in the series is titled "MicroLearning: Little Messages with a Big Impact." That will be held Thursday, February 21st 2019 at 1:30 PM Eastern Daylight Time. We do hope you'll be able to join us for that one, too.

Until then, we thank you sincerely for joining us today, and wish you a wonderful holiday season.