Welcome everybody, thank you for everyone responding to the Poll, I wanted to get a sense of how many folks here by training, versus other specialties. That is very helpful to get a sense of where everyone is coming from. We are going to the speak today about cognitive behavioral therapy for pain, how we disseminate to patients, and the theoretical origins, how to identify the biological, psychological, and social factors that play into our case conceptualization for patients. We will end by talking about mindfulness and based approaches can be helpful. We look forward to having the talk with you. Because we are in Cognitive Behavioral Therapy for behavioral pain. I have slides of my own, and then also Dr. Love, as well as some of my mentors over the years, Doctor. Smith at Johns Hopkins University, or Dr. Laura here now at Walter Reed, Today we hope you will walk away with an understanding of some of the basic theoretical underpinnings of cognitive behavioral therapy for cognitive pain, and we would be able to describe some of these in the course of the CBT, and also a case conception and certain targets for treatment, if you are engaging in CBT for chronic pain and we will talk about mindfulness.

Before we dive into the objectives I want to start I thank everyone here, we are all understanding that pain is a big problem the problem of chronic pain impacts approximately 100 million adults in the US that accounts for 26% of the population, the prevalence is rising, 11.2% experience chronic pain on a daily basis, and one of the most frequent reasons why people seek medical attention, pain is a particular concern for those who have served or are serving in the US military. Recent study found 74% haves some form of chronic pain. Estimated chronic pain costs up to 635 billion dollars annually, and in presenting a public health concern certainly warranting a discussion on how best we can manage the problem. As far as the cost of pain, not just in terms of financial cost, but in terms of years lost, and the years lost with disability we will see the top five, pain concern, these are one of the three, local here, low back pain, also other muscular skeletal disorders, contributing neck pain as well, rounding out the top five major disorders. Anxiety disorders which we will periodically see overlapping substantially with chronic pain, and they are not usually dealing with just one concern, but usually co-occurrence of different concerns. Along these lines, if you are a pain specialist, or a psychologist, or a behavioral health specialist, more than likely you are seeing people who have concerns, in the general population, depending on what study you look at, 2 to 5% of the population, have some form of chronic pain, and some form of diagnosed psychological condition, when we look at the overlap, though rates are higher, among folks who have depression for example: 2 to 56% have spinal pain, fibromyalgia, 21 to 23%,you see rates among people living with psychological disorders. Chronic pain conditions these are much higher than the general population.

Let's start with the little bit of a background on what is pain? What is pain? Describing unpleasant pain, kind of is the same as the IASP, very slightly recently modified, but I like this definition because it touches on the fact. A pain is not sensory experience but also emotional, and also subjectiveness of the nature, the tissue damage or we often associate with tissue damage, as we will talk about as we go along, that is one of the kind of myths or cargo here we can see causing more

destruction with folks. Also a signal of tissue damage, we are also associated to signal with damage, chronic pain is pain that consists the on the expectant time of healing, we have pain because it is a protect mechanism, we have pain and it tells us to stop doing what we're doing to let the damage heal, chronic pain lasting longer than 3 to 6 months that is beyond this expected time of healing, basically your tissue is healed and your pain is persisting it's no longer telling us something helpful. For that reason chronic pain is increasingly a concern, and conceptualize as this concern. Rather it being an issue with the PER feel nervous, they may make people more sensitive to pain. Understanding pain in the 17th century, we have another approach of understanding pain. The understanding pain is unidirectional. You have pain this positive receptor of signals nothing else identified at that time that contributed to the pain experience. This theory really lended itself well, we understand ,the ideology of the pain and we treat that tissue damage, it should go away, this doesn't lend itself well to biopsychosocial approach, and sometimes for acute pain. A lot of patients I work with I talk about the fact, it doesn't always work. A lot of people have had experiences, where they've had significant tissue damage, in that moment they don't feel pain or the magnitude. The magnitude of damage, people who are in battle, or shot, they don't realize they are seriously wounded because they're still under fire. They're still trying to get their comrades to safety, they don't realize till after the fact that they have been seriously injured, or car accident another good example. People can have acute damage and not feel pain in the moment, people can also have significant pain and not have significant tissue damage, a lot of examples of that. The main textbook example, they have severe pain in the limb, and perceive it from a limb that is amputated, of course there's no issue there to be damage, and the pain is really very real and powerful.

So the Cartesian model does not explain pain, overtime has led into complex models, and the gate control theory developed in the 1950s or 1960s I believe? Rather late 1965, rather simplistic to our understanding, of chronic pain, but this theory involved the brain in an active player , there was this idea, there were two pathways, bidirectional, and from the site of injury, would go through what was considered a gating mechanism, if they weren't open, then they go through, then it reaches the brain fully to be processed in the brain and physical sensations of the brain are processed where they overwrought significantly with the pain process if that is considered dangerous, a thought perception and catastrophize thing we will talk about later on. They would increase the sensation even more whereas, if we can decrease the emotional intensity of the pain, decrease the threat perception that can close the gating mechanism and decrease this patient. Sometimes we want the gate to be open, if you want it open and you experience, say someone who tried to run a marathon, and an inappropriate activity level, this is some times that gating mechanism we want it open, if we have the potential of damaging ourselves, we want to perceive that. We want to be able to take care of ourselves, and be able to make changes in our behavior, so that we can allow the tissue to heal, most people with chronic pain they are interested in the gate closers, we talk about the range of the gate closers, including medical interventions, surgical interventions, and later here also emotional factors regulating intense emotions, eliciting common positive emotions managing stress, focusing

our attention , other than pain focusing on something other than pain, and broadly speaking. Trying to engage in positive life activities, and getting an appropriate level of exercise and refraining from basically things that make our nervous system feel safe can help with that. Neuroplasticity plays a role, those parts of the brain that have paid regulation and physical pain regulation, when we have somebody who has anxiety disorder, like PTSD, the mandala is highly active, when this is triggered, then they may be more susceptible to the perception of pain, and also if they have increased pain they may be more vulnerable or sensitive to PST triggers.

Now we will jump into the theoretical foundation, biosocial Sunoco Biopsychosocial model most of us are familiar with this. Generally Accepted as the best way to conceptualize and understand chronic pain. Chronic pain is not telling us something useful, and there are many factors that impact the progression of chronic pain. Not just biological factors but psychological and social factors, this model acknowledges each individual increasing in a different way and the complexity of chronic pain, this interchange between physical and psychological, and behavioral, all of this pain experience. Biological factors, they can include everything from actual injury, fatigue, muscle tension, inflammation, also psychological factors, these all include also the CBT model cognition, the belief about pain and perceptions of pain, and if we have adapted beliefs about pain, hurt equals damage or all of this will increase stress levels, and the perception. If people are seeing their pain as a mystery, they are very distressed because they're not as a solution, pain self-efficacy. I was just talking a little bit about the plenary discussion yesterday with Dr. Jung Hansen, talking about manageability and if they have this they can engage for various coping strategies, if you don't feel you have control, then that will increase distress. Unhelpful thought patterns if you are experiencing catastrophize thing, overgeneralizing, and psychological factors. Going more into the emotional aspect of this as we talked about previously. Folks who have chronic pain are more likely to experience psychiatric disease, increase risk of depression. The co-prevalence rates in particular, estimated between 35 and 50%, and the conditions that you're looking at, contributing to higher reporting of pain systems, and affecting the quality of life, and looking at sensitivity to pain. Pain threshold and more sensitive to pain, mediates this relationship with long-term experiences of injury, has pain from in journey, or from an injury, they will likely have long-term disability, anxiety disorders, highly prevalent, nationally also 35% of these individuals compared to 18% in the population, and then individuals with chronic pain, and substance use disorders also highly prevalent.

PTSD, we cannot ignore this, among our military, estimating general population about 10%, presenting 80%, depending on what study you look at. 20% of the patients have PTSD. Adverse childhood experiences, you will probably hear more over the course of the conference ACEs , disproportionately high rate among the military, and suggest veterans have higher rates of ACEs , and if you have a history, then you are more vulnerable of the psychological factors, we are talking about and more vulnerable to chronic pain. These health settings, and returning here. Other psychological factors are behavior, we talk about emotion

coping strategies. These are one a huge range of variability, and how people cope, not only with emotions and chronic pain, but there is a continuum to more active coping rather than Passive Coping, we generally think of it as being unhealthy. In our military population in particular. We can definitely see active forms of coping as being unhealthy or unhelpful in the way I think about this, the military folks who are condition, trained to push through mission first. Ignore the pain, don't deal with it, and just keep going. They end up in this over activity of pain cycle which is unhelpful for managing pain, and on that spectrum, we have these where they are exclusively relying on more rest and relaxation approaches, which are appropriate for a short period of time after an injury, then we want people to get back to more moderate level of activity.

We want to look at whether they are looking at pain based spacing, or time spacing which is what we encourage, a moderate healthy approach. Social factors are also important to consider chronic pain can impact a number of social roles people get to have, impacting finances, in the military obviously we have folks who may be separated from the military due to pain, that will impact their career and expectations of what their career and lives will look like long term. We have to acknowledge that, if they are being medically separated from the military, the impact on identity. If there is a grieving process that comes along with that, allowing space for people to grieve the life that they thought they were going to have or the career they thought they were going to have. A support system, are they giving over support, is someone living with a partner or loved one, who has the best of intentions trying to help them, but over responsive to their pain behavior? Maybe reinforcing, because the loved one doesn’t want them to feel pain well-intentioned, but it could be damaging in the long run. Conversely people can have a punishing support system, a learning responsive with anger, this can come from loved ones, and I certainly hear about this among military personnel. People in command who are just frustrated with them, and express that in the form of anger and hostility, we do want to think about secondary gain, secondary gain can be conscious or unconscious, basically, secondary gain in social factors that reinforce pain behavior, whether it is deliberate or not so much. As a function of that, it ends up decreasing function. Before I came to Walter Reed, we had this with workers in compensation, and patients although I would say, a lot of times we were struggling, and a lot of time it gets better, they would get taken away, and it would just get worse. We can see secondary gain whether just with loved ones who are willing to go above and beyond doing more for the person sitting back and relaxing don't have to worry about the pain, or maybe physical pain is a more acceptable pain for her family, or a cultural background, maybe something with numbers that are more accepting, and someone seeing this, and the loved one will give more compassion than if the person said I feel depressed or anxious. They may be some ways in which physical pain may be more except double to get love from loved ones or attention. Or maybe out of social obligations, if you don't want to engage in an activity because you don't like it, you say I have a bad headache.

Just thinking about chronic pain, and when we are thinking about this medical perspective this is a symptom if we identify the cause through technology, we can identify the cure. The doctors are the experts and the patient's we treat the pain this is what's wrong, then the person goes on their merry way, with chronic pain again, even with acute pain situations, this approach is much more appropriate, and recognizes. Identifying and acknowledge that this is a complex problem. The effects on that have on the person's life, and back to the pain experience calling for a psychosocial evaluation, and the goal really is about restoring function as opposed to eliminating or curing that pain. We have this teacher and coach we have this coming back, what is helping and what doesn't help, we take the treatment approach given. So covering the biopsychosocial, now we want to go to the Operant Behavioral model, acute behaviors may be maintained by reinforcement, must be something positive someone is getting out of maintaining their behavior, whether that is, guarding or reducing their reduce certain use of a part of the body because that prevents them from feeling pain or they get something positive from a significant other or a healthcare provider sees their limping comes to their rescue and says sit down. CBT we use this model and we try to get responses, certainly I've had patients where I would either do role-playing with the patient if they have a loved one. They say I want to check the mail every day. 100 yards to the mailbox, my husband says I shouldn't do it because it will make my pain worse. We will do role-plays to talk about communication strategies, to help them to reduce the reinforcement that their partner is given them. So we can use this to decrease pain behavior, decreasing these activities at home and work related, social and leisure entities. Another way the model is used, not just to decrease pain behavior, but also decrease these behaviors may be someone is not going to the football game because bleachers are too painful to sit on.

We want to reduce these behaviors, increase reinforcement, those they are getting from functional and positive aligning with their values. I don't want to dismiss the fact we also want to think about this model, and if people are using these medications inappropriately. They are prescribed some kind of medication, or a potential for abuse, or they're using that medication to relieve pain, or getting the mother positive reinforcement from it, are they getting a sense of contentment, or relaxation from it, or negative reinforcement, reducing anxiety , if that is the case identify that. This Can lead to catastrophic thoughts, increased injury and pain, if you have an onset of pain, obviously, there is some injury, and some painful experiences, and people associate with something meaning terribly wrong, and they may start to catastrophize leading to fear or anxiety. With that comes more avoidant, the longer they avoid they become deconditioned, and more disabled, leading more to other problems like depression, which leads to more vulnerable experiences, we want to break this fear, lowering fear of pain, encouraging them to approach it. That will help them to recover and improve their functioning. We also want to think about the theoretical model, the stages of change foundation of motivational interviewing. We want to identify where our people in their stage of change? If someone comes in saying I don't have a problem. My doctors have a problem, they can't figure out why?

They can’t figure out why I have this pain. They have to figure it out I don't need to do anything, they may be in precontemplation. They may not be aware that there is a problem, that they need to solve, and they may now not be aware that there is something that needs to be changing in their behavior. If that is the case, maybe a place to start is the complexity of playing here and the complexity of pain. Sometimes you try a lot of things the doctors say nothing is really working. I thought maybe there are things I can do differently. I haven't really tried it yet, they may be in contemplation, and maybe we can support and encourage other people coming into CS, they as pain psychologist, coming to see us. Identify, where is the person in change? And we need to keep people going on a positive cycle, they are making active changes to improve pain management, maintaining their health over time.

Now I think I will turn it over to Dr. Love, to take over for objective number two. Any questions we can address before we move on? No? All right. Now we will talk about cognitive behavioral therapy, for the most part, doing CBT for chronic pain, we do use mindfulness, and other aspects that we begin to include, this is a more patient centered approach. We are trying to get them to understand, they are in control of managing the pain and what is going on when dealing with treatment. We’re trying to get them to see a strong evidence-based link, between thoughts, behaviors, and thought perception. The whole goal in treatment successfully is something they can determine, what is our goal? We want you to get up and walk this much, if you haven't walked before, what is their goal? Sometimes we need to meet them where they're at versus determining what we want to figure out what they’re doing, and how this goal is for them, that's not something they want at the end of the day, we are not working together, and the important part of this, the patient is part of this treatment team. They have to be involved in order for us to have a collaborative approach to managing pain. CBT for chronic pain, for those are medically stable, they have to be able to move around. This is kind of an exception, someone with a spinal cord injury, we can help them deal with pain, and again you want them to be ambulatory and working on exercise, so that if they are unable to do these things we can still work with someone that is not really ambulatory, they have amputations they are dealing with as well. The chronic pain condition that causes impairment, you will understand some of these conditions, they don't really understand we can teach them. If it is something difficult for them it will be hard. Cognitive impairment, increasing visibility also is important, if they have some type of cognitive impairment, it will make it difficult to process this information, they would not be able to learn and use techniques we will give them. We want to make sure that they don't have those, which some have memory issues, and significant mental health issues, and even concerns here. To focus on these that managing pain, and dealing with their manic system symptoms they are managing, substance abuse issues, and chronically using , we are not focusing on the pain, that is the hierarchy of needs we want to focus on making sure we are focusing on the pain and not dealing with significant health issues at this time. That cannot be our goal, we will transition into again, different therapist focusing. Then they can come back to deal with pain afterwards. Their ability will engage in forms, and we want to make sure that they can do multiple range, some form of realistic range to move forward with their goal. General goals and targets of CBT-CP, and to

learn teaching them different skills to improve quality overall. Their overall teaching the go, we don't want them focusing on their pain, but improving the quality of life, I just want to decrease the pain. That is not the target, we want to deal with other things that can improve their life. What is preventing them from enjoying life? And they unable to do certain activities? We want to modify that activity so we can do it. If they are unable to understand that they could do a lot more activities, it will be better, then compared to I can just not do, they can do these activities, and they just need to do things in modification. If they can learn to modify activity, and adapt to it, they can be so much better. I think they should do it the same way they learned it when they were younger, that will not work anymore, when they have chronic pain, and the goal. I just need to do this, and modify in a certain way, just to modify and cause in a certain way, they will decrease the pain and enjoy it more, adapting to new way of thinking and reducing this activity more. Like I said overall, the decreasing impairment, and to do more activities to improve the quality of life, our goal is to improve active solving problem approach and adapting to these problems they are having. I always tell patients it's so much easier, again we want you to do these activities but we want them modified, modification is the key to everything. You could still do it, we just have to modify the activity so that you can get to where you want to be. Like a new car, you can modify and change things in the car, but we can't change the whole car, we just have to adapt to the things happening within the car, or the car. Like your body, it will not be the same that you've had when you were younger. Overall we can make modifications. Your body is what is limited edition, has limitations is not broken you still can do a lot of things we just have to modify the activity. Understanding it is limited, not broken, we just have to be able to work within limitations in order to move forward. If they don't understand they have limitations, then that is the problem, we want to understand now we have limitations to work with. In order to move forward.

Cognitive therapy, really a brief model, and we would have 8 to 12 sessions, and sometimes even more sometimes less it depends on what the patient needs, and a lot of this is talk with some form of pain education. We teach a lot of pain education, and to understand pain and not only their specific pain but other patients again to do it. We have a pain education program. This is virtual right now, and we teach people how to live with it from a psychological standpoint, two hours a week. We are teaching them how to deal with their pain, and all those concepts that would be helpful to manage their pain including the introduction to pain. How does it impact you? They need to understand the concept in order to move forward. We just don't understand why we continue to have pain? Despite having surgery, gone through multiple times, or injections, they don't understand why they have these things? We have to educate them on what is going on with their pain, and why do they have chronic pain? And then relaxation, I cannot dress up. Obviously, for real fission training, the more they can learn to relax your body the better it is you can teach them how to manage and change their body back here, which allows them to decrease pain on their own. They don't have to rely on medication so much. If we can teach them relax fission techniques that they gravitate towards, it will be beneficial, you can learn how to manage and decrease without having to again, like I said be frustrated

that things aren't working for you, and having to then live with the pain. Then we have cognitive restructuring, if we can have a thought process, which helps as well, and time base pacing, anger management, sleep hygiene, and relapse prevention. If we can again teach all these different concepts. Within the 12 sessions, things will be a lot easier for people to understand what they need to do, to understand on how to manage pain on their own. Again communication really is the key here. We can't have determined what is going on, but we have to communicate. Communication not only with the provider, but also with family members. Family members really don't understand chronic pain, and they want to help or they want to accept, if they are having treatment, they should be getting better, they don't understand it enough, and it ends up being a lot of problems with the family. They don't understand how that helps them, or how to come to terms with it, and how to get better professionally.

Now jumping into Psychoeducation, a lot of things I hear, I have all these injuries and I've been able to get past them, how can I get past this now? As well a different type of condition versus when you are younger you didn't have this condition and maybe you may not have had multiple problems here, now chronic pain, and now you need to make modifications around it. We want you to have this kind of muscle this is something different versus the chronic pain. Explaining what it is, and also teaching them again they are an active participant in what is going on with treatment they have to be able to understand we are looking at everything. Not just trying to target pain as the only thing that we will try to manage. Again that is not the way that it would impact the change. And we have the gate control theory of pain. Your brain can actually modify around your pain. Along here, as long as it's not constantly fired upon. As long as it keep here, see you allow it to feel it is much what happens to the body? This explains when certain things happen. Maybe you are going to that fight or flight response mode, things are happening to your body, turning off blood supply, this happens repeatedly, and causes people to have problems, make certain pain worse, and develops other areas of pain or new medical conditions . All of these things start to happen, and patients need to know that that is why we are teaching relaxation, so that you’re again not having these issues in the future. Understanding, pain motion. How it impacts the brain as well, all of these pathways. And they have all of the sorts of things happening when we are dealing with chronic issues. We have to teach them. How it happens to your brain and now we can fix it, so them to receive it. Any questions so far? I've been talking quickly. No okay.

Again with the pain cycle, starting with this decreased act of them. When patients stop moving, they fear it, or every time they start moving it causes a lot of pain, then they will stop. When they start moving, it the conditions their body, when they start moving in the body it increase their pain dramatically, and reinforces not moving again and make deconditioned. When we asked him to get up and do things it is so painful, when you actually start moving it will be painful, the more you start doing it, it will not be as painful in the future, so it is important to move, when we have more decreased activity, we have less motions, and then we get more depressed, and then they avoid other people, those people will do things they can do, they avoid hanging

around people, because they can't do certain activities. They don't want to be around people who are happy when they are not happy, then more destructive disability, they perceive this, and cannot do as much, and it can lead to a physical disability. If you cannot perceive doing it much, then he can do it. You will then have more disability, they will get more anxious, that they can do much more, their pain is increasing and leaving tomorrow chronic pain. A vicious cycle, we want to target different parts of the cycle so we can negate some of these things, target it in a way, to make sure the patient is able to move forward and improve. If we don't, then again they continue to go down and spiral. We want different ones and different times, depending on where the patient is at the moment. I will turn it over to dark Richards really quick.

In my practice I have gained more from the physical therapy world, and I have this pulled up, why do I hurt by Dr. Adrian Lowe who has a PhD in physical therapy. Developed treatment called therapeutic pain science education. The idea is, providing patients with education, and the neuroscience of pain. And chronic pain. This can help alleviate anxiety of pain, fear avoidance, catastrophize and, that could increase the likelihood, and to increase this function long term. Some of the slides, taken indirectly from the work. So with my patients, and with Dr.Love, this passion for relaxation training, and obviously done well. I almost feel like for me one thing I'm more passionate about in my practice this is pain medication. And medical appointments patients go to, the time is so short, to get information about what is pain, what is chronic pain, why do I have this pain? When I start working with the patient for the first time I spend a lot of time on paying neuroscience, and sprinkle in a tiny bit just to get them on board with the idea, for the searchers. What is one thing I start with quick I cover different levels of detail. The different levels and the sensitivity to pain. And why that impacts the development and progression of pain, one-way I talk about that, and I talk about if you have a new imagery, this on top of the screen, one thing that happens, because our body wants to protect us from injury and wants us to heal. We step on the now calm the nerves in your foot that are sensitive to tissue damage, they start firing the alarm activate, the signal sent to the brain, and your brain understands there is damage there. Not that normal activity, typically as that tissue damage heals. The sensitivity level of the firing mechanism goes down, your nerves in your foot come to be less, and you don't experience that type of pain. When it comes to chronic pain. Yes, that is how it works normally, but before you have chronic pain, we have this low threshold. This low threshold effect Timothy. This low level of activity, and the high threshold, and lots of room for Tivoli, lots of activities, and they don't cause pain. It is not going to put you over that threshold, however if you have had multiple injuries. Traumatic experience, if you have had multiple survey pain that is unmanaged for a long time, then your baseline level of that. It will be higher which means it is much less room between the baselines levels, for the threshold experiencing pain. This is in essence, we want patients to know about it, just because you are experiencing pain, this doesn't necessarily mean you have an injury, it means you have crossed your threshold, you do more than you normally want to do. Your nervous system is trying to protect you. Trying to say take it easy. That doesn't mean anything is necessarily wrong. We just have to decrease your baseline level of activation. And part of that is

relaxation training, if we can bring your baseline level of expert Titian back to normal. Or lower at least. Then you will be able to do more, so that you wouldn't experience this. How do we bring that baseline level of sensitivity back down? There are a lot of things we can do, to do that. A lot of that decrease, some of the main components. Things like increasing knowledge, pain education, things like aerobic exercise, meditation, these all are related. Pacing, exposure, and are given opportunities to do a little moment, and a break before the pain flares up, that movement is not dangerous I could do this. Maybe just to extinguish that pain response. The manual therapy. All of these things help to lower the sensitivity level. This is what CBT is all about, working at the level of your central nervous is. Now they got you into this high level of vision. You can do much without pain being triggered, let’s reduce your sensitivity, so that you can do more. So that you can keep living if one meaningful life.

From Australia, the name is escaping me, but they will say that in the video. We have pain education in particular, I want to show the brief YouTube video, this gives an additional language to use. This is another thing to think about, what language are you using when you talk about pain? This being a dangerous thing? Or it being a protector, or your body trying to help you protect it? All right welcome back, I'm sorry we couldn't put the video up for you guys I'm glad you were able to see it. Now we have something here in the behavioral modules, again relaxation training, for this relaxation training, it is really important to have things we go through here in pain education, and act vividly, and similar Control. Another place we will start after giving pain education information, it is important to focus on some relaxation, not only to provide distraction, but the nervous system, to go of getting them back, their body is also trying to put that into the mode. We want to have your body into its normal state and then these normal achievable goals, so that the patient gets success all the time. When I tell person to do relaxation desk, maybe five minutes a day, when I tell a person to do this relaxation, if you don't practice it doesn't work when you need it. Try to practice as consistently as you can, that way when you do need it the pain will decrease and it will help them. I start with breathing, because if you can't get the breathing down correctly, then it causes more problems, you will not learn effectively in the future. You have to know how to use your diaphragm, and really focusing on specific ways you can do a count if it does better, I don't do the count because everyone doesn't read like I do. Whatever works for them, works for them, and whatever it is that they want to do again, they have a hard time, sometimes you incorporate biofeedback, something to show some instantaneous feedback for them. You can find a way to allow to relax yourselves in order to do this in the future. I don't move on until they actually get it down, if they don't get it down in an efficient way, that we just keep on practicing, then I move on to something else. Then I move onto mindfulness and meditation, then I project onto visualization, you can use this relaxation or there is one that works it as well. When they tense up muscles they have more pain, I use passive muscle relations. These relaxations to teach them deep breathing, and helping them with their headaches. Hypnosis can be helpful if you are experienced and very well can be a proper tool to help patients know how to relax in the future. When they are in a trance they actually work on doing some of

these relaxation techniques to help decrease pain on their own, it can be helpful, participants just need to know which technique to use at which time that can be helpful for them. With autogenic' s, it is important to teach standard waves, your hands are heavy, right hand, the left hand, then both hands are heavy, then left leg, then both, then right arm, left arm, is warm then both, then right leg, left leg is warm then both. Then you do both arms and legs are heavy and warm, then moving onto breathing focusing on their head, focusing on your stomach, then overall body, so different techniques, but usually they focus on that type of round of relaxation. The goal is stating these and then the more they follow these thought processes, whatever happens in your mind your body follows. If you repeat it, here follow, the move into your hands and feet, and then maybe put the nerve system, which can lose blood supply, really important for patients to do that. With headaches, this gets trapped in school and doesn't come back out we want to push it back out, they will relax them and decrease headache. After practice a lot. Sometimes it doesn't work for the first go round, and you just have to keep practicing, and it will help them. Any other questions about these type of techniques? Like you said, some of these techniques are better for certain conditions, and you just have to know the condition, and which would be helpful for them. I find if I'm using imagery with water, this works well, and again everyone is different, and some patients don't like water, so we may use something like a warming technique, whatever works and resonate to the patient, and the little more for them.

When it comes to pacing, do you have any recommendations how to learn these and teaching recommendations? I don't think I have any tools. We just do it based on what it is we have. We start here, with the breathing, I can send you some information resource to explain how to do it better. Meditation again simple meditation. Mindfulness I always teach the version seven minute meditation, then doing body scans, these are good, it relaxes parts of the body and not the whole body, if they just have pain in one area of the body, then they just want to decrease one area, the body teaches to focus on one area versus everything. And also helps them to sleep better. You can also learn to just relax without having to be able to relax your mind and drift off to sleep. This technique is 30 to 45 minutes long, when you are doing longer relaxation people zone out, and sometimes it helps your organ sleep, eventually you will go to sleep, the zoning out is the care, conscious mind subs focusing on what he's saying but subconsciously you're able to do it in your body you're not just paying attention to the words he is saying.

We can share resources to help out. I can put them up when I'm done with my section. I will put them up when Dr. Richards takes over. Activity based pacing to learn for patients to do, we learn here, and whatever you use, you just want to make sure patient understands the find that Energy they have for the day. If the patient wakes up they only have 20 minutes for the day, how much do I need to get done? How many am I using to do simple things? You may use one spoon to do an activity, on a bad day you make use 45. It is important to understand, and you need to know how many booms they have. On a good day, then not too bad, again how much does it take for you to do this activity? Certain things can cost you these activities and especially if you work in this area, and a lot of traffic, it could make it difficult to get more, maybe studying or taking showers,

again these are on good days they need to understand how to do this, and they need to know again that you only have a finite energy, I will use these spoons tomorrow, but I don't know how to wake up, but you are already waking up on the deficit. As well as again, we don't know how you will wake up? Compared to today. And then end up having more issues. Does that make sense? There is a spoon theory. Or a marble theory, we use both interchangeably it doesn't matter which one use. The other one most important when people do relaxation, sometimes they can gain these back. You're able to do exercise, and kind of back in the day, you will gain what? They want them to relax in order to be able to get some of those spoons back, and this relaxation gets them to the point they can get back going.

Will we talk about the physiological part? The pain causes decreased activity reinforcing, then from a psychological standpoint, you have anxiety and fear. Then you want to make sure it does work, then you get depressed, then this increased perception and overall, not only will you have to manage the physical aspects, but you will have to deal with the psychological aspects as well. People don't want to see a psychologist come I'm not crazy I pain. We're not saying you're crazy. They don't know here is a psychological aspect, they just know they have pain, they go hand-in-hand, as your pain goes up, then your psychological distress goes up, that's why we can't manage the physical aspects unless we deal with the physical aspects as well, and the psychological aspects we want to teach them this part so that they are able to function better. If we are able to manage the psychological aspects using these techniques, and providing what we talked about, improving emotions, giving you hope on life, decreasing pain, and we are able to increase activity pacing, decreasing pain overall, so we are able to have more activities, and further improving condition. That helps manage the pain overall, and we are doing both sides, and they can deal with this pain, and having one aspect of their pain not being managed. The activity pacing, depending on where the patient is and how they will be explained, they tend to overdo, and what do they tend to overdo? Well if my patient say I have to clean everything it can't be just one thing at a time, okay we don't want you to do the whole house let's focus on the kitchen today. Within the day, we will break it down within smaller pieces as well. First task wash dishes. And then we will stop take a break at a certain point. Help to identify strategies, and then those again, if I have to finish all the dishes before I sit down at the problem, if your pain is increasing, we don't want you to keep going, we want you to stop. We want you to take a break. Some people take a long time and a hard time taking breaks, we want to reinforce the more you are taking a break the less likely your pain will be out-of-control, and he won't be down for the rest the day. It is important to actually do these activities so that you're not overwhelmed and they are unable to function for the rest the day or several days. And we want to sit down for the short period of time now we will only do 10 Min until the pain increases, then stopped to take a break and then again if the patient is unable to understand their pain level. I had some patients couldn't understand when they're pain increases this is where they just have more time basing and we only send it to 10 or 15 minutes and then they have to take a break. That makes them actually focus and what my pain level is out right now. And then they can go to do more pacing. And it depends where the patient is and it

just depends on the patient. And they continue to do either one of them. It's not just one thing, do everything. If were talking about the kitchen, then bringing it down to more cases. That way they learn how to take these breaks in between, instead of doing it all at once. They are so used to doing it all at once, and that is what they used to do, and they don't have this physical pain, they have to bring it down in these smaller cases, and not causing so much distress, and to be down for longer periods of time. Break it down into ways here understanding. All activity needs to go, versus certain aspects. We have to reinforce, and then we want you to do this, come back and tell me how you did. If we have difficulties, talk about difficulties you have and some of these activities people we list positive activities for the patient and asking for details, what did you like about this? What did you not like about it? And then getting you back into doing this in the future, what is preventing you from going there? I can do this because of the pain, how can we modify their activity in order to modify and be able to do it again? And how can we fix this problem? It is so enjoyable in the past. Also at the beginning, it will feel like work, like you are going to physical therapy, you will not like it at the beginning, it will not be fun, it will cause you more pain, we are actually using more activity, the more you start to do it, you will enjoy it again, this is why I liked it, this is what I've done in the past. In the beginning we will schedule it out and then to engage this activity, reinforcing these baby steps to improve on this. Again to do activity without so much stress, we want to schedule it out to modify the activities so that they could go do it that causes less stress in the long-term. We want to get them out there, the findings that they enjoy, again taking the mind away from the pain. The more you can distract your mind the better it is. Has to be something pleasurable, if it's not pleasurable then just things they do it's not fun, your mind will then get away from thinking about it, and then it causes so much stress that is not beneficial. You want to allow and focus on pleasurable activities to distract your mind from pain.

Then we want to focus on values. This is a component in the therapy, and we want to personalize these activities engagements one of things that they value in the life, physical things, and relationships? Employments, education, recreation, anything, we want to figure out what they value. How is the pain preventing you from engaging and interacting with family? How can you improve with that? And we want to make sure that it doesn't cause so much pain, focusing on these values, and getting them there, focusing on the value system, and how we can modify and problem solve from the issues we are having. Again we want to identify the patient's values. What is it that they cut back on? And all of these the we want to achieve to get you there. Small goals first. And then again larger goals. Using smart goals, in the attainable thing and maybe a way to get them to move forward and preventing these issues and the issues that they have. Again dealing with smart goals, and increasing opportunities and reinforcement. SMART relative and attainable, and relevant for them. It is making sure that is measurable to them, and couple days versus a week, and what it could be and achieving during that time period. We do need to get past the idea that pain is leaving the body that is something that we have to do, especially within the military, and the branch within the military, and they do focus on that. I agree a lot of times the goal is to teach anybody really just to chalk it up then to move on. If they come

in earlier versus if they wait till the last minute, or months down the road, then it becomes harder to actually help deal with pain, versus if we deal with it earlier. And we have people 10 or 12 years, I get that you are concerned with your career. When it comes to what it is they want to change, looking at this information and what is it that you want to change? What can they do to make this change in their lives? Similar to the desire, what is the reason they want to make this change for themselves, and this need, why is it so important to them? How important is it for you? It's really important for us to explain it to us, and what is it that they want to change? We want to reinforce it. If it is zero or one, then it is not that important to them. How we can make it important, or maybe another call, and it isn't that important for you.

When we come to the model we introduce the ABC model. Discussing automatic funds and some of these unhealthy thoughts, self-monitoring, identifying the patient's pain triggers, and the hopeful thought patterns. And automatic thoughts, activating an event, there is a belief in a consequence. All of my thoughts are quick and behavioral responses, an example of thinking, no point in going to physical therapy if my back doesn't hurt, then maybe it's either nothing everything or nothing, at that point, they think the point of the physical therapy, there is no point because it's not helping. Understanding, if your back will hurt a little more at the beginning, but then it will get better as you strengthen other muscles. I should be able to walk, without a walker, or better from this condition because it's this much time. Just knowing a specific time period on getting better for instance someone who has issues related to TBI. There is no time period for that. There's no way to tell you it will be better in one year. We don't know when we can get you 100% back, but somewhere close to that. Just positive things, it doesn't count if it doesn't happen to me, now this negative thought, now I can't see.

More on the neck pain, pain catastrophize and, this value pain, it gets progressively more intensified in your mind, and certainly it feels way worse than it is, and I can't manage this, or deal with this skill and experience really to inhibit this pain and you will have more painful encounters, so you start to become more sensitive to the pain and you are starting to make this more of a bigger situation than what it is. Increase intensity you have a lower pain threshold, lowering your pain threshold, again you are likely to hit those spikes in pain more often because the threshold is lower, and more activities, you are having more depression and poor responsive to pain intervention, you will not get much recovery, from the injections for example. You make it worse in your mind, so if you decrease the catastrophize income you're able to improve responses to interventions in the long-term, Self-monitoring. Increasing pain over the course of a week, we want them to write it down. What pain are they having, or what are some of the thoughts that they have? The emotional physical consequences to the thought process that they have. To increase awareness, we also want them to be aware of how their thinking, and slowing down the potential for negative thoughts. And how to step back, and really just critically, they want to look at it, analyze it, so that if they can't do this activity, I can't do anything? If I can't run I can do any activity, not true. You can't find something right now, but what is best for you, we will find something best suited for you.

Sometimes women, some find cycling better. We will just find it. We want to change the negative thought process, by a more adaptive response. By changing the negative response, then you can have the results on these responses. Really a stabbing pain in your back emotional consequence can be anger and frustration, about this pain in your back, you get tense and tired, you will be like I can do anything again, and you will just go to bed early. The automatic thought I can't get anything done without hurting myself. The pain must be getting worse. Maybe 80% tied into the thought, and the pain gets worse, and maybe any simple activities, and what evidence you have to support it. The pain is increasing, my wife has clean the house for me I can't get anything done. Some are not as difficult to complete, and I can complete it if I take breaks, maybe pace yourself over three days. Practice relaxation exercises. Then the pain is bothersome, I could be sore but I could be safe. Increase pain doesn't mean injury, it just means slowdown. In the beginning they will not believe in the new balance thought process, overtime the more they will believe it. It will take hold and will make it a lot easier and to improve their emotional responses to it.

Again cognitive restructuring, we are not ignoring reality, the goal is not ignoring, you must be realistic about your expectations, if I told you not to think about the pain it's not easy, we can't just tell you to stop thinking about it, it goes away. No, we have to actively change the thought process, in order to not focus on the things that are so negative for us. We don't want the pain to be in the forefront of our mind, we want to move it to the side. I know we move it to the side, again if you move it to the back you're not paying attention. Then your pain increases, you don't want it in the front then you would focus too much on the pain. If I pay attention to it, know where my pain level is, and then take breaks, versus focusing on it. Causing more distress on focusing on it. Providing an alternative way and we want to see it from a different perspective a different paragraph is here how to manage and looking at it in a different way, other than I'm in pain I can do anything.

Sleep hygiene and stimulus control. We understand sleeping causes them to have more pain, and they don't understand how to put it together, so we want to review strategies on how to improve sleep, some can be tiny. Patients can think if we just lay in our bed for 12 hours I would get eight hours of sleep it doesn't work that way. Sometimes we want to push them towards going to sleep later, so that they can get more consistent amounts of sleep. If they are sleeping four hours, we want them closer to being able to get the whole four hours of sleep, versus being in bed from 8 to 12 hours and you’re only getting four hours of sleep. Improving your sleeping behavior, things you do environmental things. We want to look at the environment, are there things that can cause them to wake up? Something that is preventing them to sleep efficiently. Do they hear things in the environment, or lights are on in the house, or maybe it's too hot. We want to improve these things, they are able to sleep more consistently, sometimes it's just easier to change environmental things rather than their bed, I'm not sleeping in the bed, let's just change things around as well as pillows, something comes certain pillows maybe better, than others, we want not only see how they sleep, but sleep routines. How do they prepare to go to sleep is important? Some people

don't have a routine, sometimes they get up and go to bed, or they do different things that actually doesn't help when you have sleep issues. We want to develop a routine. Something you do every day, to help the person get progressively sleepier rather than this so that they can get to sleep. It is important, to do, do they eat or drink before bed find sometimes they can cause them to have their stomach start to turn that night, or maybe caffeine or nicotine, this can be similar. Medication can activate you as well. It's important to understand, are you taking medication that will activate you more? Or sometimes if you get to light, or spills over to the next night. We want to know what substances so that we can modify with those things as well. Once they are better suited to go to sleep is important, it helps a lot of worrying at night. Taking timeout, someone for them just o worry and problem solved. Writing things down so that you don't have to continue to think about it, different strategies you can use. We want to find out what is going on with the patient. We want to improve our sleeping. We will take a break.

All right we are moving on in this section we will talk about case conceptualization to help with identifying target for pain, part of doing that thinking about our assessment considerations. We will start with again a standard assessment and considerations that we use and then we will go into an example likely components to a psychological evaluation and then we start with pain quality and functioning. With descriptors of pain, and they describe their pain, you know. Stabbing into my head walking on nails, really intense vivid hoops a question about how we can get the slides. Descriptors of pain can be telling. There can be clinical information. They are vivid. I also ask about pain history. This includes and I asked people to usually briefly, if you will entertain me, you know, let's go back in time and talk about the problem, like when it started to interfere with your quality of life and tell me what was going on around that time. This is a very helpful question for me to ask patients because, often, not always, but often, there something happening around us and it was traumatic , they were in combat, they were deployed, they were away from their children, there was something going on, and it feeds into the idea that neurons that fire together wired together. There was evidence of some traumatic, emotionally traumatic experience going on at the time of pain on cents, we want to make sure that we target that over the course of treatment and identify whether certain reminders or memories of their emotional traumas impact their pain perception. And so we are giving them tools to manage that. We also talk about pain behaviors, activity changes made by patients or civilian others, so especially asked about, you know, what are some examples of some activities that you are limited from doing and that stopped doing because of your pain. How has your social life or your relationship been impacted? We talk about all of those things. Certain behaviors and responses to pain, I will observe. And part of the systems assessment, I will include pain behaviors and identify whether they were growing, learning, grimacing, guarding, you know, if they were holding a certain part of their body, rising from a seated position, all those kinds of things. So that includes limping, activity, this goes into how is your social life impacted, how are your relationships impacted, usually I will get this information by asking these questions, what increases or triggers pain, so I want to get a sense of what information and expertise, essentially, the patient already has in pain because that is

how I seek treatment for functioning. We are the experts, I am the expert academically and you an expert on your own pain, and let's join expertise us together and see if there's anything we can do to optimize or maximize your ability to manage her pain. I also review medication use and symptoms of past medication trials including dosing and so if they try the medication path and it was low-dose and they did not find any benefit that might not be worth trying again. If they have a side effect, you know, we kind of think about that and see if the only trait for a few days and have a side effect, you know like, did you get any benefit during that time because sometimes that affects, side effects can result in you stick with it for a couple of weeks and a few weeks to get to that so that is important information as well. Also if there is any evidence for aberrant medication use or substance use disorders in general so I am not as familiar with nursing manometer's tips but this seems like a very mnemonic to work from so pain onset, how long does it last and how often does it occur, what were you doing when the pain started, so again, getting an idea of what was going on around the time the pain became a problem for you, you know, were you undergoing any life stressors or other medical issues, was there injury or an incidental getting that idea and provoking o palliate eating factors, what makes it worse or better, the quality, again, getting at the throbbing, stabbing, I speak to the head kind of quality, the region, getting an idea of where it is happening, is it radiating to other regions or is it more localized, the severity, you know, the scale of 10, what is the best it gets, what is the worst it gets, what is your average pain level, and that will give us a little bit of an idea of what it is as well. How long has it been going on, the time and treatment how long has it been happening, and what treatments have you already tried out, what medications you do, with physical therapy interventions have you tried, have you done active talk to, yoga, massage, all kinds of things. So I definitely want to get an idea of the treatment history and what has helped and what has not helped. And there's understanding the impact. What do you believe is causing this and frankly that often, usually when they ask patients, like, what is your understanding, after all this time, you can't, you know, especially when it is hot, or there's a specific injury, a lot of times I don't know. Nobody has really explained chronic pain and that goes back to my passion for pain education and how is this affecting your family, do you have any of the concerns, so really understanding what do they know about their pain and how is it impacting them are all really important questions to ask.

As a part of this evaluation, ask about their psychosocial history. We want to know that about their family background in terms of education on income, occupation, ethnicity. I always ask about adverse childhood experiences. When you were a child, were you ever abused physically or sexually, were you exposed to domestic violence, were you living in a violent neighborhood, did you witness anything traumatic in nature? We know that adverse childhood experiences increased risk for all kinds of health conditions. That is especially, in our case, in terms of income, so the work status history including issues related to litigation a workers compensation as well as return to work, are you on a profile. A copy of the slides can be found in the files pod. So the files pod is on the screen. From military personnel light duty, what are they limited and doing? Quality of past, current relationships with spouse, family,

friends, family history with pain, disability, alcohol, drug use, you know, these are part of the medical history and all history is helpful. Getting an idea of what they enjoy doing, like, what they thought, what they still do to get enjoyment and pleasure, current and recent stressors, their relationship to pain or pain behaviors, so you know, how has your pain impacted you, how are you feeling about the pain, how does your pain impact your mood, and how does your mood affect your pain those questions I ask as well. And criminal history, we ask about, you know, criminal history, legal issues related to the pain, in particular, so if someone has been injured in a motorcycle accident, is there ongoing medication, is there, you know, a lawsuit pending, and that is important to know. It is an added stress or to go through that process. I want to know about their mental health, current and past. Did have a history of depression, anxiety, serious mental health, impulsivity, any suicidal ideology, we want to know what we are working with. Is this a person who can benefit from this but also if they have ancillary depression or anxiety or serious behavioral health or mental health conditions, we need to take it into account. We know they have lower thresholds for pain and are more sensitive to pain. We need to find out what current and past psychological treatment they've undergone. What did they find helpful and not helpful? One predictor so if there's anything that they have already learned from working with past providers that works or does not work, I want to know that so that we can use that and make sure that our relationship is as strong as possible. Drug and alcohol use including types and amounts and pattern of use, of course, if they are, so they report that they are and occasional drinker. I often will ask the question do you find yourself drinking more when your pain is worse, do you find yourself taking more when you are having anxiety or depression and I get this idea whether they are using alcohol because they identify themselves relatively moderate amount. I want to know if that serve as a coping mechanism, basically. I also want to know about their past medical illnesses, comorbid diagnoses, problems with sleep, especially. That is a big passion of mine. If they are having disrupted sleep, I have a very low thirst myself for referring people to sleep studies because we know that folks with chronic pain is much higher among folks with chronic pain in the population and, even if they do not have sleep apnea, if they have a restless night syndrome, if they have nightmare disorder or REM sleeping disorder. Research on comorbidity between chronic pain and sleep shows that when people have disrupted sleep patterns, that increases the risk for increased progression for chronic pain. If there is an underlying sleep disorder that we need to identify, let's identify that, evaluate it because that can help in pain management as well. We went to know about changing weight and does your weight impact your pain level, does your pain impact your appetite or your sleep pattern. Want to know that as well. One patient we work with currently specifically was referred to pain management treatment because he is trying to maintain his weight and he recognized that he's in a vicious cycle. His pain gets worse. He avoids going to the gym. He doesn't want to have pain. He has mood fluctuations. He eats more like comfort food. It then makes it harder for him to go to the gym because he is more fatigued, he doesn't have energy, and it perpetuates the chronic pain cycle. We want to talk about weight, eating habits, diet, and how all those things are related to pain. And then problems with sexual functioning, a lot of times, you know, in medical point is, doctors do not have time to ask about how is

your pain impacting intimacy or sexual function in relationships and often this is a significant problem not because of the pain itself but because of the different medications that people can be on to manage chronic pain. That can impact libido, sexual functioning. We want to ask about that. We want to make sure we are addressing that Key components to a psychological evaluation continuum, the patient's concept, beliefs, expectations of pain and pain treatment, so what do they think is causing the pain, especially the prognosis. Especially If you were to go on as you are doing right now, is the pain going to be worse or better, like, what is your understanding of what is going to happen, the treatment goals, experience with other treatments, so you know this helps. The patient's motivation to manage pain, what are they willing to do? If I ask them to institute a walking regiment, if I ask them to turn off their electronics, you know before bedtime, if I ask them to change their diet, what is their motivation? The patient's ability and willingness to communicate about pain, is there someone they can talk to? Are they getting emotional supports? Some people, in their lives, patients care about pain treatment and human impact, so a lot of intervention for chronic pain, whether it is nerve blocks or radiofrequency ablation, you know, spinal cord stimulation, surgery a lot of these treatment are painful. You know, they are painful to go and if they have a lot of fear about the treatments, we want to make sure we address that and give them tools so that they can use them to manage fear and anxiety going to treatment intervention and also to help them to follow intervention.

A lot of folks with chronic pain experience changes in cognitive capacity and this can be because of the pain itself, it can be because of co-occurring issues like anxiety and depression. It can be a side effect for medication. It can be because of sleep dysfunction as a result of the pain. There are 70 factors that can impact concentration and cognitive ability and if someone is really concerned about it, I would do a brief cognitive assessment with the many mental status exams that potentially refer them for psychological. If they have a history of TBI, all of these things are important to consider and, if they have, like amino, best explained by their pain and other issues that are going on. You really need to take that into consideration in treatment planning. If you recommend that people take breaks every X number of minutes are you recommending that people relax, do a relaxation session once a day, if they can remember, they are not going to do it so you need to make sure that they have strategies in the toolbox to optimize for success. If the patient agrees to have their significant other join them in the initial assessment, that is a fantastic That way, if they're having conversations, they can fill in the gap in the area but also the so give it another can provide information of patient functioning, may discuss topics the patient does not remember or address. And the outcome tends to improve when and others are caregivers or supportive persons are on board with what is going on. It can be a very invaluable tool to have. We are working on getting the slides available for download. In addition to a clinical interview where you kind of get people free flow of thoughts about the pain, there are certainly a number of empirically validated and reliable questionnaires, pain intensity levels as well as their mood and personality and psychological functioning overall. There are coping strategies as well as level of functioning so these are all listed here

and again we will work on getting the slides available for download so if you're interested, including any psychological psychometric measures, I guess I should say, these are all validated one's that we recommend. I realize now that we have talked about the ACES study. I think I want to read, I think ACES is part of the intake packet that they complete so the scale lists 10 adverse experiences that people sometimes experience in childhood and we just check off any of those that they experienced and the higher the number, the greater the risk. So that scale is not listed here but that is what I would recommend. Based on everything we discussed, we can see that there are a number of targets we can

These are all examples of things addressed in the CBT for chronic pain. These are areas including biological, thoughts, emotions, and behaviors, social. These are all of that really important things for understanding and we address all of these and we can help them modify some things to get them to do it. These are things that really impact people and their ability to manage pain. We can decrease pain with things that impact their ability , we will get rid of behaviors that prevent them from doing certain activities because that will actually make their pain worse so we prevent these things and it will be beneficial in the long term. Social is not only getting them to understand they have to come indicate with family because again the family does not know what is going on and a lot of the issues that come up, they are going to come in the family actually believes that something is, like, their pain behaviors, like, the patient is angry or frustrated or whatever, and if you are not communicating, they think it is because of something that they did. So it is really important for them to come indicate with her family as well as communicating with the provider, telling them exactly what is going on with them so they can better help them. And if they don't know there are social issues going on at home, that is impacting pain, they cannot actually see one of us because they don't of these things are happening so they are kind of dealing with something else that is missing and we are not able to deliver that because of isolation which makes pain worse but also makes a depression were so it's really important for the patient to interact with other people. Sometimes people actually it helps to people watch because you get rid of the negative mindset and you no longer thinking about pain and you are thinking about what you are seeing around use of the more that you can use your senses that are again focused away from the pain, the better it is. So people watching is one of the best things. Go to Walmart, go to the mall, watch people, see in public what people are actually wearing, doing in public, all of the things, again, our distractions and helps you get out of the negative mindset and keep your pain out. All these things are just in there so many things with how to address pain but that is what the patient needs.

Now that we have covered the assessment consideration, we covered the model, let's look at an example case and see if we can identify some biological, psychological, and social factors that we target over the course of treatment. This case example is taken from a CBT for chronic pain manual that was developed by the veteran’s health administration. Reggie is a 64-year-old African-American male Vietnam Army veteran with bilateral foot pain due to diabetic neuropathy. He also has joint pain in his knees and ankles. His primary care physician referred him for assistance and better managing his pain. Reggie was diagnosed with

diabetes 9 years ago. But the painful tingling and numbness in his feet has worsened over the last 2 years. He is now mostly sedentary and spend most of his day watching TV in his recliner. While he was overweight when diagnosed, he is now morbidly obese. His A1C is 9. He has gained 30 pounds this year. His provider shared that Reggie has not been taking his medications consistently and is not managing his diabetes. He discontinued physical therapy after one session since he created increased pain. Reggie is frustrated and angry about his lack of mobility and to use a rolling walker when walking long distances. He has been married for 35 year and describes his wife as an angel. However, he feels guilty that he is unable to help more around the house, with yard work, and he snaps at her because of his pain. He wants to be able to play with his grandchildren and be more active at his church but lately he has not been attending services since it is too difficult to get going.

First of all, what are some of the biological factors that we need to be aware of? What are likely impacting and perpetuating or maintaining Reggie's pain? Diabetes, joint pain, obesity, weight gain, he is exacerbating pain likely. On other thing that comes to mind for me, he was not taking his medication very consistently. He was not managing his diabetes well. So he is probably not, you know, following a diabetic diet, I would imagine. I would want to get more information about that, what he is eating and not eating. Clearly he is not following any recommendations. His Wife is an angel which enables him to sit around which leads to more sedentary behavior. Let's go into more of the psychological piece of it. So of course, some of these overlap, right, like, you have an overly solicitous caregiver who, you know discourages you from getting up, she will do a thing for you so you are not going to move as much which that may impact your mood because you might feel bad about yourself. I think you said he feels guilty that he is unable to help move more around the house and do more yard work. So like there's a lot of overlap here but if you move into some of the psychological factors, may be assessed for consider treating, what we want to think about as far as when I say psychological, I mean thoughts, emotions, and behaviors. Guilt, unable to help around the house etc. Yes, frustrated, angry, gave up on PT after a single session because it increased pain. Yes, avoidance behavior. Motivational to play with grandchildren. Where is he at in the model? It sounds like he is expecting his pain to improve but he's not realizing that you might have to work through some pain first and is he willing to do that and where is he at in his motivational level. Yes, contemplation pick yes. He is a Vietnam era veteran. Is a possible that he has some past combat trauma? Who knows even what it is like before the war because our Vietnam veterans were drafted, and now this case example is reason several years ago, but I cannot help but just touch on the kind of parallels between our Vietnam era veterans and now our OEF veterans or the ones from Afghanistan that are very upsetting and triggering. We need to identify has he ever been evaluated for PTSD, has he ever had any kind of intervention, any psychotherapy to process events that he might have experience and we definitely want to know about that and whether current events might be re-triggering. Judgment values and goals , yes, no, what is important to you, what is it, do you want to watch TV in your recliner alterity want to, or is it that your wife want you to go to church and you cannot care less about those but you want to play with your grandchildren? We want

to know what the patient values, what does he want to be doing more of, we can move in that direction.

I will go ahead and also open up the social factors. These are all overlapping. But what are some social factors you want to think about with Reggie? Family, connecting with community, spirituality, service, it's not like that, yes, we want to make sure they are really his values and want to make sure that we are not misinterpreting his values. Want to make sure that whatever we are working on, whatever the goals are that we have in place, they are in line with his values, not the values of his caregiver wife and other people. Socially isolated, watching TV, withdraw from church, and not interacting with grandkids. Yes, he wants to be able to play with his grandchildren. He wants to be more active in his church. I always want to make sure, if you have a spouse or caregiver in the room, there can be value information but they can also be some information that is not necessarily helping out. What has he stopped doing socially? Was he ever apart of any VFW or American Legion or anything like that with, you know, other Vietnam era veterans, like, you know, did he talk all about work, so we assume that he is retired but what did he do socially, if anything, after retirement, if he is retired? Decreased social status perceived from using the walker. That is one important one that I talk about a lot with pain patients. A lot of folks you know, military veterans, resistant to using canes or walkers. They also have trauma history and PTSD going on because that active using a cane or walker they perceive as a sign of weakness, vulnerability which then triggers PTSD symptoms. They do not want to be perceived as vulnerable target and so they resist using assistive devices that might help with pain because it triggers PTSD. Decreased social status and also whether, you know, if he has trauma history. So yes, there is a lot going on with Reggie.

So now we can go into, you know, some of the things that were identified, some that may not have been, and you all, you identify things that were not listed on here, so bilateral neuropathic foot pain, secondary to diabetes, joint pain in the knees and ankles, we want to consider the impact on mobility, so the pain itself may be impacting mobility which is limiting him from being more functional. The obesity, weight gain, A1C, type considerations, you want to take that into account and A1C is 9, so he's probably not following recommendations. Inconsistent se of medications, he may need education on the need to stick it out and have a proper trial with medication or if there are other berries to medication, like sometimes there are psychological barriers, like I'm taking a medication every day, you have chronic pain, that can be triggering from an emotional perspective. You know we have unhelpful thought patterns that might be making him more resistant to taking medication. We really need to figure out what are the barriers to the inconsistent medication use and do we need to optimize behavioral strategies, do we need to do some cognitive restructuring, do we need to get social support on boards, it depends on what the barriers are.

So psychological factors, he's frustrated and angry with limitations, we want to assess for other emotional symptoms and PVCs of mental health services, and we think especially at this point now, he is a Vietnam veteran, you know, was he exposed , does he have PTSD symptoms, we do

not know, so we need to find that out. And also, have a better understanding of his beliefs about pain. So if you or he is expecting to go to one physical therapy appointment and feel better, that is not a very, you know realistic belief. Socially, he has a supportive wife, however, she me be over solicitous in her behavior and encouraging her to allow him to be more proactive. For whatever reason she may have, you know, doing role-playing with him to come indicate to her better that he needs to be more active and then other social isolation activities, he's not playing with his grandkids, he is not going to church, he's watching more TV, so all these things he point out, so we want to see, again, I think, somebody mentioned one, values and what is important to you, do you care about your committee, do you care about your church, do you care about those values, let's focus our energy on trying to increase social engagement and activity level in areas that are going to give you the biggest bang for your buck. In terms of activity level, emotional reinforcement, satisfaction, enjoyment and what his values are.

Now we are on objective 4, incorporating mindfulness. Mindfulness and acts, you can use mindfulness to help patient learn how to start focusing on being in the present moment instead of thinking about the past like what their bodies to be able to do or what the future is, what am I going to be able to do now that I have my pain, so you can use a lot of relaxation as well to help them learn how to decrease pain and move forward. You can use active strategies to help the patient come to terms with their pain and except that pain will be part of their life but they do not have to like it. They just have to accept that it will be there so ACT can be using a combination of CBT treatment or as a standalone treatment. It depends on what is going on so if you try to incorporate that, you can weave it into CBT pick if you feel like the person does not resonate with CBT, you can use it as a standalone treatment. Acceptance allows them to live the life they want to live without it causing them so much distress. The goal is for them to accept the pain to move forward. Some requires the grieving process and understanding what the pain is, that it will be part of their lives that it won't go away. Ask them what they want. They want and expect the pain to go away but we won't be able to come up with something that alleviate pain completely. The goal is to decrease pain and allow quality-of-life to increase so they can function more. So what is the real objective for pain management versus what they expect?

Mindfulness is cultivating an awareness that requires a new way of looking at the process of learning. Is being present in the moment. That's trying to get them to look at things from a different perspective instead of just trying to think forward or backward pick it as being in the present moment, being able to really resonate with the pain is going to be here but I will let it bother me. I won't let it rule my life. We can then do other activities with them. ACT is not just mindfulness. ACT uses mindfulness to affect and observe the self in the present moment pick the observing self has no words. The thinking self is constantly chattering and thinks about things. The observing self is being in the moment and looking at what is going on. Mindfulness, by helping us notice our impulses before we act, gives us the opportunity to decide whether to act and how to act. That is getting the patient to understand that things happen to us and it's really how we react to situations and that’s what

we need to go with. Things happen all the time. It's how we act and how impulsive we are and what we are doing is what we need to take care of. The benefits of mindfulness are physical and mental. Increase energy, improve sleep, reduces chronic pain, improves heart function, helps with digestive problems, relieve stress, reduces anxiety, improves mood and happiness, booze concentration and focus, improve self-esteem. With mindfulness states of meditation, we change the way they look at it. There are seven attitudes of mindfulness. The first one is non-judging pick everything we do, we do to, we judge everything. So no matter what we do, the first minute we walk in the door, we judge. We may walk into a room and see a chair and say this is a badger or a good chair pick I will listen. We don't know until we experienced it that we judged already based on what it looks like. We do that with everyone we meet also. You may meet a fighter and say horrible provider because they had a negative interaction one day but instead of thinking we had one bad day and I will give him another chance, no, they are completely a bad provider and I don't want to see them anymore because they will not be able to help me. So it's getting the patient to understand that we have to just go in and experience things so we need to just see it from the non-judging perspective instead of going in with our own past experiences and judgment and already tainting the situation pick we have to go in with a non-judging stance and understand we need to experience it. The next one is patients. Things have to happen in their own way and in their own time. Patients have the mentality that they want things to happen immediately, instant gratification, pain management, but that will not happen. There is no instant gratification. There is no instant relief when it comes to pain in the long term. You may get instant relief from the injection. That's short-term. They need to learn that things will unfold in their own time. Trust in yourself even if you make mistakes rather than looking outside of yourself. This is important for patients pick they trust they make the right decisions for themselves even if they make them and they are wrong at the moment pick they trust they make their right decision and then we can push things forward. We bring in our own experiences and education that can be helpful. Again, they have to be the ones that make the decision for themselves. If that makes sense, they will try and they have to make the decision so that again, they are the ultimate authority of their own body and we are not, we are only authority with education and experience that we have with that condition. That they are the ultimate believe in themselves.

Next is non-striving pick we do everything for a purpose. The goal is to try to not do that. The goal is just to be in the moment. We do not have to strive to go somewhere or get something all the time. Sometimes we just need to be in a moment and experience what is. Sometimes it is just hard for people to do that. It is hard or people to be in a moment and just be. They feel like they should be doing something else. If you are always looking for beautiful things around you, you have that mindset and you are thinking I will keep looking for something that is beautiful for me to take a picture of versus again you just keep moving around and not really paying attention to little things that are going on around you, you are not noticing the little things that are happening for you so that is a really great example. Thank you.

Next is acceptance. We want to accept what is. It doesn't mean we cannot change it. We just have to accept it is happening right now. When it comes to chronic pain, the goal is the second have it you have to like it. You don't have to love it. You have to accept that you have it and you experience it for us to move forward. If you do not accept it, I'm trying to get you to look at this as this is happening for you and if you are not paying attention to it, we cannot move forward. We have to wait until you accept and acknowledge his is happening in order for me to move forward pick now that you have accepted, now we can start processing and learning to function and live with it. The last one is letting go. All too often, what happens is your mind was to hold onto a positive thing and really negative things. You will never remember a mediocre day. You won't know unless it's emotionally charging. We don't actually need negative things. Negative memories bring you down a lot more versus if we focus on remembering the positive and holding onto those. We do not want to hold on to thing that will make you feel worse in the long-term. We want to hold onto things that are going to be beneficial and help you continue to move forward versus things that will cause more distress. This is a good example of using mindfulness. This means you stop what you are doing in the moment and find things that are actually going on and notice what is happening within and around you. And accepting is kind of tricky for people but accept when you are struggling with something. Acknowledge it is happening without judging it. The next one is to be curious. Ground yourself with questions about your experience. What am I feeling, what am I doing, what am I experiencing, what can I see, all things can be grounded a little more. And kindness, respond with kindness, respond to yourself with kindness and observe what is going on and respond with kindness. It helps to take a moment to just be mindful and calm things down in the moment. Ground yourself. Get yourself away from thinking about anxiety, depression, and pain whatever. It helps to be in the moment.

Acceptance and commitment therapy, ACT, uses acceptance and mindfulness strategies together with commitment to valued actions to increase psychological flexibility. Psychological flexibility means contacting the present moment fully as a conscious human being and is based on what the situation affords. Changing behaviors in the service of chosen values, again, what you value, what we are actually trying to strive for is the goal. So again, that is what we are trying to look for is the things you value in life and striving toward that. Adopted psychological flexibility, using the story of the old farmer, there once was an old farmer who had I met. One day I went up to the fence and readily pick now you have no words to pull our flower planting time said the neighbor. What bad luck this is pure good luck, bad luck reply the farmer, who knows. The next week return bringing with her to while stallions with. With three horses you are not a rich man the neighbor said, what good fortune this is pure good fortune bad fortune apply the farmer. Who knows pick the afternoon the farmer's only son try to take one of the style is most notable collecting now you have no one to help you with planting the neighbor said. What bad luck this is pure good luck bad luck reply the farmer. Who knows, the next day the Emperor soldiers rode into town and can strip to the oldest son of every family but the farmer's son was left behind because of his broken leg. Your son is the only eldest in the province who has not been taken away from his family. The neighbor said

what good fortune this is pick the whole point is to understand that we want to have some flexibility and understand that it can be considered good or bad but again we do not want to label it. Once we label it, now we are stuck in that mindset. So we label it as bad fortune and we will think of it as bad and it's a mindset versus if we understand that it can be good or bad in the situation but again we do not want to label it and we can just experience it.

It's the same thing when it comes again to the serenity prayer. Sometimes people try to solve problems that cannot resolved and have a hard time accepting it pick this leads to greater suffering. When people get stuck, like, the mindset of thinking, like, I cannot, like, pain should go away, like, we have to get rid of it, in terms of accepting that, it is going to be a part of your life, the chronic pain, the acute pain, so when it comes to, like, in the chronic sector of it, it is going to be there, we cannot actually get rid of it now, but when you keep trying to get rid of this pain in terms of accepting it, it is going to cause you to discontinue suffering versus thinking that we can, it is going to be part of your life, we can continue. That leads to acceptance and commitment therapy. Control of pain is the problem, not the solution. Patients are trying to solve pain. There trying to get rid of it. That is their focus of the situation pick but that is not the solution. When we focus too much on pain, or pain control, it causes more distress. It's like being caught in quicksand. You are trying to get out of it that you are struggling and will that help you or hurt you? Okay. It comes to quicksand, if you are struggling, you are actually making it worse. You are getting stuck and you're getting pulled on faster because yours so much to get out you are trying to come up with a way to solve the pain instead of understanding that those are tools to up you learn how to live the life that you want to live. Is not to get rid of it. The goal is to understand that we are not using the tools as a way of getting rid of the pain. We are using tools to help you manage it more and we can move forward. If you see that some patients get to the point where it's not getting better, what makes you think the next thing you will try will make you get better. So like, if you try all these things before like surgery and medication but you are, like, okay, what do you think the next thing will be that will help you and how you will get rid of the pain so controlling it is again a problem and we are trying to control it too much and then that is the issue that we are having with pain. Take a moment to reflect. When patients think back, they understand that they are related. Pain and stress are related. When you try harder to control a change of pain that is a problem. We cannot just try harder, let’s do more physical therapy, and we will get better. When it comes to chronic pain that is not true. You are not going to get better in a sense of what they are looking for which is, again, complete pain relief. You are not going to have that. You are going, if you continue with pain therapy, it will help shrink in your body. You will have, again, control of how your pain can impact you when it comes to activities. But it is not going to go away. So again, people have to come to terms with that. So many people are aware of the fact that again it is just not going to go away and the more they keep trying, trying to make it go away, it will be problematic. Physical sensations, thoughts, mood, functioning interact in a way that contribute to increasing problems a decrease in quality of life. Is it possible to use these relations in a way that is of benefit to us? Yes.

If this is possible, what do you do to control, escape, or avoid pain? An example is the Chinese finger cuff. Think about this as your pain pick what happens when you try to avoid or escape pain? You are making it worse pick are suffering pick you are giving yourself more distress because we try to get out of it, try to avoid the situation, avoid the pain and get out of it versus what happens when we come back and come closer together, we are able to take our figure out pick that is the same thing when it comes to pain pick the more you come closer to accepting it, the easier it will be to manage it versus if you keep avoiding it, escape it, you will have more distress, you will have more suffering. So it is better and much more beneficial for people to actually come to terms with it, with their pain, then you could accept it and you can make modifications around it. We have three different choices. We have pain and other physical sensations, thoughts or moods, or functioning. Focusing on pain is not the most important target. We do not want to focus on that as our target when it comes to pain management. We cannot change that long term. Changing her thoughts and mood can be problematic. Changing just one thought or mood and just wanted to change it will be difficult. If you wake up, will it change your mood? No. We can't just say don't do that anymore. Most of us have a job, at that point but that is not beneficial so it is, like for example, who wants to win $1 million, and everyone is like I want to win $1 million but again you have to, it is very difficult and no one can just fall in love with anybody and again you can have $1 million so it's very difficult, again, for people to experience or change limit immediately just by telling you that you have to do it.

Same thing if I told you do not eat the chocolate cake because people will think about chocolate cake because and tell you not to do something. When you tell your mind do not focus on pain without replacing it with something else, the mind is going to want to focus on it more because, again, we told him not to do it. It is like a child when you tell them do not push a button, and you now want to push the button because, again, you told him not to do is that they are, like, what does it do, I do know what it is, I want to actually touch it, so they are going to eventually push the button and again, you told him not to do it. So that makes it very difficult for your brain to kind of get away from something as well, again, if you're constantly tell yourself do not think about the pain or, you know, let's go do something else and try to distract you away from it, again it's great for short periods of time but you cannot do long-term. Your brain is always going to be looking for pain because of the activity. Once they figure out what it is and try it sometime but it comes traumatic or your thoughts may not be the best target for your effort leader when it comes to ACT. Function may be a factor where you put your most effort into and you'll get the most impact from it. So determining what is it that you want to do, it can help you kind of director effort. We can kind of develop and achieve different goals to help you kind of maximize your ability to achieve some form of success and come to what is it that you value when it comes to some functional goal. That is where we want to target things, especially when it comes to team management, we went them to focus on functional goals, not focus on the pain. Do not focus on the pain relief. What will he be able to achieve if his pain decreases, we wanted other things, how can we get you there, so again, that is where pain provider again, need to start

focusing and say what is your function, what is it that you want to be able to do now and can we help you get the pain down and so that way we can target and we are all working on the same page with goals.

So again, notice the issue is that, again, there is some way out of pain. Like you see it all the time. You take this medication. People start thinking what I do to pursue all of these other things that we were talking about doing them like they said he don't to focus on a because there is a way they always get out of it and so we do not need to work on it so unwillingness to have some form of pain is having a great effect on their life. It causes more suffering because, again, they don't want to feel it. If there was a way to get rid of the pain already, would have already found it and moved on. They would have actually gotten better and they would not have any pain moving forward. But again, that is not the case. There is nothing to get rid of their pain and so they have to have some willingness to have some form of pain. So again, that is the life analogy. So again, the patient understands that pain is a passenger on the bus. We want them to understand that they are going to be there and we cannot get rid of the passenger. So for this part, want to make sure that the patient is driving the bus and not letting pain drive the bus pick up Angel drives a bus, it actually is taking you in different directions and it is not taking them to a place that you want to go. It is only going where you want to go and it is not helpful for you so you want to make sure that pain is behind the yellow line or further in the back so that way, again, it is not causing so much distress the further back in the bus versus if it is at the beginning and closer to the liner above the line, it is actually impacting a lot more than sometimes it can get in front of you start driving the bus so it needs, the patient has to understand that it is important that we know we can get rid of it. We can move to the back of the bus and we can do other things that are beneficial for you and being mindful of the situation and what is happening in your life and actually, again, striving toward the thing that they value in life. So all of those things combined will be helpful for them for thinking that, again, we can just get rid of the pain. We cannot get rid of the pain. Pain is a passenger on your bus. So pain and distress can be your greatest friends. Can I think or feel one way and behave in the opposite manner? Think of a time when you acted Riches after receiving an unwanted gift. Most people do not understand chronic pain. They understand acute pain only. It is important for the patient to come indicate about what is going on. Someone needs to bring them to their point is that they understand what is going on as well. The patient should also look for, again, groups or ways to interact with people who are not in pain because sometimes it does look like they are the only person who has chronic pain and that is not true. We would not be here And we do not show them the other people that actually have pain also. They feel isolated. They feel like they are not able to, again, interact with other people because they do not know that the people are actually around them that actually have pain. It is getting past the feeling of anger and understanding the situation happened but we can get to a point where we can function and we can improve quality of life. You can do things you want to do with modifications.
Patients think I see the pain to go away and then I can go on vacation in all this stuff. Usually don' like to go on vacation until they reach a certain number and then if they are like I cannot go to vacation until I

met 3 and they live a 7 and they were all there for 2 years, though if it is never at 3, that is not a functional goal We can't get you to 3 but we can teach you how to modify activities so you can go on vacation and maybe how to prepare and you can apply some, it's three or more hours, how can you deal with, like, taking a plane, how can you deal with, like, being in a new environment in a different situation where it may have whether changing were often so those are things that can help you modify and enjoy where you're going to being in an environment sometimes improves pain because, again, we are taking a break from all the structures that are going on and being on vacation feels better and sometimes they do have as much pain because they are in a new environment. Sometimes it is going to a warmer climate and it makes the pain better versus, again you can help them think to the process and understand that we do not want to put the life on hold. No one understand chronic pain except for people that are actually in the field or people that have the pain. So they have to learn to communicate. They will get frustrated with nurses and others and get angry situations that they cannot do anymore and it's important for them to talk about it. The more the bottle of emotions, the more the body does not like it. It is poison and it starts to push it out and it causes more pain. We want to get rid of those emotions. We want to talk about it, we want to Journal it, and we get whatever works for them. They need to get rid of the negative emotions in order to feel better otherwise everything will get worse from that psychological and physical point. To achieve success in treatment for chronic pain, sometimes it is important to change expectations as well as the focus of treatment. We want to make sure we focus on what are the values and move forward. We want to make sure the patient understands we do not want to make them suffer. But again, you will have some form of pain that we cannot get rid of so once we come to terms of it, then we can help them process and learn that suffering is optional. Take action and experience all the difficult life changes. Life constantly changes. Nothing stays the same. It is a constant adjustment. They have to learn to deal with adjustment. The more they fight it, the more it becomes chronic for them. They have to learn that things will change from what they are. They should be aware of doing mindfulness every day. Be in each moment without trying to r have a desire to change it. You just need to be. If they can experience what is right now, just be in the moment, experience life.

Any questions? We are open for questions. I don't see any questions coming in. There are no questions. Thank you all for attending this training. We are very passionate about CBT. We are very happy and glad that we were all able to attend this one. Thank you for coming.