

## **DCoE Psychological Health Webinar (January 2014)**

### **Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations**

Welcome, everyone. Thank you for standing by. All parties will remain on listen-only for the duration of today's call. This call is being recorded; so if you do have any objections, please disconnect at this time. And now I'd like to turn the meeting over to Commander Renee Pazdan. You may begin.

Good afternoon and thank you for joining us today for our January webinar. My name is Commander Renee Pazdan. I am the Officer in Charge at the Warrior Recovery Center and Neurology in Fort Carson, Colorado. I will be your moderator for today's webinar.

Our presenter panel consists of Dr. Anthony Panettiere, Dr. Jonathan Olin, and Captain Laura Grogan. Before we begin, let us review some webinar details. Live closed captioning is available through the Federal Relay Conference Captioning. Please see the pod beneath the presentation slides.

Today's webinar is hosted using the Defense Connect Only and Adobe Connect technical platforms. Should you experience technical difficulties, please visit [www.dcoe.mil/webinars](http://www.dcoe.mil/webinars) and click on the troubleshooting link under the Monthly Webinars heading. There may be an audio delay as we advance the slides in this presentation. Please be patient as the connection catches up with the speaker's comments.

The full presentation, a webinar resource list, and a handout list are also available in the File Download box. During the webinar, you are welcome to submit technical or content-related questions via the Question box. The Question box is monitored, and questions are forwarded to the moderator for response during the Question and Answer Session held during the last half of the webinar. Our presenters and I will field as many questions as time permits. Please feel free to identify yourselves to other attendees via the Chat box. However, please use the Question box for technical or content-related questions.

Please note that Continuing Credit is not available for this event.

I will now move on to today's webinar topic, Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations. Our three presenters' collected expertise includes neurology, psychiatry, sleep medicine and occupational therapy.

Webinar participants will learn to integrate the key principles of conducting a sleep assessment, explain evidence-based practices that improve patient complaints of disturbed sleep and nightmares; discriminate when a medication or non-medication sleep intervention would be most beneficial to the patient; engage the patients in participating, practicing and documenting sleep hygiene techniques; determine when a patient would be a good candidate for a sleep study or sleep consult.

Today's first presenter is Dr. Jonathan Olin, who will be speaking on Sleep and Insomnia Assessments. Dr. Olin completed a psychiatric residency at Massachusetts General Hospital and became board certified in psychiatry and forensic psychiatry. More recently, he has specialized in sleep medicine and interpreting sleep studies and is board certified in sleep medicine. Dr. Olin currently serves as Medical Director of the sleep lab at Evans Army Community Hospital at Fort Carson, Colorado.

Welcome, Dr. Olin.

Thank you very much. Thank you for the introduction, Dr. Pazdan. I appreciate that.

Welcome, everyone, and thank you for attending.

I'm going to move on here to slide 8, which is Disclosures. As you can see, the opinions and views of my presentation do not reflect the official policy of the Department of Navy or Army, the Department of Defense of the U.S. Government. In addition, I have no financial relationships that are relevant and do not intend to discuss off-label/investigative medications.

Go ahead, next slide please – it would be number 9.

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

I would like to review with you that most likely what your mother told you about sleep is actually accurate, that sleep is important. Many of you I think are mental health providers. If your patients have a sleep disturbance or sleep complaint, improving their sleep will overall help them improve. Individuals with disrupted and inadequate sleep are often then associated with additional medical problems impacting their quality and quality of life. These include morbidity, mortality, elevated mortality, obesity, diabetes, cardiovascular diseases and other psychiatric diseases, including anxiety and mood disorders.

Next slide, please.

In addition, improved sleep for a person with sleep disturbance will often be associated with a happier person. A review of medical problems indicates that unhappiness is closely associated with three conditions: sleep disorders, depression and pain – not diabetes, not hypertension, for example. So if your patients have one, two or all three of these complaints, they may be unhappy; and their quality of life will improve dramatically if you can help them with one, two or three. So the person will be happier and may be very grateful.

Next slide, please. This is slide 11.

Does adequate sleep equal good health? No, not necessarily – so adequate sleep or good sleep is sufficient, but not the only requirement. In other words, good nutrition, general other health – necessary but not sufficient is what I should say. If your patient complains of feeling anxious or depressed and also sleeping poorly, helping them with their sleep will also help them improve overall.

Next slide, please. This would be slide 12, please.

How many of your patients report sleeping poorly but feel good the remainder of the 24-hour day? In other words, if they're having problematic sleep for six to eight hours, they're then going to continue -- that will bleed over and impact the remainder of their waking hours and days. So their sleep will need to improve in order for them to feel better.

Next slide, please.

Patients now may underestimate the importance of sleep. There's evidence that 100 years ago -- in other words, prior to widespread use of electricity -- that we slept in general eight to nine-ish hours a night. In other words, sleep deprivation is associated with our recent ability to maintain daylight activities at night.

Next slide, please. This is slide 14.

Is it a sleep disorder per se, or is it associated with a comorbid condition such as anxiety, pain, mood, environmental factor, for example, a newborn or a noisy sleep environment, medications or substance abuse?

Next slide, please.

Understanding these kind of multiplicities or complexities of the situation may then help with treating and ferreting out what is actually going on and then addressing those issues. So if there's a mood disorder or an anxiety disorder, directly treating that; obviously pain; improving sleep environment; addressing medication substance use – in other words, trying to treat all the conditions that are comorbid or an actual sleep disorder, per se.

Next slide, please. This is slide 16 that we're on.

I'm going to talk now about doing an overall sleep assessment. It's important to understand what the patient's chief complaint is with sleep. In other words, are they not sleeping enough, which would be

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

insomnia, or reporting too much or excessive daytime sleepiness? That can be seen as a chief complaint or a chief complaint with a sleep disorder, such as obstructive sleep apnea. Or sleep physicians will refer to parasomnias, "para" meaning like and "somnia" sleep – sleep walking, for example, things that go bump in the night.

Next slide, please. This is slide 17.

So in general with a sleep assessment, we're asking patients about their average daily caffeine use; their average daily or weekly alcohol intake; their psychiatric history; for example, in this population obviously symptoms of Post-Traumatic Stress Disorder in their medical history, for example if the pain is a factor with their sleep.

Next slide, please.

I ask about family sleep history – if anyone in the family has been diagnosed with a sleep disorder. Review vital signs – this is especially relevant for obstructive sleep apnea. And I would do a physical exam, which would include looking at their nose and mouth and their general appearance. Are they snoring in the waiting room while waiting for the appointment? Do they appear profoundly anxious?

Next slide, please.

There are some specific sleep disorders that some behavioral health clinicians may not be full aware of. There's something called Restless Leg Syndrome or RLS. You can ask about this with one relatively long question with a core component and ask the patient, "I have a complex, slightly unusual question. Do you have a creepy, crawly feeling or urge to move in your arms or legs that's worse at night, interferes with your falling asleep, and gets better if you get up and move around? You need to have all these four components to meet criteria for RLS. If they report, "Yes," I'll then ask how many times a week this occurs and ask them to estimate approximately what percentage of their insomnia is related to this condition.

Go ahead. Next slide, please. This is slide 20 now.

For assessing regarding Obstructive Sleep Apnea, or OSA, you can your patients the following questions. This is typically a condition that is seen with overweight, middle-aged males but can be seen with younger, thin females. So it's not exclusive. But ask your patients, "Do you snore? How do you classify your snoring – mild, moderate or severe? Has anyone ever observed you stopping breathing or choking or having apneas at night while you're sleeping?"

Next slide, please.

Obstructive sleep apnea is often associated with excessive daytime sleepiness, as I indicated earlier. You could consider using the Epworth Sleepiness Scale, sometimes referred to as ESS. Scores of 10 or more suggest excessive sleepiness, and also doing the assessment consider speaking or speak with the bed partner to confirm a history of snoring or actual apneas.

Next slide, please.

For assessing insomnia, I like to review the patient's average daily schedule. How do they get ready for bed? About what time do they put their head on the pillow? And then what? How long does it take to fall asleep? How long do they sleep for?

Next slide, please.

On average, what are the number and duration of awakenings? What is the approximate total sleep time on average? Is there weekend variation? Are they sleeping until noon on the weekends and getting up at

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

0500 weekdays? When they wake up, do they look at the clock? Are they "clock watching" at night? And are they reporting nightmares?

Next slide, please. This is slide 24.

You see a brief definition or a definition by the American Academy of Sleep Medicine about what a nightmare is.

Go ahead. Next slide, please.

With the actual treatment of the conditions, including insomnia, in general I like to prioritize treatment. So many patients with insomnia, for example, report multiple factors contributing to their insomnia including anxiety, maybe nightmares, maybe a pain, maybe caffeine use. So I'll ask, "Approximately what percentage of your insomnia is due to your need or urge to move your legs," for example, or "What percentage of your insomnia is related to repetitive nightmares?"

I then review that insomnia is indicated as often multifactorial, with a straws-on-a-camel's-back type of situation or analogy, and that each event or each factor may not be profoundly significant; but in combination, they're significant. And it's our job to be collaborative with the patient, attempting to remove straws, remove potentially some of the factors or straws that might be cinderblocks or very big factors – remove them or reduce them so the patient can gradually get better.

I also like to review with a patient that this can take weeks. If they've had insomnia for weeks or months or years, that it may take weeks with a tapering of caffeine and treating of legs, treating of nightmares for their insomnia to get better.

Next slide, please. This is slide 26.

Indications for an overnight sleep study – this is for the overall sleep assessment. In general, the major concern or major rationale or indication for ordering a sleep study is concern about obstructive sleep apnea. So I've already mentioned significant snoring; observed apneas; often, but not always, excessive daytime sleepiness.

Go ahead. Next slide, please.

There are also additional indications – this relatively uncommon condition of narcolepsy. That would be a separate talk in and of itself -- but people abruptly falling asleep and concerns about narcolepsy. And atypical parasomnia – for example, people that are sleep walking in an atypical or significant way. If someone has a childhood history of sleepwalking and sleepwalks once or twice as a young adult in the military, I probably wouldn't order a sleep study. If they're walking around outside or cooking, I may order a sleep study, especially if I have even a low threshold or concern for obstructive sleep apneas that might, if they did have sleep disorder breathing, fragment their sleep and make sleep walking more likely, and also rarely to look at other leg movement disorders – actually not RLS, but leg movement disorders.

Go ahead. Next slide, please. This is slide 28.

When to refer to a sleep medicine specialist – referral obviously depends on your skills and a patient's response and your access to a sleep medicine physician or specialist. In my opinion, it's appropriate for many behavioral health providers who are not prescribes to refer either to the PCM, primary care physician, or to a sleep medicine physician if there are significant concerns about possible destructive sleep apnea, narcolepsy, restless leg syndrome, or insomnia or nightmares that are refractory to non-medication treatments.

That's it. Thank you very much.

## **DCoE Psychological Health Webinar (January 2014)**

### **Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations**

Thank you for your presentation, Dr. Olin.

If you have any questions for Dr. Olin, please submit them via the Question box.

Today's second presenter is Dr. Anthony Panettiere, who will be speaking on Rational Use of Hypnotics to Treat Insomnia. Dr. Panettiere is a retired Navy Captain, who served 25 years on active duty. He served as a Surgeon General Specialty Advisory for Neurology and was involved in the establishment of the sleep laboratory at Naval Medical Center Portsmouth. He completed fellowship training at Duke University in sleep medicine and is board certified in both neurology and sleep medicine.

Dr. Panettiere is currently employed as a clinician and researcher of Traumatic Brain Injury and PTSD at the National Intrepid Center of Excellence in Bethesda, Maryland.

Welcome, Dr. Panettiere.

Thank you, Dr. Pazdan; and thank you, Dr. Olin, for your presentation.

It's a pleasure to be with you this afternoon. I will be speaking about the use of hypnotics in the condition of chronic insomnia, particularly.

Here at NICoE, for those who might not be familiar, we are an institute which is involved in the clinical treatment and research of combat veterans who have still active duty, who have a history of mild TBI and PTSD and in the cases where they have been recalcitrant to treatment and have persistent and prolonged debilitating symptoms.

So they will spend four weeks here, staying at the Fisher House as an outpatient involved from seven in the morning to approximately four in the afternoon, seeing various specialists who have a relevant role in speech occupational therapy, neurology, sleep medicine, complementary medicine with various relaxation and biofeedback techniques, as well as spiritual moral injury aspects as well.

We find that insomnia particularly is not just an ambien fix or a lunesta fix. It really is multidisciplinary; and, at least for the more complex cases, having a number of various parts of the condition treated by specialists in a concurrent way as opposed to serial seems to be very effective.

Our experience here is we have been open about three and a half years, and I joined shortly thereafter. And virtually every one of the 700 or so patients we've seen here has sleep disturbance. Most of them have insomnia, and a large subset of them also have sleep apnea. So as Dr. Olin referred to the various components of insomnia, trying to break that down, trying to delve into what might be contributing each of them to the cause of insomnia.

So I'd like to go to the next slide, which is on the disclosures. I have no relevant financial relationships and no off-label indications that I'll be discussing.

My objectives today, my bias naturally is in sync with the typical person you'll see in a military clinic where they generally do not like to be on medications. They'd like to find ways to treat it. Most cases of insomnia are best treated relying on the techniques that don't involve medicine. Captain Grogan will be covering some of those; but there are obviously indications for these medications to be used at times, at least in the short term, and I'll be covering the way to do that.

We're on to slide 33 now.

So I start with first of all, is the service member coming in with acute insomnia where you in the primary care level might be more likely to first see them; or do they have more of a chronic insomniac condition where they've had difficulty sleeping – a sleep disturbance of some sort – for at least several months?

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

So if someone comes in and says, "Hey, my grandfather just had a heart attack. He's in the hospital. This is sudden news. He was otherwise well. I'm not sure how he's going to do. And that kind of stress has made it very difficult for me to sleep the last few days." They were otherwise a good sleeper up to that point. And certainly using short-term use of hypnotics would be reasonable, which I'll be covering here shortly. The ambians and lunestas and those type of things might be certainly reasonable.

Should you do that though, I recommend strongly that only prescribe, say, seven pills. Give them about a week of it and say, "I'm here; and I need to see you back to make sure that this condition has improved." If you don't do that and they call in and say, "Hey, I need another seven days, another month of it," you're going to end up, for at least a large number of patients, converting them to chronic insomniacs, which gets to be much tougher to treat. So as long as they know they have someone who's following it, concerned about them, potentially needing to stay on hypnotics, it's much advised that you give them just a short-term supply and agree to see them back in the short term. Even if they're better, you want to know that. And that gives them reassurance that their sleep is going to get better once their external stressors improve.

I also sometimes will recommend hypnotics without a major workup if somebody has a lot of trans world travel, particular if it's five time zones or more and they're moving from the West to the East. So they fly from, say, Hawaii back to Washington D.C. They're about six time zones off. Usually each time zone, each hour is about a day to adjust. So perhaps the use of hypnotics for a week or so can help to pull them back into a sleep schedule that's in sync with, say, the East Coast if they came from the West.

And I also occasionally will use hypnotics when someone just gets on the CPAP.

So those are sort of the easy ones where you don't have to do a lot of delving and you might consider it reasonable -- but again, just maybe a week's worth of medicine for those cases. My focus really though is the chronic insomniac. So the questions I ask are: How severe is your insomnia? How long have you had the condition? How frequent? How many nights a week or months do you wake up or have difficulty falling asleep? Is there any pattern to it? Sometimes people are working in the day and taking college classes at night. It's pretty hard to close a physics book and expect to fall asleep right away if you were up late studying.

I also get a sense of what does their night ritual look like? Do they have a buffer between the busy activities of the day and their attempts to go sleep? And again, life presses on at the end of the day, trying to keep you later and later staying up. And then it presses on the morning to get you up to go to work or go to school. So we tend to think that sleep is something that we can compromise. In the short run that is certainly possible; but over the long term if it gets to be a habit, then it tends to have a lot of detrimental effects.

So the other point I would make on this slide is, again, if somebody does wake up in the middle of the night, how long does that last? If it's a few minutes, I'm not too bothered by it. A sleep cycle for a person is about 90 minutes. You have five sleep cycles a night; and at the end of each of those 90-minute cycles is when you're relatively light and most likely to be alerted and have to get up to, say, go to the bathroom or notice your pain or notice sounds in the room.

Okay, we'll go to the next slide.

I'm going to be covering each of these pharmacological treatments that are either used by patients against medical advice or prescribed by providers.

Next slide, please. We're on slide 35.

A lot of patients try to treat their condition themselves. They go to the drugstore, and they pick up something like over-the-counter Sominex, which is simply diphenhydramine. Or Benadryl is another agent they might take to help aid sleep. And then there are of course combination treatments out there – the PM

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

formulations – Tylenol PM, for instance. And virtually all of them contain diphenhydramine or another antihistamine, doxylamine.

And the effect of a histamine is to keep you alert through the day. There are two troughs in that release of histamine; one occurs in the early afternoon, which is when most of the sluggishness occurs and you see five-hour energy drinks advertised on TV. And the other trough occurs around two in the morning, which is actually a time when car accidents are the highest when there's the least amount of traffic on the road. So those are two particularly vulnerable times where histamine troughing will create some sleepiness.

So the antihistamines work at blocking H1 receptors, which can produce sort of the same trough effect that you naturally have through your circadian rhythm. So when taken, they last four to six hours; and they're generally a very mild treatment and may be helpful for some patients. But in general they're not recommended because of their overall lack of efficacy.

The bigger concern with them is the side effects, particularly the anticholinergic effect that can occur, particularly in patients who may already be taking anticholinergic medications. Some of the inhalers that you have for asthma -- like Atrovent, Spiriva -- have anticholinergic effects. Some antiemetics, like scopolamine, do. And then some tricyclic antidepressants do; and particularly if they're older patients, they can have urinary retention, memory difficulty, confusion, even as bad as delirium by the combined use of these medications.

Next slide, please.

So complementary medicine using herbals and nutraceuticals is quite vogue these days; and as you see on the list here, all but the exception of marijuana. I mention the marijuana because obviously in a few states it's now legal. People will want to use that to help promote their sleep. But the typical herbals and nutraceuticals are all unregulated. The convincing evidence that they work is minimal, but the compounds are generally regarded as safe. The one exception I would make is the kava agent that you see on the list there. I wish the FDA had issued a warning about hepatic toxicity.

I'm generally not one to promote these medications just because of the lack of efficacy and due study of these agents, and then the potential interaction with other medicines they may also be taking. Melatonin I don't have on the list – actually also falls into sort of a nutraceutical category; but I'll be covering that more later, particularly as it relates to circadian rhythm sleep disorders.

Next slide, please, which is slide 37.

So in summary, regarding the antihistamines, herbals and nutritional, the Academy of Sleep Medicine does not recommend they be used for chronic insomnia due to the lack of efficacy and safety data.

Next slide, please.

Now I'm going to talk more about prescription medications that would be issued in a military clinic. We'll start with the benzodiazepine receptor agonists. In this category are the benzodiazepines that we're familiar with, as well as the non-benzodiazepines. I break the benzodiazepines down into two groups. There is this anxiety prominent group that you see here, and by that I mean these might be medications you would choose to use where anxiety is, say, 75% of the problem and because of it 25% is related to insomnia. So potentially, even though these medications I by no means take them lightly in terms of being prescribed, they do have a role, at least in the short run potentially or with intermittent use, to help with some sleep issues as they are provoked by anxiety.

Next slide, please.

The second group are the insomnia prominent ones that are sort of marketed as sleeping medications, as you can see in the list there. I don't typically recommend these be used. And as you'll see, as I show later,

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

there is a role for them; but they're further down in the line. Both benzo and non-benzodiazepine receptor agonists affect the GABAA receptor complex, making action potentials more difficult because of chloride influx and change in membrane polarity.

The GABAA receptors are widespread throughout the brain. And while that is how these medications typically work to promote a hypnotic effect, there is also suspect that there is a targeting of some regulatory nuclei in the hypothalamus, particularly the ventrolateral preoptic nuclei, that are involved in your sleep/wake cycle.

Slide 40, please.

We now get to the medications certainly most patients are familiar with, if nothing more by all the commercials on them; and these are the Z drugs. So the brand name ambien was the first of these, and is now available in the generic zolpidem. And it comes in a regular and a controlled release. Regular would be for someone who has just simply difficulty falling asleep. Controlled release would be falling asleep and staying asleep.

Intermezzo is one of the newer zolpidem medications taken during the night when there is mainly a history of nighttime awakening and difficulty falling asleep. Intermezzo requires that you have at least another four hours that you can sleep before you take it. It's a very low dose, 1.75 mg on the typical 5 mg to 10 mg zolpidem. AdvilAR is the sublingual version taken at bedtime, and zolpimist is the new cherry-flavored oral inhaler version of the zolpidem.

They all have very rapid onset of action; and other than for the intermezzo, they all require at least seven or eight hour of sleep that can exist before someone has to wake up. So if someone says, "I've got to get four hours; it's late at night and I've been awake," they should not be going to these because the effect of the medicine will still be apparent when they have to wake up and that could impair their function.

Two caveats I recommend in this group. In the case of – like how well these medications work – in the case of the zaleplon, which is the sonata, there was a study where subjects were given a 10 mg dose; and when compared against placebo, both groups slept the same amount of time, which was about 6 hours and 20 minutes. Those who took the sonata on average fell asleep 36 minutes faster than those on placebo, but it did not make any difference in their overall sleep duration.

Lunesta, the eszopiclone – in the study that used that, patients slept 37 minutes longer than controls, but they still only got about 6 hours and 20 minutes of sleep. So these medications are not home runs and people are dramatically improved when they're used. Particularly, they may have a decent benefit in the first week or two; but as the patient develops tolerance, they'll see less and less effect and have an inclination to want to increase the dose. I've had some of our service members be handed 10 mg zolpidem; and by the time they were on it for a while and got to us, they were maybe taking 20 mg and 30 mg and then just feeling sort of groggy when they got up in the morning without much better sleep.

The second caveat about these medications is they're well-known for causing a lot of automatic, complex behaviors arising out of sleep. So a person is not fully awake, has no memory of it, but they can actually get in their car and drive places; they can end up eating; they can have sex with a bed partner and the next morning have no indication this even occurred. They'll find open wrappers or an ice cream quart thing laying empty on the kitchen table – no idea how that happened. So particularly because these are the sort of things that get depressed, these are significant potential side effects of using these medications. Additionally, angioedema and anaphylaxis have been reported with the first doses of it.

The future of hypnotics – where do we go from here – they've found that there's actually orexin receptor in tests. Orexin is a transmitter released by the brain that is particularly low in people with narcolepsy. So if you could block the receptor, you could maybe induce sleep to sort of a narcoleptic pattern. And that will be interesting to see, if these end up coming into fruition in the future.



## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

Next slide would be slide 41.

Tapering rate of hypnotics is always a concern. When you read the Internet, there's a lot of blogging about how people are to do this. So you can see there's a lot of concern. Side effects of coming off too quickly if people have been on it for months taken nightly of particularly the Z-drugs I just discussed: anxiety, rebound insomnia, flushing, nausea, vomiting, tremulousness.

So it can be pretty significant. So my decision on how to come off it really is a function of were they using it on a PRN basis or nightly? And the longer they've been using it, then the slower I try to come off of it. So if they were on, say, 10 mg of zolpidem for six months, I might have them go to 5 mg and just see how that goes for a month or two. And then if need be, even potentially slower if they felt they were having symptoms from that.

Next slide, please.

A little bit about melatonin – a very common nutraceutical use by various service members we see. Its main use is in circadian rhythm sleep disorder and jet lag. Melatonin, as you probably know, is produced by the pineal gland and is generally at low levels during the day and gradually rises in the evening as the night approaches. It peaks in the early morning hours and declines by the end of the night.

So generally where I find mistakes is when patients take their medication at bedtime, it is not hypnotic. Its main role is to pull their bedtime earlier into the night. A lot of people are night owls; so they'll say, "I go to bed at two; and if I can sleep till noon, I'm good." And it's just like a typical adolescent sleeps, so you want to see if you can try to pull them forward.

So we recommend that it be done by taking the medication more like at dinnertime, say five/six o'clock in the evening. It's based on dim light melatonin. And so melatonin gets excreted about 14 hours after you're awake, 2 hours before typical bedtime. And so we use various methods, like salivary samples, to try to gage when the levels are low and then to sort of time off of that when they might be able to dose their medicine.

But if you didn't know that information, taking it more like around 1800 each night is better than taking it at bedtime. The recommended dose is very low; it's only about 0.5 mg to 1.0 mg. Higher doses tend to cause more side effects and are not more effective.

And in the picture you can see my wrist there. I'm showing an actigraph. It's a motion sensor that helps us know approximately when a patient is falling asleep at night and when they're waking up; and again, that helps to guide the treatment.

Next slide, please.

Just a word about rozerem – not a particularly widely-prescribed medicine based on the melatonin receptor agonist. It does have some hypnotic features that the over-the-counter melatonin does not have. Particularly it's helpful for those you're trying to pull forward who mainly had delayed sleep phase syndrome. It's also indicated for initiation insomnia. But I think particularly when there is the delayed sleep phase, it might be worth trying.

Next slide, please.

These other medications I talk about are when these other conditions may be existing and you get the side benefit that maybe when you choose something in this category, if there's an insomnia issue, you choose medicines that maybe have some sedating properties. A lot of the service members we see come to us on antipsychotics, not that they are psychotic but because of the need to try to get them sleep. Maybe they've failed some of the Z drugs; they'll be given that by their provider. They generally do work; but again, weight gain is sometimes an issue with that, and it's probably more medication than is needed.

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

Really if you think you need antipsychotics, they probably need a multidisciplinary approach with some mental health input and potentially some pain treatments and such.

Pain medications while initially subscribed to patients may end up becoming sleeping pills for them. So after a period of what you think should be where the condition improved and the pain medicine should no longer be necessary, be mindful that they may still be using it to help to fall asleep.

Restless Leg Syndrome – Dr. Olin talked about. Dopamine agonists can be helpful for that to help promote sleep.

Next slide, please.

As I wind down here, just a little bit about nightmare medications. These are the typical ones you might see prescribed. The one that we have seen the best response to is the prazosin, which I'll cover in a minute. Other conditions can be helpful. Say someone had headaches and you were thinking of putting them on headache-preventing medicine, propranolol might be a good choice in that case since it also seems to be helpful for nightmares and the other medications. So picking one of these medications is helpful if they also have a primary condition you're also trying to treat.

Next slide, please. This is slide 46.

My next slide was going to talk about using the medications mainly if the nightmares are significantly disrupting to the patient's sleep or if they were just having agitated arousals where they wake up sweating, palpitations, hyperalert, where sometimes they'll remember the dream and sometimes they don't.

Go to slide 47 if we could.

I would mention prazosin -- the use of it in, say, adrenergic antagonists. It seems to interfere with the adrenergic activity and contributes to the pathophysiology of PTSD. If titrated slow, there is a low incidence of side effects.

Slide 48.

We recommend treating it with 1 mg at bedtime for two nights and increasing to 2 mg, and then increase it 1 mg or 2 mg per week to as much as 5 mg mid-morning and 20 mg at bedtime for men, and 2 mg in the morning and 10 mg at night for women. Again, if you go up slowly, its lightheadedness is minimal.

And then on my last slide just the Academy of Sleep Medicine Guidelines on medication usage. So basically, you start with the short intermediary – the Z drugs particularly, and alternating between those. And then potentially ramelteon, I mentioned, if there seems to be a circadian rhythm disorder; or you could try it also as hypnotic. You might then if those were not effective -- and, again, usually at this point if they're not effective, I'm thinking there are other conditions that need to be treated from the mental health standpoint, pain standpoint, anxiety, those sort of things -- then you might try some of the sedating antidepressants that I've listed here.

If you're breaking through that, then you go back to bring in some of the initial drugs you tried in combination with the sedating antidepressants. And then in line 4 there, I show other sedating agents that sometimes can be tried as a secondary benefit if it's indicated for the primary condition.

So I think in summary, the main thing I want you to take home is, again, don't reach for the medication first. Be sure that there are not other things that you can't also be treating, and keep close contact with your patients to be sure that they know that you're there for them and that you're not just in the mode of prescribing medications.

## **DCoE Psychological Health Webinar (January 2014)**

### **Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations**

Thank you.

Thank you for your presentation, Dr. Panettiere.

If you have any questions for Dr. Panettiere, please submit them for the Question box.

Today's last presenter is Captain Laura Grogan, who will be speaking on cognitive behavioral therapy for insomnia.

Captain Grogan has been an active-duty U.S. Public Health Service Officer for over 21 years. She is an Occupational Therapist who started her career in mental health and is currently working towards her biofeedback certification. She developed a kind of behavioral sleep therapy program at the Warrior Recovery Center; a concussion specialty clinic four years ago, and enjoys this area of practice. She served on the DCoE/DVBIC Clinical Recommendation: Management of Sleep Disturbances Following Mild Traumatic Brain Injury work group.

Welcome, Captain Grogan.

Thank you, Dr. Pazdan.

Not only do I have the pleasure of speaking with all of you today on this webinar, but I also have the pleasure of working with Dr. Pazdan in her clinic and more informally with Dr. Olin. In fact, he's to credit in helping me launch our sleep program here. So thank you both.

So you'll see my required disclosure. Go ahead to the next slide.

Cognitive behavioral therapy, also referred to as CBT, for insomnia would indicate CBT-I in essence is the combination of sleep hygiene and stimulus control with the added value of cognitive restructuring and sleep restriction when appropriate. Sleep hygiene in and of itself is not the most effective; however, it is complementary to the other techniques which we'll later break down.

So as an occupational therapist, this area is particularly interesting to me because it's known that diminished or disruptive sleep can adversely affect functional performance such as driving, as we heard earlier; mood regulation; and cognitive function, as well as overall health and wellbeing.

In general, CBT is the most effective short- and long-term solution for insomnia and should be encouraged as one of the first lines of treatment. Here in our clinic, we tend to deliver CBT in a group setting called Sleep Gym, or one-to-one with myself using a more customized approach based on the individualized sleep challenges that the client or service member may present with. Both can be effective, group or individual settings.

Next slide, please.

First I feel it's important to market the value and expected outcomes of CBT as it mandates active involvement on the part of the client more so than the utilization of sleep medication. It truly is a commitment, but one that will lead to satisfaction when implemented.

Next slide, please.

Generally speaking, those with insomnia often come to our clinic complaining about challenges in various performance areas, like what you see in the slide here. Thus, addressing insomnia can lead to improvement in any of those areas listed here. Now, something I would like to add is that a few clients I've worked with have reported fewer and/or less intense nightmares as their sleep has become more restorative. I thought this was sort of interesting because I would be observing this or hearing this. So I

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

had a discussion with Dr. Glidewell, who is a Clinical Sleep Psychologist in our area; and he reported the same when he and I spoke about this.

More importantly though, in the overall picture, CBT is a great tool that will enable the client to address his or her sleep needs during their life span.

Next slide, please.

Predisposing factors are things that may have been present that may have increased the client's vulnerability to developing insomnia, whereas precipitating factors are looked at as maybe the insomnia trigger, if you will. And perpetuating factors are those that further enable the insomnia to flourish. It's important to have an understanding of all of these because you may be breaking down some of these areas or addressing these areas while also utilizing CBT.

Dr. Olin and Dr. Panettiere both set the stage for all the good questions. Some of them will be around these areas here that a provider should be asking to learn about the sleep history and challenges that your client presents with. But I also want to make sure you refer back to Dr. Olin's slide about when to refer to a specialist because it's very important to also know that there are other factors that need to be addressed, and some of them more urgently than others. It doesn't mean that you can't do CBT at the same time while referring to a specialist or get someone going with CBT, but keep in mind and definitely refer back to that referral slide.

Next slide, please.

Let's move on to the various techniques that make up cognitive behavioral therapy. Starting with the most-commonly discussed would be sleep hygiene. It targets the environment and behaviors associated with sleep by teaching the client about healthy lifestyle choices that improve sleep. As you will pick up here, sleep is more than a nighttime activity, as also mentioned by Dr. Olin, for the average person. It's also a daytime activity. How you conduct your day leading up to and preparing for sleep is very important.

It has been reported that up to 30% of individuals diagnosed with insomnia have poor sleep hygiene. I will often advise clients -- when it discusses medication, I'm not a prescriber -- so I will often advise clients to discuss their medications with their prescriber or their pharmacist as they can sometimes disrupt sleep, while others may help with sleep onset, as we heard Dr. Panettiere talk about medications. So knowing about medication side effects and proper timing of medication for the client is very important when you're addressing insomnia or the other complaints that they may have.

Next slide, please.

Here you'll find more daytime and evening recommendations for sleep preparation and for actual sleep. Of note, the amount of time a person may want to limit or restrict a stimulant is going to vary. Of course this is based on the client's ability and willingness to change their stimulant-use behaviors because certainly in our clinic we do get quite a bit soldiers or airmen who smoke, for instance, or rely heavily on caffeinated products.

It's also dependent on the individual's body to metabolize the stimulant. We probably all know someone who will swear that if they have any caffeine afternoon, boy, they're not going to be able to get to sleep that night. Whereas you have other people, they can drink a caffeinated product up to the last minute, fall asleep easily and effortlessly, and wake up feeling refreshed.

So these sorts of things are going to be very individualized. However, it's important to kind of have an idea of what literature suggests. For alcohol, it suggests that you should cut it out 3 to 4 hours prior to bed; caffeine, about 4 to 6; nicotine says as long as you can, I've read that it can be in the system for as long as 14 hours; and heavy meals 2 hours prior to bed.

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

So that's the literature guidance; but again, it needs to be individualized to your client. It makes more sense to explore those with them so they have greater success and can be more realistic and attain their goals towards getting sleep, if that's something that needs to take place – limiting their stimulant use.

The same here would apply to exercise. So morning and afternoon exercise is recommended. The type of exercise is also important to consider. Moderate or intense exercise, it's best to complete it at least two to three hours prior to bed if earlier options are not available. And then also when you think about light or restful exercise, such as tai chi or yoga medri, you can certainly consider doing that prior to bed.

Next slide, please.

Often here, our minds and bodies are on the go all day long with technology and people and physical activity and the like, so much so that people have sort of lost the ability sometimes to slow down, stop, and then be able to proceed with effortless sleep onset. They get into bed in their "go" mode; and as we may already know, that doesn't really work all so well.

So I may suggest here that due to our fast-paced society, people want to be practicing relaxation throughout the day. Building in time during your day to slow down and come to a complete mental and physical stop. Not falling asleep, just slowing down, being still with yourself for a brief period can help you regain the ability to become relaxed when desired, especially prior to bed. It also may even help with the association between being able to recognize when you're sleepy. Often when we're in that go-go-go stage and we're refueling our fire, we sort of forget that, "Oh, I think I'm feeling sleepy." We've kind of missed the boat on that, and reconnecting with that is wise.

To honor stimulus control, which we'll get into shortly, I would suggest conducting the relaxation exercises outside of the bed.

Next slide, please.

Okay, stimulus control – so why prescribe sleep hygiene and relaxation to clients all the time? I really have discovered the greatest impact comes from the implementation of stimulus control, sleep restriction when applicable, and the addition of cognitive restructuring in sessions. So let's explore those.

Stimulus control really helps redefine a positive and clear association between the bed and sleep. Stimulus control alone is more effective than sleep hygiene, as I mentioned. However, again, when combined they are the most effective treatment for chronic insomnia.

So initially in our clinic, we drove home the message of no naps. However, I shortly realized that that really is unrealistic with the population that we serve, especially when you consider the value that proper naps can bring to enhanced performance, such as a soldier getting off of a CQ shift. They've been up for extended hours, and now we're asking them to get in their car and drive home. How wise would that be to take a fatigued individual and put them behind the wheel? Perhaps that would be a perfect time for a nap before getting on the highway in their vehicle.

So now we go with the sleep guidance that you see here on this slide. I do want to add that if you must nap or you take a nap, you want to do it in a bed if you're at home, and possibly you want to sort of schedule your nap or plan it. Many of our clients will say, "Oh, I was on the couch watching television and I nodded off." It's better to plan your nap, so that way then you can also plan getting up from your nap in a timely fashion.

Next slide, please.

Giving clients techniques to aid them with regular compliance in implementing stimulus control is key. It can be hard to motivate folks to use these techniques. I mean, it's wintertime; and I see all this conversation about cold weather, and I'm trying to tell a client that, "Hey, in the middle of the night in your

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

cool bedroom, I want you to get out of bed if you're not asleep within 15 to 20 minutes," is really kind of a hard sell. So you have to help them understand the value of it and give them some strategy and techniques that might motivate them to comply with stimulus control.

Stimulus control also for a client may seem counterintuitive to getting better sleep. Or the client's sleep values and beliefs might strongly suggest otherwise. "Captain Grogan, you're telling me that I can't get any sleep so I should actually get out of the bed? That doesn't make any sense to me." So you have to work with that.

Now, here with stimulus control, I have found that literature suggests times ranging from 15 to 30 minutes. So here in our clinic we'll say, "If you're not asleep in roughly 15 to 20 minutes --not clock watching like Dr. Olin mentioned -- but roughly 15 to 20 minutes, go ahead and get out of bed and do something else. That can be up to 30 minutes. And what I've read is that oftentimes it's return to bed when feeling sleepy.

But as mentioned earlier, that connection with sleepiness is not always there for the client. So with our soldier population, our airmen population, they have learned to recharge and to get it done and to alert themselves. So with that population, it may be, "What? I don't ever start to feel sleepy." Therefore they wouldn't return to bed.

So a way of approaching that is to say to them, "Get out of bed in 15 to 20 minutes, no more than 30. Do something mindless, boring, without any stimulation. And if sleepiness hasn't occurred within 30 minutes, just go ahead and get back into bed and start the process again." And you just keep repeating this until the brain goes, "Oh, I get it. I'm supposed to be going to sleep right now."

So that's what we instruct in our clinic.

Next slide, please.

It's possible that those with insomnia have sleep thoughts and/or perceptions that may be inaccurate. So having positive sleep dialog can help reduce dysfunctional beliefs and attitudes about sleep and impacts on performance due to lack of sleep. You might know the person, "If I don't get sleep tonight, then tomorrow I won't be able to..." and those are certainly thoughts, actions, behaviors and beliefs that we need to break up. We certainly know people, maybe even ourselves, who got a poor night's sleep; but the very next day, we functioned adequately or even better than adequately.

So having objective sleep measures can help reframe a person's view on their sleep and certainly dispel the subjective thoughts of lack of sleep. Here in our clinic, I love using sleep logs; but I also have really found great value in use of actigraphy, particularly when actigraphy and a sleep log don't quite match. It really opens up the discussion around cognitive restructuring and reframing our thoughts about our own sleep.

Let's go on to the next slide.

Okay, sleep restriction -- so when I first learned this technique, I was informed by the person -- maybe it was even Dr. Olin --- that it was one of the most difficult techniques to implement. So I bought that farm; however, when I started doing it with clients, I really discovered that for those with fragmented sleep -- meaning they're asleep/awake, sleep/awake, sleep/awake -- or consolidated sleep. But they're laying in bed for a long period of time and delayed sleep onset. Then they get a chunk of sleep and then maybe they wake up and they lay there for another period of time, that would give them poor sleep efficiency. That technique can actually be refreshing in that it limits the time in bed, thus reducing some of the frustration around poor sleep.

When people are in bed and they're not sleeping, they get frustrated. They feel like, "I should be sleeping. My occupational therapist told me sex and sleep only; and I'm not doing either, so now I'm getting

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

frustrated." So you sort of kind of give them permission to say, "Hey, get out of bed. It's okay." So that can be really helpful.

But in short, sleep restriction limits the amount of time permitted in bed, based on the person's sleep efficiency here, in order to restore the natural drive to sleep. Here in our sleep group, we suggest clients work with a trained provider to obtain assistance so that they can understand what time they might initially start restricting their sleep. We certainly give them support on how to progress and some motivation to continue doing it because it can be a little tricky. And we also help them with what other techniques to use to complement this technique.

So before I do sleep restriction, oftentimes I'll do some of the other things to sort of set the stage, even just establishing a regular awake/sleep time that's not restricted to get someone in the habit of that before restricting their sleep. So I kind of build them up for success first. And I also know when they're doing that, they have that buy in. So I'm going to sleep restriction understanding that, hey, they bought into this idea and they're ready for it.

Next slide, please.

Track your progress. Daily tracking can reveal all sorts of behaviors that the client may have not been aware of and the provider will find value from. Clients can use the logs for themselves to see how they're really making improvement. I've had some soldiers here who wanted to engage in smoking cessation, not necessarily with me. And they realized, "Wow, I didn't realize I was having that many cigarettes." And they have that on their log, so it has all sorts of values for the providers and for the clients.

Next slide, please.

In the bottom left-hand corner, you can download a copy of the log that I like to use. And feel free to modify it for your purposes. If you're referring a client to a sleep specialist, then I would print these up; instruct the client on how to use it; and have them bring in some completed sleep logs to the provider. I love it personally when clients show up prepared for that. It cuts down at least one visit.

Next slide, please.

Just to summarize what we talked about here today, we've included a download in the bottom left-hand corner called Simple and Effective Tips to Improve Your Sleep. You'll pretty find everything that we covered and then some, and you can feel free to use that with any of your clients or for yourself.

I appreciate your time. Thank you.

Thank you for your presentation, Captain Grogan.

If you have any questions for Captain Grogan, please submit them via the Question box.

I would now like to introduce Heather Kopf, the Education Outreach Coordinator at DVBIC, who will be providing a short brief on a sleep kit product. Welcome, Heather.

Thank you, Commander Pazdan.

I would like to introduce the Warfighter Sleep Kit, promoted by the Defense and Veterans Brain Injury Center, or DVBIC. This resource was initially offered to service members and veterans who sustained a mild traumatic brain injury, or NTBI, and were experiencing co-occurring sleep issues, such as insomnia, the most common sleep complaint for patients who have sustained a concussion.

Improving sleep during NTBI recovery may support the resolution of other co-occurring symptoms such as headaches, fatigue and lack of concentration. However, the Warfighter Sleep Kit's use is not limited to

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

the NTBI patient population. There is a wider applicability in its use that extends to the larger, non-specific population of patients experiencing sleep disturbances.

The kit comes packaged in a small nylon drawstring case and contains the following items: a high-quality sleep mask; a pair of camouflage ear plugs; a laminated quick-series guide for healthy sleep; and a DVD that contains a self-assessment, relaxation techniques, soothing video clips; and a fatigue-modeling algorithm to allow troops to track their sleep habits. Along with these items, DVBIC includes a DVD Table of Contents to show how to access these resources.

The idea for the sleep kit originated through the Air National Guard Safety Unit as a means to help improve sleep hygiene as part of a Suicide Prevention program at Andrews Air Force Base. In 2012, DVBIC purchased sleep kits and began offering this tool to concussion care clinics in theater. DVBIC now offers the sleep kit in garrison to assist in the care of a variety of patients experiencing sleep disturbances.

To request the Warfighter Sleep Kit for your service members and veterans who are experiencing sleep disturbances, or if you would like more information on this product, please e-mail [info@DVBIC.org](mailto:info@DVBIC.org). This joint service product is also available for purchase to all DOD organizations through Advantage Corporation. Thank you.

Before we begin our Question and Answer Session, please take a moment to answer two polling questions that will help improve the quality and educational value of the DCoE webinars. While you are answering these polling questions, I will go over those questions that were posted prior to the webinar.

The first question was: "When conducting a sleep assessment, what are important factors to assess?"

And the answer was: "D," All of the above -- which include the nose and oral cavity, the patient's degree of alertness in the waiting room, and the patients sleep history provided by a current bed partner.

The second question was: "What must be present to diagnosis Restless Leg Syndrome, RLS?"

And the answer again was "D, A and B." They must have a creepy, crawly feeling in the arms or legs; and "B," the urge to move is more pronounced during the night.

Question 3 was: "The American Academy of Sleep Medicine provides the following guidelines for over-the-counter antihistamines, sleep aids, and herbal nutraceuticals. The answer again is "D." There is lack of efficacy and safety data to support the use of over-the-counter antihistamines and sleep aids and herbals nutraceuticals.

The fourth question was: "Which of the following benzodiazepine receptor agonist is least likely to be effective in patients with anxiety prominent insomnia?"

The answer is "C," temazepam or restoril.

Question 5: "Benefits of cognitive behavioral therapy and sleep are...?"

"D," all of the above: feeling refreshed upon awakening, experiencing more pleasant dreams, sleeping for an appropriate amount of time.

And the last question, question 6: "Cognitive behavioral therapy tools to assist with sleep include...?"

"All of the following except "C," cognitive repurposing.

It is now time to answer questions from the audience. We are monitoring the Question box and will forward questions to our presenters for response. If you have not already done so, you may submit



## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

questions via the Question box located on the screen. We will respond to as many questions as time permits.

The first question I have is for Dr. Panettiere, kind of a two-part question. The first part is: "How does a brain injury affect sleep?" The second part: "Specifically, is there a higher incidence of sleep apnea in our GI mild traumatic brain injury population; and if so, why?"

Well, we do full polysomnograms on all the service members we see here at NICoE. And our experience here has been approximately 50% to 60% of them actually have sleep disorder breathing. By the normal statistics for this age group and by their BMI, which is relatively on the lower side, we would only have expected perhaps about 20%. So it clearly is elevated.

So we think that injury to through the brain through either direct impact or even in breachers, where they have exposure to the blast wave, can potentially injure some of the dilating nuclei that keep the airway maximally open during sleep. And that excessive relaxation predisposes the person to sleep disorder breathing.

Also, obviously, a head injury, especially in conjunction with PTSD, which is our typical patient here, often causes rumination when they're trying to fall asleep and also any pain or headaches they may be having. It's almost to the person that they'll say, "When I turn out the lights and finally lay down in bed and all the activities of my day are done, my mind is going 100 miles an hour."

And to address that, we'll often recommend that about an hour before they would attempt to go to bed that they sit down and just sort of clear their head. Get a book. Write all the random thoughts that you're having, the feelings you're having; get that out of there. The brain wants to do it, and this allows it to sort of have it at a prescribed time of the evening.

And then we tend to encourage them to try to focus on imagery, pleasant, real-time events in their mind as they're trying to fall asleep, which seems to be conducive to sleep promotion. And the other thing is when there's a brain injury, there are often other injuries that prevent the service member from exercising as much. So there's some weight gain related to that. Medications they're put on for various conditions secondary to the TBI tend to promote weight gain. And then they may end up eating more because of decreased mood.

So all those factors – obviously, weight is a factor in sleep disorder breathing in conjunction with the head injury; and the dilator cell damage that we think is happening, sleep disorder seems to be one of the major findings in addition to all the insomnia things we've talked about.

Dr. Panettiere?

Yes?

I have a follow-up question, and this is a personal question from me. Do you know the breakdown of the instances you're seeing? Is it mild, moderate or severe? Or what are the breakdowns in terms of severity of sleep apnea that you're seeing?

Most of the conditions we have here are mild. I would say probably 80% of them. It's a rare maybe 5% in the severe, and then I'd say about 15% are moderate. But it's quite surprising to the patients that they have this because they'll often either not have observed sleep or no one's complained about it. And we end up finding it. And you can't gage this sort of breathing just on the exam obviously; that's why we have the sleep study. And we have the luxury of being able to study everybody here.

In the normal practice of things, looking at their body weight and their airway diameter and such, there is a handful of them I would have thought, "No, you probably don't have sleep disorder breathing." But when we go on to study them, they do. So you can't just drive off the exam and their body evidence.

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

Certainly, so one of my contemplations over the years is that I've read I think the normal incidence of an RDI greater than 5 in the normal population is upwards of about 45%. And to diagnosis sleep apnea in the mild category, with the number between 5 and 15, they have to have some kind of a symptom. And these patients inherently have some other type of sleep problem. And so which is first, the chicken or the egg? Did the sleep disorder breathing come first, or is there another problem? And now we're studying them and taking this up.

However,, I will say that I share your views in terms of – even with mild sleep apnea, some patients with treatment have a pretty dramatic response, in cognition, mood and other things. So I think it is something we need to be aware and obviously that will need further study.

Yes, absolute. And we focus on sleep and pain the first week of the four weeks that they're here with the intent, "Let's try to optimize that as fast as we can." Obviously, there are issues if they have sleep apnea getting used to the CPAP machine. But we can get all that to them in the first week. And that allows them to be sort of optimized for neuropsych testing that they get about a week later – some of the relaxation techniques, some of the other things. A full eight-hour day of medical visits can have a toll on you. So we obviously want them as rested as possible.

Great, thank you very much, Dr. Panettiere.

You're welcome.

The next question is for Dr. Olin.

Dr. Olin, how does alcohol affect sleep?

The shorter answer is, it disrupts it. Alcohol is probably the most commonly-used over-the-counter I'll say "preparation" obviously available at package stores. Many people obviously reach for it before they reach for Benadryl. But overall, it disrupts sleep; and it will actually suppress REM – rapid every movement sleep.

It can also be, as Captain Grogan referred to, a perpetuating factor. So if someone's struggling with sleep and insomnia initially and then has several drinks to get to sleep and do that over a period of a few months, the alcohol will then, as indicated, disrupt sleep and be a perpetuating factor for insomnia. So I think it's important to review with patients their alcohol use. Review evidence with them, data with them, that it's disruptive. And if it's very high, obviously stopping use and appropriately medically. And if it's mild or moderate use – I'll say moderate use – then recommending tapering or stopping, and review with them other options.

Thank you, Dr. Olin.

The next question is for Captain Grogan. The question came in as: "Are there any standardized test that you would administer a vet who has PTSD that would also document sleep disturbance?"

And, Captain Grogan, I know you use a sleep questionnaire or a standardized sleep questionnaire. Can you describe that and whether or not that specifically addresses nightmares or other PTSD-related sleep disturbance?

Okay, yeah I use a couple of questionnaires in our clinic here. I use the Epworth Sleepiness Scale, primarily just because I think that's important to understand the person's daytime sleepiness as it may relate to their daily activity around driving or operating heavy equipment. And of course we should be working that into our sessions.

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

I also use the Insomnia Severity Index, called the ISI; and that's available for any to use. That gives us some more information about where they are at terms of their insomnia. How do they perceive it? I use it as a pre- and post-measure.

And then the other one I use is called the Sleep Scale for the Medical Outcomes Study. And I don't think this one is broadcast as much, but it's one that gives me a lot of information – just like the ISI. But it also has questions about other medical-related questions, like snoring for instance is on there. And I don't know how people would obtain that. I think between the client-centered interview, the questionnaires, the logging or maybe the actigraphy, we can kind of get to the areas around PTSD.

One of the common questions I'll ask someone is, "What do you feel is contributing to your insomnia, and when did it start? What are some things that were happening before or during or since that time?"

Is that getting the question that the person asked?

Captain Grogan, that's a great question -- and also, Dr. Olin.

Our institutions seem to be heavily focused on data acquisition to look at best practices in terms of looking at things like the PCLM, for example, or various outcome measures. And I'm not aware of any standardized test or questionnaire for sleep disturbance that's specifically related to PTSD. I'll put Dr. Olin on for his comments.

Thank you. I agree with Commander Pazdan. I like the PCLM, and I use that as an overall screening or tool assessment regarding PTSD symptoms. I'm not well aware of the specific – or I don't utilize currently a specific tool equivalent for nightmares. So I'll comment on PCLM score. I may comment on the severity frequency of nightmares in that tool. And then, for example in my narrative in my note and follow-up with the person ask them how frequently are they having nightmares, how many times a night even, how often are they waking them up, how difficult is it to return back to sleep afterwards, and comment on it with some data with that. But I don't have a total score from those questions, but it's something for me to follow.

And frankly then I can review with the patient, "Gee, you're having a nightmare four times a week that's waking you up. Our goal at this point is to try to reduce those to two times a week over the next month or so, and then after that one time a week, etc., to hopefully zero." But patients are obviously delighted if you can help them cut their nightmares in half on their ongoing and frequent – so frequency and severity.

Can I also add that here at NICOE we also do the Pittsburgh Sleep Quality Index, the PSQI; and there are questions on there about having bad dreams and how frequently they're occurring, in addition to the overall texture of their sleep at night.

Thank you, excellent discussion.

Dr. Panettiere, can you discuss trazodone specifically, with its use of the hypnotic agents; and does it have any negative impacts that you've seen?

Well, as a neurologist, I don't typically prescribe the trazodone. They usually are coming to us on it. If they've seen mental health in the past, it's often deemed somewhat helpful when SSRIs are introduced. It also has antidepressant hypnotic effects to help promote sleep, which overall may help their overall depression.

So usually low dose, 25 mg to 50 mg is what's commonly used, although I've seen people as high as 200 mg. And again, whenever I see doses that are sort of outside the normal realm, it makes me start to wonder, "Why is this happening? Why is there not a response? And what else do I have to look for to try to uncover the real problem here?"

## DCoE Psychological Health Webinar (January 2014)

### Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations

So just again, my natural bias is in accord with the patient usually, which is, "Hey, make me sleep without a pill." And obviously it's not a medication I would stop on my own. If they came on it, I would have a conversation with our team, particularly the psychiatrist, and see if that's something he or she would still want to have in play while they were trying to get their mood regulated.

Outstanding, thank you.

Since we have our local psychiatrist here, Dr. Olin, I'll let him comment about trazodone for insomnia, and also perhaps on Seroquel. For a while, it seemed like Seroquel for insomnia was commonplace. I'm seeing that personally less often and was never in favor of that practice, unless there was a primary psychiatric indication personally. We'll have Dr. Olin comment on that as well.

Thank you. Trazodone -- at least I was taught at one point -- nationally was the most commonly-prescribed medication -- relatively inexpensive, been around for decades, and many times prescribed by primary care physicians or mental health clinicians. It's sedating, obviously, and that's what it's used for in these cases.

There is some evidence that it's useful for people with mood disorders, as an initial first standalone treatment. For short-term or chronic anxiety, it's not generally first choice but can be used to supplement anxiety and/or mood disturbance.

Seroquel at least, as Commander Pazdan indicated, at Fort Carson was relatively more commonly prescribed, often for individuals with PTSD and often for individuals with nightmares. And these were often for individuals who hadn't done well on ambien or ambien alone and needed something "stronger or better." And our experience is that there is no silver bullet, as Dr. Panettiere mentioned, no silver bullet standalone sleep medication. And there were complications, including weight gain, including lipid issues.

So we in general have moved away from that, certainly as an initial or even second choice sleep immediate in my practice. There are rare instances where it could be considered, but hopefully on a more time limited use.

Great, thank you very much.

Another medication-related question came in asking, "What is the rationale to take Prazosin or Minipress in the mid-morning? The max dosing is high -- 25 mg in males and 12 mg in females."

I'll just comment about my experience. My experience in practice for the use of Minipress in the setting of nightmares is that it is given at bedtime. However, there are some recent articles that have come out about the possibility of benefit in post-traumatic headache or in headache disorders in this patient population with the use of Minipress.

I was trying to pull that article. We can perhaps post that reference later. I do see a reference from Dr. Ross from the VA from 2009 in the *Journal of Rehabilitation*, Improving Sleep with Initial Headache Treatment in OIF/OEF Veterans with Blast Induced Mild Traumatic Brain Injury with the use of Minipress. I'll let Dr. Olin comment on his prescribing practices with Minipress.

Thanks.

Minipress was originally developed -- my teaching was that it was originally developed as an antihypertensive used to treat blood pressure. Coincidentally or serendipity, noted that Viet Nam veterans in the Northwest, in the Seattle area, were improving -- their nightmares were improving. And so it then became studied more formally. It's non-FDA approved. It's off-label as a treatment for nightmares. And it does have evidence to support it, as Dr. Panettiere mentioned.

## **DCoE Psychological Health Webinar (January 2014)**

### **Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations**

I general start with 1 mg, review with the patient starting with 1 mg, and review with them side effects, including orthostasis, especially with first dose. So people can get lightheaded after first dose or dose increase. And then I go up relatively slowly, for example 1 mg every three or four days if they're young and healthy. And I'd be more cautious if they were more elderly and/or had medical problems.

I've seen doses of 20 mg in my experience; or in our clinic, people may get better at 3 mg, 4 mg, 5 mg – some people 10 mg – but those can be doses that we'll see benefit. So hopefully that is helpful for people.

And just to dovetail, studies have looked in the civilian population with PTSD, the lower doses seem to be effective – so 3 mg, 4 mg, 5 mg might be enough, while active-duty and service members with similar symptoms, they seem to be more in the 5 mg to 10 mg on average. So when I showed you these higher levels, this is as high as it can go. My personal experience is we almost never have to go that high. What you'll start to see before the nightmares are going away is they'll start to become less intense, and then they'll reach a point where usually they don't remember the nightmare but they may still have some of the adrenergic output where they're sweating and waking up with palpitations but don't know why. And then as you increase the dose through that, then they eventually get to be relatively quiet sleepers in terms of the dreaming.

Some of my service members will say, "I don't want to get rid of those memories; they're important to me." And I always caution them, "We're really not getting rid of your memories. You'll always know what happened. But we're just trying to have it not intrude into your sleep, where it's not beneficial.

Outstanding, thank you very much.

There was a question that came also from an individual who works with families of fallen service members asking about any resources for sleep issues in survivor families. So I do just want to point out that many of the things that we talked about here today had some specific relevance to our service members and veterans. However, many of the things that were talked about – specifically, the kind of behavioral therapy for insomnia, the techniques mentioned there – can be applicable to individuals in all settings, including families. And certainly families who are grieving, grief can be a time that precipitates insomnia and sleep disorders.

So I encourage those individuals to take a look at the resources that are in the files, available there. There's also [www.afterdeployment.org](http://www.afterdeployment.org) is another website that has a sleep-specific module. And then just even that Simple, Effective Tips to Improve Sleep is a very helpful handout.

If I could piggyback on that, Dr. Pazdan, one of the questions was also about sleep around the elderly veteran population. And I'd piggyback the same thing – that everything we talked about today would also apply to that population as well. And I use the [www.afterdeployment.org](http://www.afterdeployment.org) website a great deal in my individual sessions. Not only does it have a sleep module, but it also has other modules – things that contribute to sleep, such as anxiety for instance or PTSD or a concussion that you can have a service member or a client be engaging in while you're seeing them.

Well, thank you again to our presenters: Dr. Jonathan Olin, Dr. Anthony Panettiere, and Captain Grogan.

Today's presentation will be archived in the Monthly Webinar section of the DCoE Website.

To help us improve future webinars, we encourage you to complete the Feedback Survey that is open in a separate browser on your computer and also available on the DCoE Website. To access the presentation and resource list for this webinar, visit the DCoE Website at [www.dcoe.mil/webinars](http://www.dcoe.mil/webinars). An edited transcript of the closed captioning will be posted to that link, and an audio recording of this webinar will be available as a downloadable podcast.

The next DCoE TBI webinar topic is, Joint Theater Trauma Systems: Practice Guidelines and Recommendations, and is scheduled for February 13, 2014, from 1:00 p.m. to 2:30 p.m. Eastern time.

**DCoE Psychological Health Webinar (January 2014)**

**Sleep Disturbance: Assessment and Evidence-based Clinical Interventions in the Active-duty and Veteran Populations**

In addition, the next DCoE Psychological Health webinar topic is, Smoking Cessation: Policy, Practices and Evidence-Based Treatment in Primary Care, and is scheduled for February 27, 2014, from 1:00 p.m. to 2:30 p.m. Eastern time.

Thank you again for attending. Have a great day.

That concludes today's conference. Thank you for participating. You may disconnect your lines at this time. Thank you.