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Acute Care Back to the Basics: OT's Role in Critical Care Recorded February 18, 2020

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- [Fawn] Today's topic is Acute Care Back to Basics: OT's Role in Critical Care. Our two presenters today are Lyndsay Laxton and Meghan Morrow. Lyndsay is a senior occupational therapist currently in her seventh year at University of Colorado Hospital. Her clinical experience at UCH spans multiple units including neurosciences, medical ICU and surgical trauma ICU. Her clinical and research interests include ICU rehabilitation, delirium management and utilization of the ICU diary. In November 2017, Lyndsay presented Implementation of the ICU Diary Intervention within the Medical Intensive Care Unit at the fifth European Conference on Weaning and Rehabilitation in Critically Ill Patients, in London, England.

Meghan is a senior occupational therapist currently in her 15th year of practice. She started her career working at RIC, specializing in stroke rehabilitation and coordinating various research projects in RIC's robotic lab. Meghan joined University of Colorado Hospital in 2016 with the true passion in administering quality, evidence-based practice to patients who have sustained or neurologic injury in hopes of facilitating functional recovery. Meghan's clinical experience at UCH includes the neuro ICU, neurosciences and recently treating patients in the Neurological Outpatient Program. Welcome to both of you, and Meghan, you can go ahead and get started.

- [Meghan] Hi, everyone, and thank you for attending our webinar. Lyndsay and I are excited to share our knowledge with you, but before we dive into OT's role in critical care, I really wanted to take a moment to explain why it's important and why we are so passionate about promoting OT's presence within the critical care environment. First, there's been a recent shift in patient care that advocates for long-term recovery and overall quality of life for survivors and their families of critical illness. The abundance of research and literature recognizing therapy's role in recovery, is much more prevalent than before. Whether it be early mobility, including therapist during spontaneous awake trials or delirium prevention, the overall awareness of how a therapist can have a profound impact on patient recovery during the most critical stages of illness has

skyrocketed. Evidence suggests that occupational therapist in critical care can contribute to recovery in areas such as functional outcomes, length of stay, and delirium prevention, and with the information that you'll learn through our webinar today, we hope you as clinicians also feel empowered to promote OT's role and unique value for all survivors of critical illness. In my opinion, our biggest barrier is our role comprehension and understanding. What I mean by that is a lot of people we work with from day to day, do not truly comprehend what we do as occupational therapist. Educating our team members on our role in the ICU is crucial, because OTs have such a significant impact on patients' early success, survival, and overall quality of life. So, with that being said, I hope you enjoy our webinar today on OT's role in critical care, and more importantly, I hope you feel empowered to promote, protect and spread awareness on the services that we as a profession can provide for our patients. I hope you feel confident to administer strategic outcome measures, and deliver evidence-based treatment interventions that only we as a profession can excel at. At the termination of this course, we hope you're able to, first, identify three reasons occupational therapists and COTAs are essential members of the ICU environment. Secondly, we hope you're able to feel ready to describe at least two potential hospital-acquired barriers to discharge for patients who've experienced an ICU level of care. And thirdly, we hope you have the resources necessary to implement at least five evidence-based treatment interventions in the ICU. So without further ado, here is Lyndsay to get our webinar started.

- [Lyndsay] All right, hello, everybody. This first part kinda diving in a little bit to the unique value of OT in critical care will come as no surprise to us as we are all OT practitioners, but the core of the profession of OT has always been holistic, meaning we're not just looking at one specific body system, or a functional deficit, we really wanna see how all of the body systems work together, and then using that information from our holistic view, create client-centered interventions that are meaningful to the patient. So the piece that is really kind of important to the critical care environment for

me is the Person Environment Occupation Model. So knowing, as OTs, we have very in-depth theoretical training in the PEO model, we understand that intimate relationship between each person's ability levels, the occupations that they want to perform, and then the environment in which they are performing those occupations, and nothing can be more abnormal than an ICU environment. It's either sensory overload or sensory deprivation, it usually has some component of immobility to it, or a loss of consciousness due to different medications. So we as OTs have a very in-depth understanding of that transactional relationship and then can help patients progress through their ICU stay within this understanding.

All right, so about 10 years ago, the Society of Critical Care Medicine identified that patients who experience stays within the ICU have new or worsening physical, cognitive or psychological symptoms, and they determined that these cluster of symptoms is post intensive care syndrome. Post intensive care syndrome occurs in 50 to 70% of ICU survivors, and it manifests in four specific domains that we will then utilize throughout the rest of our presentation. These four domains are neuromuscular, physical functioning, psychological and cognitive. As we progress through this presentation, you will see we will identify each of these four domains, we will identify outcome measures that can be used to assess each of these four domains and then we will break down specific interventions for these domains. So the first, neuromuscular impairment, this includes any sort of critical illness, polyneuropathy, myopathy, or diffuse atrophy. Diffuse atrophy is present in 85 to 95% of ICU survivors, it's also called ICU-acquired weakness, this might be a term that you guys have heard before. Risk factors for neuromuscular deficits include sepsis, multi-organ dysfunction, or any periods of immobility or bedrest, which is obviously pretty common in the ICU due to the critical nature of patient's medical state. The neuromuscular impairments are also associated with decreased functional independence as well as six-minute walk tests. So all of these are pretty imperative for people to be able to perform daily

activity, ADLs, IADLs and functional mobility, and therefore are something that us as occupational therapy practitioners would probably want to be aware of.

All right, so for physical functioning, this includes any impairment in ADLs and IADLs. As you can see on the slide there, 50% of ICU survivors are experiencing deficits in ADL independence in the first year of their illness, status post-discharge from the ICU, and 70% of ICU survivors are experiencing deficits in IADL performance. Symptoms of this are impairments in ADLs and IADLs, as well as their six-minute walk test. And risk factors include ICU-acquired illnesses, increased age over the age of 65, or pre-existing impairments with IADLs. Psychological symptoms include depression, post-traumatic stress disorder, and anxiety. Risk factors for all of these include delusional memories of the ICU, which is common during delirium, which we'll talk about a little bit later on in the presentation, and other risk factors, anybody who has experienced some period of sedation, as well as presence of restraints, which is also another very common ailment that is experienced in the ICU, as well as increased time on a mechanical ventilator. This all relates to impairment in physical functioning, which then translates to some of these symptoms here. As you can see on the slide, depression occurs in about 1/3 of ICU survivors, and it's independently associated with severity of executive functioning. Also, post-traumatic stress syndrome, or post-traumatic stress disorder, is present in 60% of ICU survivors, and anxiety is experienced in up to 85% of ICU survivors, with 62% experiencing anxiety symptoms, one year post discharge. So not only are these acute symptoms that people are experiencing, but they're definitely being carried with them out into the community and as they return to their premorbid lifestyle. And lastly, the cognitive impairments related to the ICU include impairments in memory, attention and executive functioning, and risk factors for these impairments include ICU delirium, periods of sedation, as well as any sort of hypoglycemic event that has been experienced during their ICU stay.

As you can see on the slide there, 70 to 100% of ICU survivors will experience some sort of cognitive impairment below their baseline level of performance at their time of discharge, and almost 1/2 to 3/4 will experience continued cognitive deficits, at one year post hospital discharge. And now I'm gonna pass it over to Meghan to go a little bit more in depth on some outcome measures within these four domains.

- [Meghan] Okay, let's talk about outcome measures. And I just wanna preface this section by telling you it's gonna be really exciting. So typically, you wouldn't think of an outcome measure being riveting, but hold onto your hats, we're gonna dive in. Okay, the ability to evaluate and measure a patient's current level of function is extremely valuable to any clinician. Why, because it helps inform patients about their own recovery, helps identify patients who may require rehabilitation interventions, and also it allows us therapists to monitor that responsiveness to such interventions. So just to highlight why evaluating a patient's current level of function is so important, I'd like to share a few statistics from a recent article published in the Journal for Critical Care by Doctor Perry and Doctor Needham. ICU survivors with multi-organ failure are susceptible to physical morbidity with up to 30% muscle loss within the first 10 days of their ICU admission. I think that's really eye-opening. And also another huge statistic that I took from that article, is the prevalence of ICU-acquired weakness is 25 to 40% of all patients intubated over 48 hours. That, to me, is so alarming. And you may be saying to yourself, "Yes, Meghan, "these statistics are alarming, "but how does it truly impact you as a clinician?" Well, it matters because weakness and physical functioning are predictive of subsequent length of stay, post-discharge survival, healthcare utilization, quality of life, and the ability to return home. Therefore, the need for occupational therapists to have a way to objectively measure a patient's ability to engage in functional activity, while being admitted to the critical care unit is extremely important. Through the use of outcome measures, we as clinicians, again, I just really wanna reiterate this, are able to inform patients and their families on projected recovery, we're able to identify patients who may require rehabilitation interventions,

and then again, we wanna monitor even the sickest patient's response to our robust OT interventions.

So let's talk about outcome measures. The evaluation of physical function is complex and is influenced by multiple interacting factors including strength, range of motion, proprioception, balance, cognition, and psychological issues. So it's a very unique environment too in the ICU. Factors that are very specific to the ICU, such as sedation, severity of illness, and mechanical devices, definitely play a role and influence how accessible a patient may be. So, determining the specific purpose for assessing function is important. For example, if your purpose is to evaluate in interventions efficiency, you wanna consider that specific effect of the intervention and match it with an instrument that will evaluate the effect. So before we start going into specific outcome measures, I think we really need to talk about factors that we should consider when choosing an outcome measure.

First, we need to look at the purpose of the assessment, are you trying to show an increase in independence with self-care, improved level of arousal, ability to follow one-step commands, or are you looking at the level of orientation to determine if a patient has emerged out of the post-amnestic state? Whatever your primary aim of an intervention is, you definitely wanna be sure you use an appropriate instrument to evaluate that domain. So here in my section, I think all things are connected, right? So right now we're talking about the purpose of the assessment. Now, another critical component, when choosing an outcome measure, is the measurement properties. Is your tool reliable, is it valid, and does it demonstrate change? For example, what I'm asking is, will it show if a low-level patient is responsive to a very specific intervention? The instrument should illustrate change over time and must have a limited floor-to-ceiling effect across the expected evaluation time points. It is very important to be able to detect clinical meaningful changes over time, regardless if you or your peer is administering the assessment. And the reason that I really think this is important to

talk about is because patients who are surviving any kind of critical illness may have very small gains, but if it's appropriate to advocate for an acute rehab setting, looking at the purpose of the assessment, looking at the tools measurement properties, is so important to make sure you're illustrating markers of success. So the third factor I think you should consider when choosing an outcome measure is clinical utility. Be mindful of the cost, the training, the equipment, and the expertise required. As I move forward to educate you on some valuable assessments, I want you to dive a little deeper and be sure it's practical for your specific settings. Lyndsay and I want you to be set up for success, we want this to be a useful component to your daily practice. So do your due diligence and make sure that the assessment you choose is right for the culture, utilization of therapy services, and level of expertise that you're currently working with.

Finally, I think that therapists should always consider a patient's capacity when choosing an outcome measure for the ICU. All instruments and assessments will always be dependent on the patient's effort. I typically never make always comments, but this is true, and if you think about it, you're like, "Yeah, if a patient puts in their all, you're gonna get the most out of that assessment." So please, always consider if the assessment is feasible, is the patient alert, can they follow instructions, do they have any premorbid deficits that may impact their motivation? All things are connected, therefore, it's always important to stop and think about the why. And you're gonna hear me talk about the why a lot during this, because if we can justify what we're doing, then the world is our oyster. So why are you choosing this assessment for this patient at this time? When we talk about the why, we have a much greater ability to utilize our time, evaluating patients efficiently and effectively. If you would like more in-depth on this topic of what outcome measure to choose, and these four very important components, please look at our reference page, and you'll see an article published by Doctor Perry 2017 listed, and it has a really beautiful way of outlining this whole process.

So now that we've discussed the important factors to consider when choosing an outcome measure, I'd like to educate you on some robust outcome measures specific to the ICU, and hopefully you'll be able to implement them in your practice as soon as you return. Talking about outcome measures can be dry, so I really want you all to understand my approach today. I will not be talking about the sensitivity, specificity, inter-related reliability, or validity of any assessment, I have provided links to every single outcome measure that I will be discussing and resources from our reference page. Please feel free to navigate each instrument's statistical properties at your own time. Because if I just tell you a bunch of numbers and statistics, I think I'm gonna lose your interest. And instead, I really wanna discuss the clinical significance on how certain measures can offer recommendations for evidence-based interventions. Again, I want you to leave this webinar with the why, I want you to know that the instrument that you choose works for your practice because of very specific reasons. So with that being said, let's dive in.

Let's talk about outcomes measures that assess physical function. I was gonna go, ♪ Let's get physical ♪ and then I was like, no, that won't do, but I did it anyway. All right, as you can see here, I've broken out my outcome measures to two different categories, basic and advanced. As you see, for the physical functioning slide, the basic assessment, you can always test manual muscle, any kind of grasp, or pinch using the dynamometer. I'm not gonna talk about those, because I feel like we know them like the back of our hand and they don't often show very minute growth in patient recovery. What I will talk about in much more depth is the critical frailty scale, the functional status score of the ICU, and the ICU mobility scale because I think these have a lot of power in the critical care setting. So the critical frailty scale is an excellent tool used by OTs in the ICU. This clinical scale is mostly used to obtain a baseline assessment of frailty. So this tool measures a sum of eight core frailty indicators, we've got weakness, fatigue, weight loss, low physical activity, balance, gait speed, and visual impairments. Also, there's a note of cognitive impairments. I just wanna tell you, please feel free to

look at the questionnaire and have a stronger grasp of what I'm talking about. The clinical frailty scale is an excellent way to get a snapshot of how your patient was navigating life before being admitted. One very important detail about being a therapist in any setting is acknowledging and being realistic that a patient may have been frail, premorbid to their admission. So think about patients who are frail prior to admission, they have much poor mortality and morbidity rates, and may require institutionalization at discharge. Therefore, getting all the background information you can can be very useful when assessing the prognosis of a patient in a therapeutic context. Using a standardized approach for assessing physical function in the ICU is highly recommended. I think we all agree, or we wouldn't be here at this time today. It is important to know what a patient's life was like before, was his or her status prior to the ICU robust, were they really thriving in life? Well, using the clinical frailty scale can help with writing appropriate goals for recovery and rehabilitation. So the clinical frailty scale is just a really nice way to get a snapshot of what was life like before you all met.

Okay, another excellent outcome measure that assesses physical functioning is the FSS-ICU, or the Functional Status Score-ICU. It's a physical function measure specifically designed for the ICU and includes five functional tasks, rolling, transferring from supine to sit, sitting at the edge of the bed, transfer from sit to stand, and walking. Each task is evaluated on an eight-point ordinal scale very similar to the functional independent measure, ranging from zero, not able to perform at all, and seven, completely independent. This scale has an excellent responsiveness to small gains and is an excellent tool to use to predict duration of post-ICU hospital length of stay. So let's say those words again, it is an excellent responsive assessment to small gains, and it's an awesome tool to predict duration of post-ICU hospital length of stay. That's awesome. This measure has also been proven to have a strong predictive value to discharge location. So for example, in the category of survivor discharged to home, there was much higher FSS-ICU scores associated with those patients opposed to those survivors discharge to subacute rehab. So, for patients with multiorgan failure,

and at high risk for hospital-acquired deconditioning, the FSS-ICU is an excellent instrument to use to demonstrate increase in muscle strength and functional capacity. In my personal practice, I have also found the FSS-ICU to be helpful to help me triage my caseload and help me focus on the right patient at the right time and who would benefit most from my intervention. The final outcome measure I would like to discuss that measures physical functioning, is the ICU, I can't talk, the ICU mobility scale, there it is. This instrument is a very widely used scale that evaluates mobility sub domains. So this tool measures a patient's mobility status starting with their ability to follow commands culminating in the distance walked in two minutes. So it's a 10-point scale, zero represents a patient requires total assist for rolling, or passive range of motion exercises, a five represents a patient's ability to progress to stand or shuffle through stand to a chair, so bed-to-chair transfer, and finally, the score of 10 demonstrates the patient's ability to walk from either a bed, or a chair at least five yards, without an assistive device. I love this measure because it's easy to communicate the results within an interdisciplinary team, but also it's a great tool for peer-to-peer handoff and it offers context to physical positioning during self-care.

So for those of you that are working on self-care in the ICU, as I'm sure we all are, we all know washing your face supported in long sit in a bed is absolutely not the same as washing your face standing at the sink. Therefore, when you use the ICU mobility scale, you provide more depth to a patient's physical abilities during times of self-care. Okay, I just unloaded a lot of information, so I wanna take a step back and focus again on the big picture. So when we're looking at the evaluation of physical function, we're looking at clinical frailty because it helps you grossly understand the patient's premorbid status and allows for a much more realistic goal-writing and much better appreciation of what that patient was doing before you all met in the hospital. The FSS-ICU is an excellent measure to assist with prognosis. It has proven to have strong predictive values for discharge disposition, therefore an essential tool during the early stages of recovery. Finally, the ICU mobility scale is great because it provides context

and objective information during self-care interventions. It can demonstrate progress in an objective way so that team members, insurance companies alike, all see how your patient is actively making progress during your sessions. When you use instruments like the clinical frailty scale, FSS-ICU, and ICU mobility scale, you gain such a great depth of knowledge about your patient's physical function. It's important to know where a patient came from, frailty, where they potentially could be going, FSS-ICU, and then track their progress during intervention so that you can provide a rich description to properly illustrate the story of a patient recovery.

Okay, one more to go. This is major, guys. We're talking cognitive and psychosocial components. Let's shift gears and chat about outcome measures that directly look at cognitive and psychological components of recovery. Screening for mental capacity should start from day one of admission and include assessments such as pain, sedation, and delirium status. So the first outcome measure or scale I'd like to talk to you about is the Richmond Agitation Sedation Scale. It's a tool that ICU clinicians can use to determine the level of consciousness of a patient. The original purpose of the RAAS was to avoid under and oversedation. The use of the RAAS scale is recommended to ensure that the ICU team speaks the same language regarding the intensity of a patient's sedation, so getting everybody on the same page is always nice. Go ahead and click the link provided, here you will see a 10-point scale with four levels of anxiety or agitation and one denoting a common alert state. A patient who scores a four-plus describes a patient who was combative and potentially unsafe to engage in therapy. As you see here, a three-minus describes a patient who is moderately sedated. So that means movement of eye-opening to voice, but really no eye contact. Verbal stimulation is mostly required at this stage, but sometimes physical touch is needed. The RAAS can lead occupational therapists to make informed decisions that not only maximize patient safety during therapy, but also shine the light on those best types of interventions to use. The RAAS provides all ICU team members with standardized way of accurately documenting patient status pre, during and post an OT

intervention. This scale also opens up the door to some powerful clinical conversations that we as occupational therapists can have and help our teammates collaborate during patient recovery. With increased use, we can speak and establish a culture where all clinicians are talking the same language. Earlier in this webinar, Lyndsay educated us on the significance of hospital-acquired deficits. In her presentation, we learned about the profound effect that the post intensive care syndrome has on patients who survive a critical illness. One thing that always sticks out to me is 60% of patients who survive the ICU admission all share one common risk factor, and that is delirium. Therefore, this webinar would not be complete without a quick discussion of the CAM-ICU.

The Confusion Assessment Method, or CAM-ICU, is the gold standard for delirium. Delirium is a common, serious, and potentially preventable source of morbidity and mortality. Delirium can affect as much as 50% of elderly hospitalized patients, that's wild. So the CAM was developed to improve the identification and recognition of delirium. It's intended to prove a method to enable all clinicians to identify delirium quickly and accurately. Therefore, it is highly recommended for occupational therapists working in acute care to assess for delirium during every OT session. If we establish a daily routine, we modify the environment, and engage patients in functional task practice, research indicates that we actually, as clinicians, have an impact on the overall incidence of delirium. If we target that elderly patient population, we can decrease mortality, decrease length of stay, decrease cost, deescalate the rate of long-term cognitive impairment, and finally, and obviously most important to me, increase a patient's ability to return back to independent living. I think it's so powerful, I hope you feel my passion. So please assess for delirium every patient every time, we just can't afford not to.

Let's dive a little bit deeper into a patient's current level of cognitive abilities and talk about the MoCA assessment. This is a great option. It is a screening tool designed to

detect mild cognitive dysfunction. This screening tool, however, can offer clinicians insight into the following five categories, executive function, memory, attention, language, and abstract thinking. The MoCA may be administered by anyone who, I'm sorry, let's clarify this, the MoCA may be administered to anyone who understands and follows instructions, however, only a healthcare professional with an expertise in the cognitive field may interpret the results. This screen allows clinicians to identify specific domain areas of impairment, and then follow up using functional evidence-based treatment interventions to progress with patient's recovering. Knowing exactly where a patient is struggling is essential to pinpoint early, so you can utilize the time you have in your session wisely. Training in how to administer the MoCA is offered in the link provided. With the ability to assess several cognitive domains, the RAAS, CAM-ICU, and MoCA, will illustrate a much clearer picture of where your patient is in their recovery, and you as a clinician, will be armed with that knowledge to implement specific evidence-based treatment interventions to allow your patient to have a better outcome.

Now, while I still have your attention, let's talk about more advanced outcome measures for the cognitive and psychosocial areas of recovery. Strength should never be the sole guide for determining a patient's need for therapy. As an occupational therapist, we need to understand this, and we do, this is our bread and butter, this is our holistic approach, looking at the whole person, including, not only their cognitive abilities, but also various psychosocial effects, is essential when helping an ICU survivor recover. Therefore, today I wanna take some time to talk about Hospital Anxiety and Depression Scale as well as the JFK Coma Recovery Scale. When an individual has their independence taken away from them, leaving them admitted to a critical care unit, their prognosis may have many ambiguities and can cause a lot of emotional distress. The hospital anxiety and depression scale is a self-reported questionnaire designed to identify depression and anxiety. Please click this link to review the 14 questions included in the scale. You will see items are rated on a

four-point severity scale, one scale is for anxiety, the others for depression. A score equal or greater to 11 is indicative of a positive sign. However, the true beauty of this scale is its simplicity and speed, and ease of use. This has a role in everyday ICU practice and all patients with mild to severe symptoms of anxiety or depression should absolutely be further psychologically evaluated by a professional in that field. By using this scale, we have a better grasp of what our patients are experiencing, and now have the ability to advocate for these individuals with much more robust, objective information. This information also allows us to use our empathetic use of self to foster better relationships and rapport with our patients we're helping recover. Like an onion, this section of our webinar, highlighting critical care outcome measures, keeps unfolding and growing.

So I feel compelled to talk about the coma recovery scale in today's webinar because of the unique role OTs have on its administration. This scale is used to assess patients within a disorder of consciousness. So when you click on this link, you'll be able to view the subscales assessed, items such as auditory response, visual motor, oral motor, communication, and levels of arousal are evaluated in this tool. The lowest scale of each subscale represents reflexive activity. Now, the highest level represents behaviors that are mediated by a cognitive input. Patients who've sustained traumatic brain injuries, strokes, or who have sustained brain tumors, are appropriate for this assessment. So when I work in the neuro ICU, I love using this scale. Not only does it help guide by tapping into a patient's abilities at the earliest stages of recovery, but it also can be used to monitor the emergence of a minimally comatose state. For example, if your patient has a high score under the auditory section, modifying his or her environment by allowing the patient to listen to a low tempo music may help activate areas of the brain involved with memory and cognitive function as well as emotion. Listening to music is an excellent preparatory method to engage patients and increase level of arousal. In 2006, Doctor Khan did a research study using music-listening for ICU patients. He concluded that music was a feasible way to

reduce brain dysfunction and increase activity in areas of memory, potentially helping regain cognitive function, maybe something you would have never known had you not administered the coma recovery scale. I think you all know I heard personally feel that the coma recovery scale is so powerful for our neurological patients in the ICU. It offers us a pathway that we as occupational therapists can travel to administer evidence-based interventions. Even patients who have a current disorder of consciousness, we need to know, at the earliest stage, how we can help patients recover, and this outcome measure provides us with that important information of each patient's abilities. I truly appreciate your sustained attention during that time and I hope you found that information valuable. I'd love to hand it off to Lyndsay next and she is going to talk about those evidence-based OT interventions that I alluded to.

- [Lyndsay] Hello, everybody, one more comment on the Outcome Measures section, we were alerted that you're not able to click on the links, our apologies about that. So after the presentation, feel free to copy and paste those links into your web browser and you can learn a little bit more about those from there. All right, so let's dive a little bit deeper into some OT interventions. Similar to the beginning part of the presentation, we're gonna break them up into the four domains that are impacted by critical care, and we'll start off with neuromuscular. So neuromuscular impairments, we know early mobility and early engagement help increase muscle strength, they reduce the incidence of that ICU-acquired weakness that we were talking about, as well as increase the incidence of independent function at time of hospital discharge. And when it comes to these different interventions, again, our unique value as rehabilitation clinicians, specifically occupational therapy practitioners, is our clinical judgment to grade the activity. We know that we can't have one intervention that is going to be appropriate for all of our patients, we really need to come in, utilize some of those outcome measures that Meghan was talking about, do some of our informal screens, functional assessments, and decide what intervention meets the needs of that specific patient, right, we want it to be client-centered and meaningful.

So to do so, we need to grade the activity. For early mobility and engagement, if you have a patient that has profound weakness, and isn't really able to tolerate a whole lot of out of bed, whether from a physical perspective or maybe it's a hemodynamic issue, or an agitation issue related to their diagnosis, or a medical situation, we've got a couple options to help them engage in mobility, and engage in activity. And this all depends kind of on your specific site, but here at our hospital, we have access to a tilt table that allows for progressive upright positioning, which then you can incorporate some sort of meaningful task. We also have access to a cycle ergometer for seated or supine cycling. For some of our higher-level patients, or maybe even like moderate-level, something as simple as transferring to a commode for normal bowel-bladder management can be a profound benefit to that patient's functional progress. And for higher-level patients, if they're able to tolerate ambulation, or static standing, dynamic standing, balance for a prolonged period of time, ambulating to the bathroom or ambulating to a shower nearby, again, it all depends on how your specific facility is set up, how your patient is presenting to you, and then using that clinical judgment to grade that activity to what's appropriate.

All right, so physical function obviously, is our bread and butter, as occupational therapy practitioners, we want patients to engage in meaningful activity as early as possible and as often as possible. So early rehabilitation for us can be ADL retraining, establishing a routine. There is, again, nothing more off-putting to a routine than an admission to a hospital, especially an admission to a critical care unit. Patients lose all sense of control, they lose their normal routines, oftentimes they lose their natural circadian rhythms for sleep-wake cycles. So OTs can have a profound impact here, as we look at that person environment occupation interaction, and how do we then create some sort of normalcy for patients. The functional transfer training is one that we can partner with physical therapists as well as our nursing colleagues. We know that an intervention done once a day is not as powerful as an intervention done five, 10, 20

times a day. So, again, one of our roles is to empower not only the patient, but as well as our colleagues and ancillary staff to help carry over some of our plans of care that we've established. Sleep hygiene, this is another one that we can partner with our nursing colleagues for improvement on sleep-wake cycle, whether it's creating some sort of routine, establishing breaks throughout the day for rest or lower stimulation, as well as frequent engagements so that patients aren't sleeping due to boredom or inactivity. Communication is a great area for us to collaborate with our speech language pathology colleagues, any sort of adaptive communication, whether it's writing, if your facility has access to iPads, that's one that we use here at our hospital, any sort of way to help a patient communicate can certainly bleed over into some of those other domains in terms of decreasing anxiety, depression, and also increasing a patient's ability to participate in their own medical plans of care, because what's more powerful than being able to communicate what you want done or for your own body? All right, so the psychological interventions as well as cognitive interventions, they bleed a little bit but we'll start by talking about the psychological interventions.

So as Meghan mentioned, delirium is extremely prevalent, unfortunately, within critical care and it also carries with it some pretty profound deficits that persist for patients long after they are discharged from the hospital. So, as Meghan mentioned, detection of delirium is key, routine administering of the CAM-ICU needs to be done every session so that we can detect delirium early and start different management strategies to help decrease the severity of the delirium as well as the length of the delirium. So in order to manage delirium, environmental modifications is a big one. Whether the hospital environment is overstimulating or understimulating, maybe if it's understimulating, we open the blinds, turn on the lights, increase the patient's head to bed so they're able to participate in daily activity. If it's understimulating, we can always provide the patient their hearing aids, glasses, dentures, to try to regulate the sensory input that maybe they require modifications to be able to interact with the environment. Conversely, if the environment is overstimulating and somebody might be

presenting with hyperactive delirium, having the option to incorporate calm, soothing sounds, turn the lights off, give patients different rest breaks, and try to decrease that agitation, that can be extremely psychologically detrimental for a patient.

Another option is the ICU diary. This is one that I have used for several, several years in my own clinical practice, and absolutely love. If you think about somebody comes into the ICU and they've lost control, they have a huge change in function, they're not able to engage in normal daily activity or leisure activity, work, normal family relationships, those premorbid roles and routines are paused or gone for the foreseeable future. So being able to utilize the ICU diary to report emotions, feelings, can be very helpful in reducing anxiety and depression. I also really like to use it from a cognitive perspective, which I'll talk about on the next slide. Again, communication comes in here, we know if patients aren't able to adequately communicate, they have higher rates of anxiety within their hospital stay, so this is another one that should be addressed as soon as possible. Something as simple as somebody with profound weakness that might not be able to hit a standard call light to alert the nurse if they need something, coming up with adaptive communication strategies, adaptive call lights can be a huge role for us to provide a little bit of control and independence back for that patient, as well as to promote their overall safety. And then lastly, leisure engagement is great, specifically if patients have family and friends that frequently visit, creating some sort of routine for leisure engagement, things that they enjoyed engaging in prior to hospitalization can increase overall feelings of happiness and decrease some of the anxiety and depression.

All right, lastly, cognition. Again, delirium prevention and management is key. We know that patients who experience delirium and the longer the delirium persists while in the hospital, have more severe cognitive deficits that then persist for longer post hospitalization. Early cognitive engagement, like I'd mentioned before, the ICU diary, from a cognitive perspective, I like to use it in conjunction with the orientation log,

which we did not talk about here, but please feel free to go out and take a look at that. It assesses 10 areas of a patient's orientation from location, date, time of day, all the way up to reason for admission and current functional deficits. And as OTs, this gives us good insight into where a patient might be disoriented, and then we can use the ICU diary to have the patient create a written log of what has happened each day, and then can be used as a compensatory strategy to reflect on for short-term memory, recall, as well as orientation. Our hospital here, we offer various puzzle books, but I've also been known to go on and google, print word searches, crossword puzzles, mazes, anything that requires sustained attention, and is a little bit out of the norm, to help the patient engage in something that might take their mind off of what's going on around them.

And then reorientation activities are great. This can be something as simple as putting a clock or a calendar at their bedside, all the way up to having a family member come by and have a conversation about what happened at church that day, or a family friend that came and stopped by and they were sharing details of a story that happened. So really all encompassing in terms of cognition, you can get pretty creative with some different strategies. Lastly, the evidence-based OT interventions, apologies, our takeaway is remain holistic, right, as OTs, like I said at the beginning, we're not just looking at one of the four domains and addressing that, we wanna know how those four domains affect the patient, and then how the environment in which they are participating, or they are living in that period of time, affects the patient and their progress. And we really don't wanna choose one intervention and use that in isolation. Early mobility, engagement in ADLs, engagement in out-of-bed activity, it doesn't just affect the neuromuscular system, right, it affects the patient's overall psychological performance, it didn't increase anxiety and depression, it increases their independence with ADL performance, it also increases their engagement and is likely to deter delirium from occurring, which then can result in long-term cognitive deficits.

So I think the power of OT is that we are at our core as a profession, holistic and client-centered, and that is what research is beginning to show that early mobility is not the key to good outcomes, it's really early engagement in life, we wanna make that person as independent as possible, as fulfilled as possible because just because you can walk 100 feet doesn't mean you can take care of yourself, balance your checkbook, take care of your child at home, we really want to treat the person as a whole person, and not just one of the four domains. So that's really our takeaway, and I will hand it over to Meghan for one last wrap-up slide, thanks, guys.

- [Meghan] I think we all know now the role of occupational therapy is clearly involved in critical care units. In recent years, the value of occupational therapy has been recognized. Again, educating all interdisciplinary team members on how we can assist with ICU survivors' recovery is imperative. Lyndsay really just hit it home, it's not about how far you can walk or how you can move, it's about how you engage in your life and how you sustain a quality of life that is important to you. Showing the impact that occupational therapists have in ICU recovery is absolutely major. Let's be the ones to positively influence the culture of our critical care recovery units. I hope after today you move forward with the knowledge that we're taught to make a difference. We absolutely thank you for your time and we welcome any questions that you have. What I'm gonna do at this point is we have some questions on the board, so I'm gonna pause, take some time to read it and then we will go from there. So just hang tight, we'll be right there. Okay, so just to communicate a question that's come up, is, "Can these assessment scales be used to the sniff "with low-level clients?" Excellent question. I would like to say at this time that our area of expertise is ICU. I do know the coma recovery scale is feasible to use in many different settings, but if you really wanna dive a little deeper, I would click the links and do your own kind of self-study for that.

- [Lyndsay] All right, the next question we have is, "Are other OT clinicians being trained "or given only expectations to focus on mobility?" I can only speak to our facility, and I would say no, we have autonomy as clinicians to do what we know is best from an evidence-based perspective based on our clinical judgment and we are definitely very engaged with mobility but also taking it a step further to that overall engagement component with ADLs, leisure, et cetera. Next question is, do you both have a further in-depth course regarding these topics? Thank you so much for that. We actually did for occupationaltherapy.com last year, do a presentation on ICU delirium, which I know is available through the catalog. So I would take a look at that and see what you got there. Next question, "If a patient or family member "asked you to explain what an OT is, or does, "what do you tell them?" "I find this to often be a difficult question "to answer simply." Yeah, thank you for that. I would say I usually present it as my role is to help your family member engage in life to the best of their ability and engage in what they want to engage in. And I'm very straightforward, and I will not make them brush their teeth every day if that is not something that they are passionate about, but if there is something else that they are passionate about, I will definitely try to find a way to help them engage in whatever is meaningful to them. Next question, "Is this in an ICU setting?" Correct, the course topic is Back to the Basics: OT's Role in Critical Care, so we really tried to tailor the functional deficits, outcome measures, as well as interventions, to the ICU setting. Of course, a lot of these interventions can be utilized throughout acute care, and probably through other areas of post-acute care, but this one is specifically based on evidence surrounding critical care. Thank you though, for that comment. Next question, "Do you have any suggestions "for any free assessments that are used in the ICU?"

- [Meghan] Thank you so much for that, because it is a very important thing to acknowledge when increasing the amount of outcome measures used in your practice. Each outcome measure is different, so if you are able to do your own self-study and look, I would say the majority of them are free, there's only maybe one or two you

actually have to pay for. So I tried to make this not only a feasible educational experience, but something you can implement tomorrow. The other thing that I found when I was learning about these is YouTube has really cool links to how to administer them, so if you don't feel comfortable asking a team member, you can always use the Internet as your guide and as your friend. I am curious about the use of the MoCA in acute care. Well, let's talk about it. So the question is, "In my hospital, we rarely do it "because the score seems to follow our patients "and have consequences "for their future, like driver's license. "Is there any literature on the use of the MoCA in the ICU?" So excellent question, and I absolutely agree with you, we don't wanna ever carry a negative burden, but we do wanna know where patients are during different stages in their recovery. So my recommendation to you, there is, to answer your question explicitly, any literature on the use of the MoCA in the ICU, no, there is no direct correlation it is feasible to use in any setting, whether it be ICU, acute inpatient rehab, or a sub-acute rehab, or even long-term care, I think that the beauty of the MoCA can kind of break down some of the domains so you can really focus your therapy. But again, if a patient has impairments in specific areas, you really need to focus on those evidence-based treatment interventions to address those to see progress. Every state has different return-to-drive requirements, so that's kind of something that you would have to look into a little bit more specifically, but if a patient is unsafe to be mobilized, or not mobilized, cognitively focused to that area, then you wanna look into it a little bit more.

The next question is, "How many assessments "do you typically complete on evaluation?" That is a great question. Again, you really need to think about the capacity of the patient, so I wouldn't say that there's a blanket answer. With that being said, I would definitely do the CAM-ICU every patient, every time, and the RAAS, every patient, every time, because that's something that should be done to give you information. The next question is, "The JFK "Coma Recovery Scale," getting tongue-tied here at the end, "is mainly in regards to traumatic brain injuries," correct.

"Can it be used for others, though?" So great question, it is only valid for traumatic brain injuries, strokes, and brain tumor patients.

Next question, "How many patients do the OT staff see "in an eight-hour day? "It seems like these tests "would take time to administer and interpret." Excellent question, and I think it's a great point to bring up because it does seem overwhelming. When you get comfortable, all of the assessments, with the exception of the JFK Coma Recovery Scale, are very quick to administer, you just need to feel comfortable with them. In the neurological ICU, when you have a 24-bed unit, typically I have, I don't know, anywhere from eight to 12 patients on my caseload, realistically treating six to seven.

Next question, "Do you have any examples of leisure activities "which you have engaged your patients "in acute care setting?" That's a great question. I would say, honestly, things that it's not maybe the most exciting but medication management is an IADL that I typically do, I also think that handwriting is important to do check preparation, sewing and crocheting tends to be very popular with the elderly population, and then counting is also very nice to sustain attention, and coloring, people love to color, they have adult coloring books and things like that. I'm gonna pass this over to Lyndsay for this next question because it specifically is addressing her, one moment, please.

- [Lyndsay] All right. Next question, "How can we improve OT referrals "to ICU patients?" Yeah, this is a huge one, and one that I feel very passionate about 'cause I think, as Meghan alluded to the understanding from the ordering clinicians, i.e., the advanced care providers or the physicians, they don't necessarily understand what OTs can offer. So what I have done is I've scheduled in-services, I have had our OT supervisors, OT leads, have specific in-services with different providers to educate them on our role as well as creating a handout and posting it at some of the central

doctors documentations sections so that they can look at it, "Does this person have delirium, "are they at risk of delirium, "are they having decreased independence with ADLs?" Then yes, please consult the OT. I operate under the belief that we should be overconsulted rather than underconsulted and then we can utilize our expertise to decide who we see and the timing to intervention. I also find a lot of times physicians will wait till the patient is no longer sedated, or no longer intubated, to get OT involved, when I wanna be involved day one and then I can monitor their medical properties to see if and when they are appropriate for therapy.

All right guys, I think our time is up for today. Thank you so, so, so much for your attention, your participation, you had amazing questions. And if you have any more questions, please funnel those to occupationaltherapy.com and they will get them to us for further information. Have a great day guys, thank you so much.

- [Fawn] Thank you so much Meghan and Lyndsay for a great talk today. I hope everyone can join us for the rest of the week's offerings for this virtual conference on acute care. I hope everyone has a great rest of the day. You join us again on Continued and occupationaltherapy.com Thanks, everyone.