

Study that was done by Ebenezer et al. Looked at a blueberries and so essentially what they did, they put a rat in this glass in case model. So they put a rat and then there was a separation between the two, but they didn't know. And then they put a cat on the other end. So you can imagine the rat was like very stressed out. So after stressing the rat out, right. So then they tested the rats that had blueberries and the ones that did not and what they found was that the rats that had been given blueberries over a course of time actually did better, and they had decreased oxidative stress, decrease the inflammation and that also they were able to roam around within the maze a lot better than the berries that did not have. A consistent flavonoids on board and so in another review. Zhou et al. looked at and within this review a number of different. A foods that had resveratrol in it. Within our red wines our grapes as well as our nuts, and it showed when given these food components are extracts to honey bees, female flies as well as mice, they actually did better in their learning mood and also increase increased in living. And when I attended another conference here, this is a pretty cool. It was a in San Diego, was a berries and nuts conference. There really is one and there's experts on yes on these berries and nuts and so and what they pretty much showed and was altogether was. Research has shown that routine nut consumption and such as our walnuts were associated and they had a protective effects and it's because of the components that are within. Look, she's eating her chocolate. Well, no, you know walnuts outstanding. But they have a lot of really good ingredients within them, such as our melatonin, our polyphenols. And also to our DHA within them that are very good for helping to reduce cognitive decline. And so, of course, you can't give a nutrition presentation without talking about the gut microbiome, right? It's such a such a very hot and growing field here, so this is a nice diagram here where it shows within a depressed individual. So that's probably to your left or perhaps to your right in the depressed individual, your cortisol levels are high and within your brain less homeostasis, more of a disruption here and your immune system is very angry. And then also to your tight junctions aren't as tight. And so your within your microbes are able to seep through. Therefore, altering your gut barrier. But then in a healthy individual right, they have their cortisol levels are within are within balance. So when you were talking about earlier in the other presentations like ohh, I'd like to go for a walk, go look at Mount Rainier. Research has also been able to show that's also able to help to decrease cortisol and then also your. You have a more homeostasis as it relates to your brain functioning. Your immune system is a lot more happier as well, as you see a more tight junctions there where things are a bit more stable. And so in the center here this is showing essentially your gut and all the things that can affect your guts such as drugs, diet, lifestyle as well as stress. But there's also a bidirectional relationship as it relates to the brain. So what can leaders do? You know this question right here is really personal to me because this is a part of the reason actually what drove me to pursue further my PhD, aside from great mentorship from the Doctor McCarthys and other great researchers along the way. But I finally figured out a part of my why? Because as a leader and working on a busy Med-Surg unit and you know at the time, right before I headed off this, was that a Fort Bliss? I realized that like, wow, OK, like our unit was doing really great when it comes to our matrix, our, our, our metrics and we were winning awards. But often I would see, oh, a quite a few of my staff members really fatigued. And you know just, you know, worn out in a lot of times what was some of the for instance like what are some of the popular diets in which that we love to eat. Hot pockets? What else? Pizza. You know all those different things. And again, no food shaming here. And. And so I, you know, I wondered. I'm like, man, you know, if you know our employees, if they also consume even, you know, more healthier things on top of the things that you know, maybe quick things like how much better would our performance be. And so I realized that as a leader I didn't quite have the vocabulary. Or I didn't feel like qualified because I'm not a dietitian to talk about nutrition. How do you go about talking about this? Right? Because and even when I looked at my leadership book, ADP 6-22, it talks about right being a leader is about motivating others. It's about leading others. But there's nowhere in the

book where it talks to you about, hey, it's OK to talk about nutrition because you don't want to offend anybody. You want to ensure that you're helping someone, right? And so as I went throughout my trajectory within my program, I realized that there absolutely is a space in which we can talk about nutrition, and it can even start at the premise of you as a role model, asking the question of did you fuel your mind and body today? And I actually have this sign on my office and so now individuals, they'll come in. And it was like, you know, yes, I did. I did. I ate. I made sure I ate something. I made sure that I did get my exercise in, but it's about taking care of the total person. And so leaders can actually build a competitive edge. When we look at the nutrition link, because this it's a link to also mission degradation and we can also use nutrition as a way to operationalize and to use it as a performance multiplier as well. We can identify the nutrition landscape to support our soldiers as well as the mission. We can also weaponize nutrition for optimal brain performance if we know how to use it. And then the other is well, is that it also takes. Leader engagement. So I'm coming for your leaders. So this is one framework in which I'm working on called Leader Inspired Nutrition and it's kind of it's a strategy that's built upon you know ways in which that we can do this. I put this in more kind of ends ways means map if you will. The outcome is to foster optimal nutrition as well as healthy lifestyles of soldiers through engaged leadership. For instance, leaders that can model positive nutrition behaviors. One way to do that is to just sit down and have a meal with your folks. What does that tell you when you do that? When you have a meal with your folks? Yes, you're building connections. What else? Yes, the connection and trust. So if I'm a leader, I asked you to do 15, 20 different tasks, right? That's gonna let me know. Well, did my did my person, did they just grab a snicker bar and keep it moving or did they ask you? Were they able to sit down and actually have a meal? And it's that so. And that's really good. That social connection is so key and one even within research as we looked at mental health that's often missing. The other thing is that we can assess our folks nutrition knowledge, especially when I think about a lot of our young soldiers that are coming in, many of them, you know, don't have the cooking tools strategy. So they've, the Army is now stood up like the teaching kitchens to go over those basic strategies for that. And so foods for brain health. Here's some things for the toolkit so one Omega 3, which are packed in our fatty fish, nuts and also our flax seed as well. Eggs, tons of micronutrients within A, D, E, and B12 flavonoids. This is all about eating the rainbow so our fruits are vegetables, are packed within their fermented food. Bananas great for mood. Dark chocolate because of the epicatechin as well as the cocoa flavonoids within it. It's also has been linked as well. And helping to decrease arterial stiffness therefore potentially may be able to help in increasing blood flow. Right you have increased blood flow. That's also too may help with greater brain functioning our teas as well has some of them have caffeine in it. Coffee, coffee can be a great stimulant, and you can also use some of these stimulants To balance some, I know we didn't talk about sleep much, but to kind of take strategic naps and when to use caffeine for that. Whole grains have also been targeted at because of being able to help to reduce inflammation and because of the B vitamins that's also connected within it. So our oatmeals our other whole grains, breads, pastas and other consideration is that it takes a total. A total practice so regular exercising, getting good sleep. That's the other one. We didn't talk about. How are you sleeping? Do you sleep? How many hours sleep do you think you get? You get you are great. You need, you know, you know a model health outstanding. I love that that was about. Outstanding, but yes, sleep it is, uh is so instrumental and we just need to get it more. One of the strategies in which we can use as well talk about this a little bit more in another presentation is this idea of sleep banking. You heard of that before? And basically, where so if you know you have, you know, let's say a big shift that's coming up right and or you know that you're gonna have 12/4 hour shifts. Well, what you wanna do is you want to store up enough rest by getting more sleep so that you have enough in your sleep bank, you know, in order so that you can sustain yourself a little bit more. And what we do not want to get to we don't want to get to sleep debt. We're actually we have loss. A lot of sleep and are, and

we owe our body a great debt of sleep. Yoga is another great one. Does anyone do yoga? Ohh yes and yeah, So what benefits have you gotten from yoga? Injury prevention. So a lot of great stretching. Flexibility, OK. Yes. Fantastic. Yes. How about you? Miss Hodge? Stretching. Outstanding. OK, I thought yes. Umm. Yes. A lot of great benefits. Mindfulness is another one, and also of course it decreasing our alcohol intake. Here's a here's another resource here. This is Champ Consortium for health and military performance. I found a lot of people don't know about champ, but it's the it's a wonderful resource. So if you want information on nutrition readiness, physical readiness, there's a QR code up there on Social Fitness, check out that website. So this is like. It has, like, your most evidenced base. A lot of researchers are working on the ground and getting information as it relates to total Force fitness. And so some key takeaways here, a healthy nurse is a resilient nurse. Colonel Warman, She showed us. She showed us how to do it, and she did it with the great attitude. She was really passionate about what she really believed in. H2F is a lifestyle. Remember, there's four, five domains as it relates to H2F. And food is interconnected within our lives and food can absolutely change our biochemistry as well as we thought about some of the bio active compounds within it. And nutrition as a nutrition is a brain optimizer and it actually may serve to improve our psychological health and leadership. It's an essential part of the process. What questions do I have? Yes. I'm sorry, repeat the question. What is the impact of sleep banking? So does it work? Ohh yes. Yes, yes. I don't have the statistics on that today. You know, but there's some somewhere in a statistician. Doctor McCarthy, you may know this as well. It's almost like driving drunk when you're not getting enough sleep and you're not getting enough rest. And so I would challenge that individual to try sleep banking to, to store up that sleep to plan and to anticipate because there's, yes, there has been a great deal shown with sleep banking and improve mental clarity or decreased Some brain fog with that decreased musculoskeletal injuries has also too been linked to that as well. Great. Is there any other questions? Yes, ma'am. Yes. Yes. Yes. So every night or two, MSAs and SSAs. We go together during lunch. That's great. Your own. Bring my own food and we put it on the table. And it's like a smorgasbord. Why yes. So that way? I can share my food with that even if it's like Whole Foods healthy, it still tastes good and I could influence them with that. So they now started eating, you know, healthy food and it's kinda healthy there. This one has problems with hypertension. The other one. Yes. And that's terrible. No other means of sharing with them about the importance of keeping your gut healthy. Right. You got that? Kill the good bacteria. I thought and that that is one of the reason why there's imbalance within our body in focus doesn't kill it. So it's fun. During lunch with coworkers, they share lunch with me too. That's great. Yeah, they're lunch. So it is a fun way of sharing and influencing others, but yeah, thank you so much for sharing that. I was trying to go back here because I was like, man, that was the perfect model, but it was not allowing me to. You're absolutely right. Because in the leader inspired nutrition, that's one of the things that it touches on. And that's that component of that cultural as well. It encourages the social connection, and then you're talking about micro microbial diversity as well, which is, which is key. And so. Mm-hmm. Right. And that's why we have imbalance in there. And when the bad bacteria, you know, colonize it, or gut, that's when we, you know, field all these illnesses and problems in our bodies, absolutely. Fantastic. And I can. Yes. So yes. So I grew everything so that that is a very, very good, very good definition of you know, how do you stabilize your microbiome? We're still, we're still trying to figure out what are those foods to help us capitalize on that because partly of what you're seeing as well is that some foods may actually help to create synergy with some foods that we eat to help stabilize our gut microbiome. Excellent. If I published which one on the berries? On yes, I did publish. UM, so one you can find in Molecules, if you my Google my name so one in Molecules and then one in Nutrients. So one is a review and one is actually an experiment. So the one that's an experiment that's more looking at the benefits of berries on hearts and the benefits of berries on our microglia or our brain cells. And then the other one is a total review looking at

the different organs and the strategies that we can use. Yes. buy at the store today. Which ones would you choose? Yeah, great question. So here's a scientific answer. You may not like. But it's good for you, and I was told all the way and he used to like ohh, it's the IT depends. That's a very good, complicated question, but the thing that I want to share with you is because we have what's called ORAC factors, just like with oxygen radical antioxidants. So basically there is an antioxidant ranking schedule, OK, ranking score for these berries, if you will. OK and even foods in general. So a vegetables as well as fruits as well. The general thought innocence is that one the darker the berry tends to be the higher content, but it can depend because for instance my asparagus could be higher than let's say maybe you know for instance like my cilantro. But actually I think my cilantro is probably higher than that one. So you can actually put in ORAC and you can look at antioxidant content or something of Google. And then there's a ranking from that. But what I typically tell in the visuals as well is. You know, if you're eating your fruits and your vegetables eat eating the things that that you like, that is a wonderful starting point. And then it's about doses as well. So eating a eating a dose. There's so one of the tricky things in the area of nutrition is that there's not a quantified dose of how much I should have in order to get here, right. And that's one of the things they continue to work on. And part of the reason is every individual has a different is there different bio availabilities within the food itself. And then also our microbiome system is not the same for everybody. And so. So eat the fruits that fruits and vegetables that you enjoy eating. And I typically like to, you know, a handful. A handful of berries, whatever. Strawberries, blueberries. And I typically just like to get 3 doses a day. I do share foods. So when you're having cakes and cookies bring, I bring the apples and oranges as well to help balance that out. And so, so, yeah. So it depends and everybody's microbiome system is different. Just eat your fruits and vegetables. Your peels have high antioxidant content as well in them, yes. Don't eating full food. Yes, but it does change how it spikes your glucose. So. Is there any other? Pros or cons? Sure. The frozen? Versus throwing it in a smoothie and worst case scenario, yeah. Throw in a smoothie if you know. If that's the right. But yes, that's really good. You guys are such a smart crowd. So she's asking, which is kind of the best method, if you will, to be able to conserve the most flavonoids, get the most antioxidants. The bang for my buck. Right. So one is whole foods is all is always great. But the thing that I've also found in research as well and that they've done is that even your frozen fruits and vegetables can conserve quite nicely as well. So your whole foods is going to have your nice quantity, but even you're frozen bags also too offer good antioxidant preservation. And part of it depends on also. How they preserve it as well I should. I should add that so it. So I would tell you if you're freezing it or if you're eating whole, both are good and it and I would encourage you just to increase your amount because partly is dose. It's just like for instance with dark chocolate, OK and so dark. So when you eat dark chocolate and all, it's good compounds within it. Well this dose effect is about 30 minutes to two hours. And then in order to get that peak again of your benefits, you're looking at another dose again between about 30 minutes to two hours out. It's gonna last you OK? And then it made depend as well on how your how you're giving it to. How you may be providing it so, but I would always tell you because some individuals say, hey, supplements, you know, supplements, supplements is the answer. And I always caution individuals when I talk about supplements as well is that you want to make sure that it's research based, it needs to be third party tested because not everything that's on the shelf is FDA approved or it's been through the rigorous research. And so you know eating your whole foods and vegetables is definitely the way to go. But there are some supplements that have been shown, you know, research based to be able to provide a nice compliment. So dosage is important as well as it's OK if it's whole food or if it's frozen, you're both going to get good benefits, probably going to get more through the fresh. Yes, ma'am. Umm. Yes. Yeah. And your has like what? You said that that should be measured, right? So I really literally measure every well. That I put in my smoothies, umm. Especially if you have problems with blood sugar. This high sugar. Yes. So this will help

you because it will tell you the amount of protein it has, the amount of carbs it has. So you can see the total of parts you can take with the. Very good, very good. Yes, smoothies is a nice way to get, you know, a lot of different, you know, fruits and vegetables, nutrients that you need more. Nutrient dense. Yes, ma'am. Yes. Umm. Yes, all our doses more often, yes. It you know, can build that endurance. Absolutely, absolutely. You know, so that is not like my that's not my area of expertise, you know, an expert on the other end is probably to the right, which is probably Doctor McCarthy, who had known has done, you know, within this lane she that's about intermittent fasting. So. So that's something that I can definitely get back to you if you like. But that's not my area of expertise, to be honest with you. Yes. I think I went too fast. Yeah. So I think it was like a nurse. OK. Yes. And is that all? OK, well, thank you, everyone, for your time, patience. I appreciate it.

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So Lieutenant Colonel Currie traveled from Brooke Army Medical Center in San Antonio, TX to be here. So on behalf of the Madigan leadership, Madigan staff, welcome back and we can't wait to have you back at Madigan again. Thank you. Thank you. Ladies and gentlemen, the next guest will begin their presentation in 5 minutes.

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The next guest will start their presentation momentarily. It is now my privilege to introduce our next speaker, Colonel Chris VanFosson currently serves as the Chief of the Center for Nursing Science and Clinical Inquiry at Brooke Army Medical Center in San Antonio, TX. Unfortunately, he was unable to be here live, but he was gracious enough to prerecord his presentation. He will elaborate more about his background within his presentation. Please help me welcome Colonel Chris VanFosson.

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First to the individuals ability to competently provide patient care in a deployed setting. Kak, Burkhalter and Cooper indicate that an individual who is clinically competent is one who possesses the knowledge, skills, traits and abilities to perform the clinical tasks consistent with their scope of practice as determined by their training and certification or licensure. Similarly, in 2018, the DoD adopted the consideration of an individual's knowledge, skills, and abilities, or KSAs as determinants of clinical readiness. Therefore, individuals clinical competence roughly equates to their individual clinical readiness. So throughout this presentation, when, I say individual clinical readiness you should think [competence]. To achieve individual clinical readiness and then study methods of optimizing individual clinical readiness for the future battlefield, it's important to first understand how individual clinical readiness is defined, how it's achieved, how it's measured. And its consequences. This can be achieved through the construction of a model that clarifies the relationships between concepts and informs future study. Therefore, my purpose today is to describe a model of individual clinical readiness that can be used to inform future efforts to achieve individual clinical readiness across all clinical specialties. And to facilitate future study of individual clinical readiness and it's associated

factors. Development of this model occurred using the theoretical model synthesis process described by Walker and Avant. This three-step process was selected because it provided the considerate for the consideration of evidence already in the literature. The steps of this model include. Specification of the key concepts. Identification of factors related to the key concepts and the relationships among those factors and concepts. And organization of the concepts, factors and relationships into an integrated network of ideas. After identifying the key concept. Which is individual clinical readiness. A search of the literature resulted in no articles. Alternatively, a search of the literature for the civilian equivalent of individual clinical competence revealed numerous articles from which an understanding of individual clinical readiness could be derived. Although these concepts are substantively equivalent. And individual clinical competence could have been the key concept. The phrase individual clinical readiness was selected in order to remain consistent with the readiness lexicon used throughout the military. Through the through the review of the clinical competence literature. The associated factors and their relationship to the individual clinical readiness were identified. These concepts and factors were then organized according to the identified relationships into an illustrative model of individual clinical readiness. For your information, as I describe and define the key concepts and related factors, I'll present slides that build the model over time in the hopes that you will help you keep track of the relationships as I described them. Individual clinical readiness is the clinically oriented service members ability to meet the demands of the military relevant clinical mission to which they are assigned. And here I wanna highlight that I'm saying clinically oriented service member as opposed to nurse or medic or whomever. Again to go back to the point that this. Model should apply regardless of the clinical subspecialty and the level of the profession, enlisted military or enlisted, officer, it doesn't matter. This definition is an amalgamation of military readiness and clinical competence meant to differentiate between the knowledge, skills and abilities required to perform the clinical mission in a fixed MTF or medical treatment facility, and those required to perform the clinical mission in an operational, potentially austere setting. Again, if it was just in a stateside hospital, that would be clinical competence. But we're talking about the ability to perform their operational mission. That means individual clinical readiness. In addition to ones ability to provide care to patients experiencing health challenges, clinically oriented military personnel in an operational setting must contend with military and environmental threats to themselves and their patients, as well as resource limitations. that require a solid clinical foundation and personal adaptability to overcome the challenges of their work environment. Medical readiness, a phrase used in some military documents, might be considered an appropriate phrase to represent this key concept. However, the phrase medical readiness is used interchangeably to refer to a service member's personal health and fitness, as well as the readiness of clinically oriented service members to perform their assigned military medical mission. As such, this phrase is less than ideal because it's imprecise. Individual clinical readiness must be based on the context of the assigned clinical emission. The clinical context might include the makeup of the clinical team. The type of patients, the clinical environment. Or the expected resources available among many other contextual characteristics. As such, a universal expectation of individual clinical readiness is likely to admit, omit important aspects of writings that are important in some contexts. Therefore, it's important to consider and assess individual clinical readiness within the context of the assigned clinical mission. Assessing individual clinical readiness is challenging to objectively accomplish because there are few direct indicators of the concept. Instead, individual clinical readiness is frequently represented by surrogate, indicates surrogates, indicators that represent mechanisms by which individual clinical writings might be achieved. These include methods such as written tests and checklists. As well as subjective measures such as or methods such as patient management problems, observed clinical situations and student observation. Some methods are a hybrid of objective and subjective methods to include oral examinations, the use of simulated patients

and the observed structured clinical exam. Individual clinical readiness exists on a continuum. The Dreyfus model of skill acquisition suggests that this continuum is one that reflects the individual's growth and development from a novice toward an expert level of skill and critical understanding. Novice Healthcare team members have little experience in their assigned clinical mission. As such, they are bound to act according to the very specific rules and have little ability to use discretionary judgment. Conversely, expert healthcare team members rely on professional knowledge, skills and abilities honed by an array of clinical experiences to quickly provide the appropriate clinical intervention. Experts do not necessarily need all of the objective data to support their clinical decisions and act intuitively with little risk to the situation. Between these extremes, healthcare team members progress as they gain increasing levels of knowledge, skills, and abilities in a given area of practice, such as critical care or trauma. Individual clinical performance is the act of performing clinically according to one's individual clinical readiness. The separation of readiness and performance acknowledges the importance of intention, personal control and environmental influence on an individual's clinical actions. Clinicians capable of meeting the demands of the military relevant clinical mission, in other words, they are already competent and ready, still may not act according to their knowledge, skills and abilities. This may occur due to psychological barriers such as fear, anxiety or anger that might limit their intention to act. Additionally, clinicians might lack the personal control to act appropriately. For example, clinicians might lack the ability to act according to their intentions because of the medical rules of engagement or the absence of the needed medical supplies that simply prevent them from doing the thing that they believe is the right thing to do. This slide illustrates the relationship of the two key concepts for this model, individual clinical readiness and individual clinical performance. Again, I'd like to emphasize the difference between readiness and performance. In order for someone to perform according to their knowledge, skills, and abilities, the conditions must allow the clinician to develop the intention to act. We all know of times where someone who is very well trained and capable, but for some reason does not act according to their readiness. Patient outcomes are a result of individual clinical readiness that results in individual clinical performance. Liu and colleagues describe patient outcomes as any change in patient status that results from care provided by the patient care team. Patient outcomes may vary depending on the clinical perspective. Examples of nurse sensitive outcomes include the development of pressure injuries, patient falls and the occurrence of central line or urinary bladder infections. And combat casualty care, the major outcomes are more morbidity and mortality. As such, the goal of individual clinical readiness is to minimize the occurrence of death and to prevent further injury. The relationship between individual clinical readiness and individual performance and patient outcomes as well described in the literature. In fact, it's the very relationship that underlines every clinical paper you can find. If healthcare personnel were not able to influence patient outcomes, we would all be in the wrong profession. That is to say, intuitively, we know that the opportunity to affect patient outcomes is why people enter healthcare the healthcare profession. And so the relationship between individual clinical readiness, individual clinical performance and patient outcomes is the very basis for healthcare, education and training. On this slide, you can see that I've added patient outcomes as a result of individual clinical performance. Again, take note that the patient outcome is a direct result of individual clinical performance and an indirect result of individual clinical readiness. Also, please pay no attention to the length of the arrows between these concepts and factors. The length has no meaning, I'm just giving myself a little room to build the rest of the model later. The first related factor of individual clinical readiness is one's individual characteristics. You can find the use or accounting of individual characteristics in almost every peer reviewed paper. However, the phrase individual characteristics is not frequently defined. Park and colleagues defined individual clinical or individual characteristics as the parts of a person's being and background that influenced their beliefs about how they are supposed to behave and what is considered normal. How they

receive and share information, how they perceive others and the environment around them. And their ability to physically execute the psychomotor tasks. Examples of individual characteristics include age, gender, ethnicity, socioeconomic status, education, nationality values, intelligence, group membership, past experiences, religious affiliation, personality, mood, emotions, exposure to information. Social support coping skills. And. Maybe medical conditions? One or all of these characteristics may play a role. Either directly or indirectly. In a person's ability. To or willingness to perform their clinical duties in accordance with the clinical mission to which they are assigned. Here I've added individual characteristics to the model. When you look at the relationships in the model so far, it's evident that an individual healthcare worker's individual characteristics also. Have an indirect effect on the patient outcomes. Does this make sense? Let's think about this a bit. The health care worker might have a physical limitation, such as back pain, that might limit their individual clinical readiness, which in turn limits their clinical performance and results in some sort of alteration of the patient outcome. Normally I wouldn't think of back pain as limiting one's competence, but as I mentioned earlier, individual clinical readiness also must have account for the healthcare team members assigned military mission. If the health care team member is assigned as an enroute care nurse and back pain limits their ability to provide care in the back of a Blackhawk helicopter. That health care team member might make clinical performance choices that they might not make if they were pain free. Individual characteristics also might influence individual clinical performance. For example, recently in the literature there have been reports that minority patients often receive less pain medication than white patients. This may be an indication that an individual health care workers biases might influence their willingness to provide the needed medication or other treatment modalities to their minority patients. Now, I'm not applying this is a problem in the DoD, or that this would happen on the battlefield. I'm simply using these findings from the literature to illustrate the influence of the healthcare workers individual characteristics on their performance, their readiness, and their outcomes. The second related factor is education, which is also prominent in the literature within the KSA model adopted by the DoD. Once education represents knowledge and is the basis for individual clinical readiness through education, one obtains the knowledge necessary to understand and complete the assigned clinical mission. This is true for any profession, trade, or craft without a basic knowledge of the assigned topic, one cannot be expected to consistently achieve the skill or ability related results. Knowledge may be achieved through formal or informal education. Similarly, education serves as the foundation for skills that are developed through training and exposure to situations that are similar to the assigned clinical mission. I've added education to the model here to reinforce the connection to the DoD's KSA model. I've also included the K beneath the education. This edition to the model suggests that there is an indirect relationship between patient outcomes and the health care team members education. This has been widely recognized for very long time, but continues to be a reinforced in the literature. For example, in 2019 a study by Harrison and colleagues found that when hospitals have a greater proportion of baccalaureate prepared nurses, their patients have better outcomes after cardiac arrest. However, it's not uncommon for two well educated clinicians to have differing levels of success with clinical competence and performance, resulting in different patient outcomes. You likely see this every day in your clinical environment. For example, there might be 2 Army ICU nurses and I'm gonna pick on ICU nurses because I'm one. These two ICU nurses receive the same didactic training at the critical care and emergency nursing course in San Antonio, but have differing degrees of success with their clinical performance and achieving their desired patient outcomes often. Because of those individual characteristics. The next related factor to individual clinical readiness is training within the context of the DoD's KSA model. Training represents the skills required to complete ones individual clinical mission. According to the DoD definition, training is the development of psychomotor skills necessary to perform ones identified role with the

goal of improving one's capability, capacity, productivity, and performance. On the slide, I added the word clinical to make the point that the focus here is on clinical skills, but the DoD definition applies to all military occupational specialties. As you can see, again I've added training to the model here and to reinforce the connection to the DoD's KSA model, I've also included the S beneath training. This addition to the model suggests that the healthcare team members training has a direct influence on their individual clinical readiness and an indirect influence on their individual clinical performance and patient outcomes. As a reminder, training is different from education because training is focused on the development of psychomotor skills. The more one trains on a skill, the more efficient and confident they become at performing that skill. When coupled with education, training, builds and individuals confidence in their ability to accomplish the task or perform the skill at the appropriate time and place. In turn that have confidence may influence the likelihood that that health care team member will overcome personal limitations and perform according to their readiness level. Another related factor is that of exposure. Exposure is most often found in the literature referring to discussions of risk, such as when talking about exposure to some agent of harm, like a chemical exposure. I'm using the term here to represent an individual's contact with real or simulated clinical experiences that allow them to practically. That allow them practical opportunities to apply. Their clinical knowledge and skills. You might think this this. You might think that this could also be called clinical experience. Clinical experience often is represented as a measure of time, such as years. Unfortunately, this measure of time is imprecise because measures of time do not adequately reflect the quality of the time spent understanding and learning from exposure to the patient, their needs and the environment in which one works. Additionally, experiences too easily represented with little reference to the quality of the exposure. In other words, one could have 10 years of experience in a low producing organization and be less competent than one with two years of experience in a high producing organization. An important note about exposure. Currency matters, in other words. The recency or how recently you executed one of those or those skills that you've trained on so much? Individual clinical readiness is limited by time because knowledge and skills degrade as time passes. Recent exposure to clinical situations fosters greater individual clinical readiness. This slide includes exposure and again to reinforce the connection to the DoD's KSA model, I've included the A beneath the exposure to represent abilities. This edition to the model suggests that exposure has a direct influence on individual clinical readiness and an indirect influence on individual clinical performance and patient outcomes. This was born out of literature as well. For example, a study by Dutton and colleagues found the higher that higher than average number of years of experience, the lower the occurrence of pressure injuries. I know, I know. I just got done saying. That. Using years of experience is not the preferred method as they used in their. Paper but I can't create the data or studies for a term that hasn't been used yet. Now you might have identified. The individual characteristics also might influence a person's education, training or exposure, either directly or indirectly. When constructing the model, I did not connect individual characteristics to the other factors because I'm focused on individual clinical readiness and not the relationship between the characteristics and the other factors. So by converging all four factors in individual clinical readiness, the model allows each of those factors to have interplay and interaction with each other. Education, training, and exposure might influence or overcome a person's individual characteristics forever. My point is that any combination of these factors. Might influence individual clinical readiness in some way. Another related factor and a major influencer of individual clinical readiness is the quality of the clinical exposure. The term quality is often found in the literature, usually in relation to the quality of healthcare delivery and performance improvement. Under these uses, the World Health Organization defines quality as the degree to which health services increase the likelihood of the desired health outcome. I adapted that definition to the context of individual clinical readiness. For me, the quality of exposure is the degree to which the clinical exposure

increases the likelihood of the person to develop the ability to correctly apply their clinical knowledge and skills. For example, it's reasonable to expect a nurse to be better prepared for combat trauma care after having worked in a trauma center. Then a nurse who completed TNCC but never worked in a trauma center. Both have trauma knowledge, skills and abilities, but the quality of the trauma center exposure better prepares a person for combat trauma care compared to the quality of the simulation used in TNCC. Furthermore, one might expect the health care team member to be more likely to actually perform according to their knowledge, skills and abilities if their quality of exposure was high. This may be a result of increased confidence that they develop in those high those high quality exposures. Here I represented the quality of exposure as a dotted box around the key concepts, individual clinical readiness and individual clinical performance. The personal characteristics, education and training. May influence the key concepts well before exposure, and so we're not included in the box. I used the dotted line to represent the many unknown factors of a given exposure event that might influence the key factors. This idea of exposure quality might be a bit challenging to understand, so here's another example. Imagine a nurse working on a telemetry floor for several years. Every shift he prints out telemetry strips. Does a quick interpretation acts on them as needed and then adds the strips to the chart. Because the nurse was so has so many years of experience, one might believe that this nurse is a telemetry expert, right? But. What if the nurse was incorrectly interpreting those rhythm strips for all of those years? I would call this a low quality exposure, resulting in a lower individual clinical readiness and a lower propensity to perform appropriately. Another thing to consider is the manner of exposure. Here I'm thinking about times when preceptors and preceptees consider events like CPR using either a discussion simulation or a real-world exposure. For infrequent events like CPR, the exposure may only be limited to a discussion or use of simulation. As useful as these, as these methods might be the highest quality of exposure is actually doing CPR on a live human. A person who has actually performed CPR will be more ready and capable of performing in the future than someone who's only performed CPR during simulation. The patient care environment is frequently found in the literature as a consideration of care quality in any organization. Here, think about The Joint Commission's Environment of care requirements or the Agency for Healthcare Research and Quality or HQR. They're patient safety culture. The patient care environment is defined as the physical policy and personnel structures, culture and processes of an organization in which patient care is provided. The patient care environment during exposure might influence ones individual clinical readiness. Exposure is a period when a person's knowledge and skills are solidified with practical experiences. Healthcare team members who gain exposure in a patient care environment that is safety oriented, inclusive, interdisciplinary, and just may develop better patient care habits than one who gains exposure in a more caustic patient care environment. Environmental influences also may limit ones individual clinical performance. For example, this would be particularly true in a military situation that poses an imminent threat to the clinician. That is, although capable of performing according to their assigned clinical mission. The clinician may be unable to actually perform according to their intention because they have to. They had to find cover under a mortar attack. As a result, the patient might experience an unwanted outcome. Additionally, the patient care environment may be influenced by one's clinical performance. For example, a novice nurse might not consistently apply safety measures to prevent a patient fall. While a nurse who is higher on the individual clinical readiness continuum. Might be more attentive to the patient of all of the call bell. I'm sorry, might be more attentive to the placement of the call bell or the bedside table and to turning on the bed alarm. Here I've added the patient care environment description to the dotted box to represent the unknown factors of an environment that might influence readiness and performance. Additionally, the patient care environment is listed as a separate outcome of the individual clinical performance to highlight the individual's influence on the rest of the patient care environment. The patient care environment is very

similar to the practice environment often found in the nursing literature. Eileen Lake defined the practice environment as the organizational characteristics of a work setting that facilitate or constrain professional nursing practice. I've chosen not to use this term because I want to represent environmental influences that represent influences beyond or that may be broader than the nurse practice environment. In other words, I want to be more inclusive of all. Practice environment considerations, not just nursing associated considerations. The next related factor is that of team clinical performance. This phrase can be found in the literature, but is not explicitly defined. Whether you think of the team as a small group of healthcare personnel such as a nursing shift team or as an entire organization, what is explicit throughout the literature is that team clinical performance influences patient outcomes. I've defined team clinical performance as the team's ability to work together within a complex and dynamic environment, applying the appropriate knowledge, skills and abilities to patient care scenarios to achieve the desired patient care outcomes. Team clinical performance may be influenced by or result of an individual's clinical readiness and performance. Team clinical performance may be a summation of the clinical readiness and performance of all members of the team, but also is contingent upon numerous other factors outside of these personalities, communication, team experiences and many other factors might influence the overall clinical performance of the team. As you can see here. I added individual team clinical performance. I'm sorry as you can see here I added team clinical performance as a result of individual clinical performance and as an influencer of patient outcomes. The addition of team clinical performance to the model suggests that the individuals influence the success of the team and the team influences the health of the patient. Team clinical performance may be a summation of the clinical readiness and performance of all members on the team, but also is contingent upon numerous other factors outside of these. Zajac and colleagues. Developed the comprehensive team Effectiveness framework, which highlights the complexities of team clinical performance including. The individual, the influence of individual clinical readiness and performance on the team dynamics. As you can see in this model, many factors influence the success of health care teams and individual clinical readiness is only one foundational piece. That framework. The last two related factors are not actually factors related to individual clinical readiness or individual clinical performance. I'm discussing these here so as not to imply in the model that patient outcomes are only influenced by individual or team performance and the patient care environment. The patient's own environment will influence patient outcomes. The patient's environment is the summation of the physical, cultural, and social scenarios surrounding the patient outside of the health care organization that influences the patient's response to individual or team clinical performance. Influenced by the patient Care patient environment. Is widespread in the literature. Think about food deserts or the absence of family members or their own occupation. No matter how well a healthcare team member or an organization performs, there are environmental factors outside of the patient care environment that may not support the patient achieving their healthcare goals. Additionally a patient's individual characteristics will influence their own outcomes. Also ubiquitous in the literature, patient characteristics are the qualities or traits derived from their biologic makeup as well as social and behavioral experiences that comprise their being and influence their biologic, social and behavioral response to their patient care experiences. These characteristics, such as age, genetic makeup or medical history, also have a significant influence on the patient's health outcomes, despite the efforts of the individual or team clinical performance. I've added the two last factors, patient characteristics and patient environment at the end and unconnected from the rest of the model to account for their influence on patient outcomes, but not to imply a relationship to the other. Elements of individual clinical readiness presented throughout the model. This is the completed model. As models do, this is a graphic representation of the concept of individual clinical readiness, how it's developed and influenced, and how it might affect patient outcomes. This model also suggests relationships that can be further studied to

better understand how to prepare clinically oriented service members for any future operating environment. Finally, this model can be used as a communication tool with leaders, trigger pullers or across the MHS, who might not fully understand development of individual clinical readiness. Let's discuss some ways in which one could use this model of individual clinical readiness. The researcher in me would use this model to create a conceptual framework for a research study. If I was interested in learning more about how individual clinical performance changes as the type and quality of exposure changes, I could use this framework to identify the other elements that might. That I might want to statistically control for in my analysis these things. These could be things like the person's individual characteristics, their education or their training. The healthcare leader in me would use this model to help my subordinates understand why it's so important that they get the sets and reps in a given clinical environment before deploying and support of an operational mission. The model would also remind me of the model also does remind me that getting the sets and reps in the stateside hospital is helpful, but ideal preparation would include a patient care environment that is similar to where the operational mission is expected to occur. Finally, the consultant in me would use this model as a tool to argue in favor of increased military partnerships at a Level 1 trauma centers around the United States. The patient care environment at a civilian hospital might be significantly different than an operational environment. But the quality of the exposure might be the most important factor of this type of training. Which, by the way, would be a great research question and would justify the need to use this model for another research effort. Hint, hint to any of you budding researchers out there. As I end this discussion, I wanted to leave you with five key takeaways. So if you remember these, you don't even need to remember the drawing. First, individual clinical readiness is basically individual clinical competence, but it includes an orientation to the military clinical mission. Again, it includes orientation towards a military clinical mission. That's the difference between competence and readiness. Clinical readiness. Individual clinical readiness is influenced by a clinician's individual characteristics. Their education, their training and their exposure. The quality of the clinicians exposure and the patient care environment influence individual clinical readiness. Individual clinical readiness does not necessarily equate to individual clinical performance. One may know how to do something. And they may know what they're supposed to do. But they still might not do it. They have to have intention. And they have to have control to be able to execute according to their intention. Individual clinical readiness only indirectly influences patient outcomes. A person with high clinical readiness still might not produce the desired outcome. And large part again going back to the challenges with individual clinical performance. Thank you all for your time and let listening to me drone on.

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Thank you, Colonel VanFosson. I will now announce the 13 winning names for the next door prizes. Winners will receive either a gift card, mug or badge reel with a battlefield and disaster nursing pocket guide. So the first names Lieutenant Anna Miguel, Lonnie Lai. Lily Kostuch, Therese De La Torre. Nina Mora. Barbara Travers, Captain Richard Sianoya. Rachel Baxter, Althea Baptiste and Danielle Mudd. We are now going to take a break. Please visit the vendor displays, look around the room. Please be back in your seats by 11:50. Quick announcement for anyone needing to do their DMHRSi. There was an e-mail sent out with the link to this presentation with the Madigan project number and for anyone needing the DMHRSi code FALA_0125. [Audience member conversations happening in the background.]

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Ladies and gentlemen, the next guest will start their presentation momentarily. Please find your seats. Before we begin, I'd like to extend a warm welcome to our distinguished guests here today. Those include Brigadier General Simonson, Colonel Sims-Columbia, Colonel Swigger, and Colonel Wickenhagen. Thank you for being here. It is now my privilege to introduce our next speaker, Lieutenant Colonel Wood is the Deputy Chief of the Center for Nursing Science and Clinical Inquiry at Madigan Army Medical Center. Lieutenant Colonel Wood direct, commissioned into the Army Nurse Corps in 2005 after receiving her bachelors in nursing and in biology from State University of New York at Brockport. She has spent most of her career as a critical care nurse with a background in cardiac nursing. She earned an MSN in nursing education from East Carolina University in both a postmaster Certificate and Doctor of Nursing Practice from University of South Alabama. As an Adult-Gerontology Clinical Nurse Specialist. She most recently earned her PhD from Augusta University. Her primary research interests are nutrition and wellness in the context of readiness and cardiometabolic risk factors in these service member population. Lieutenant Colonel Wood has had diverse positions as a critical care nurse. Ranging from forward deployed in route care to the White House Medical Unit in Washington, DC, She has adjunct faculty in the MSN and DNP nursing programs at the State University of New York at Brockport, where she teaches courses in philosophy, theory, leadership, and research. She says she is certified as a critical care nurse, a critical care clinical nurse specialist and most recently was awarded the Alpha Proficiency designator. Lieutenant Colonel Wood has four children, Jackson, Kellan, Maisie, and Lucy. Please help me welcome Lieutenant Colonel Racheal Wood.

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Can you guys hear me? OK. OK. Perfect and online. OK. So I do know that I am the last thing standing between you and lunch, so I will try to make this pretty interactive and we do have some activities and ohh I wanna try to clicker here. Let's see if this works, but maybe it'll work for us. And so if I start to drone on throw candy at me, only candy. But I'll take candy. So I am delighted to be here. It's very exciting. This is my first time here. First time speaking here. So thank you for having me and it's been really interactive and a pleasure to. Walk through and talk with everyone. So what we'll do today is it'll be a little interactive. We'll get your thinking about project application in your area regarding research, evidence based practice or quality improvement. Here's our obligatory disclosures, so I have nothing to disclose and the views in this presentation are all mine. So I'm right down the road, as they said at the Center for Nursing Science and Clinical Inquiry at Madigan. And I will tell you that throughout this presentation there will be shameless plugs for the CNSCI. So I'm going to say that right up front and please come and see us. We absolutely love to talk about all of this stuff. And so if you are excited about these things or maybe not so excited, we can get you excited, please come see us because we are your tribe. We love to nerd out on this stuff. And so we are happy to help you through anything regarding. Activities like EBP, QI and research. Here's the objective. So what I'm hoping is that the conclusion of this presentation you can describe in discuss these objectives. So the first one is we really want you to be able to acknowledge the significance of research, EBP, and QI/PI and clinical practice and. And we know it's significant, right? That's something that's drilled into us right from the get go. And we know that if you're participating in these activities, if you're a healthcare worker or in an organization, that is. Having these activities go on that you have better improved outcomes, right? And that's what we want. We want improved outcomes to benefit our patients ourselves as healthcare professionals in the organization. And so I won't spend too much time on that, but I just want to acknowledge that that's why we do this and This is why we're talking about it. For me personally, I would like you to take the take away for today is to be able to compare and

contrast the differences in similarities between research, EBP, and QI, because it's a big world out there of research, EBP in QI/PI right, and they overlap a lot, but there's differences between them and we really want you to take away what you can use to most meaningfully apply in your practice. So we want you to go down the right path, another shameless plug. Come see us, we'll get you on the right path. We can give you the resources and tools. And then of course, recall the initial steps required in research, EBP, and QI/PI. And when I say initial steps, I'm talking about knowing your resources and tools. The initial step in anything in your planning and preparation is knowing what you have available, what you need, and who to go to, and they can help you manage all of that. OK, so culture of inquiry really, really important. So someone asked me. Why do we care about this? Just throw it out there. Say, Lieutenant Colonel, why do we care about this? I am glad you asked. That is a wonderful question. So we care about this because. A culture of inquiry is a foundation of a high reliability organization right in the DHA's approach to high reliability is Ready, Reliable Care. And so we know we've heard a lot about airline industry, the nuclear industry and of course healthcare organization industry. We know that they work in high hazardous environments, high operational tempo, a lot going on, very dynamic environments. That's what we do every day. And within that in that environment that there's high hazards all the time and a lot that could go wrong we're managing that risk and we're improving processes, right. And so I want you to ask me. How am I a part of that? I love it. OK. How are you a part of that? So the important part is that you are an integral piece of this, right? That's what's exciting is. So I've had a lot of people throughout my career come and say, well, how does this make a difference? And I've thought that myself. But as part of that ready reliable care, you're looking to improve processes and that's drilled into us right from the get go and education. And when you start practicing is, is this really working for us as nurses, as healthcare professionals, is this working for us, for our patients? This isn't really working that well. Why are we doing this right? So you're not just taking the status quo, you're saying how can we improve this? And you have such an important part to play in that and through these projects, research studies, EBP projects, QI/PI projects you make such a difference because you're effecting change at every level, and so you are so important and that's why we want this culture of inquiry and it changes organizational culture and effects change so that you can make improvements that benefit everyone. So we're getting to the really fun stuff now, so examples of research, EBP, and QI. So these are just examples, and then we'll walk through each one and then we'll do some interactive stuff and then we'll talk about resources and tools that you have for each one. So an example of research is a randomized control trial studying new wound care approaches. An example of EBP is a nurse leader using evidence to implement a new staffing model to improve their units operational efficiency, and an example of QI is reviewing specimen labeling practices to reduce errors. So I should have said earlier, if you're looking at this and thinking, oh, maybe it's like too basic and you're like, OK, this I know this stuff. That is great. I'm glad, but this is a this will be a review on all of these things so that you can go out and guide and mentor other people. So I don't wanna insult anyone's intelligence, but I wanted to bring it right to the basics so that we could really delineate similarities and similarities and differences. Now if you're on the other end of the spectrum, you're thinking, I don't know any of this, that's OK too, because that's what we're here for is to help you through that, OK. So let's talk about research. We'll start with research. It generates new knowledge. The big thing about research is that you've gone to the evidence or you've gone and done a literature review and there's just not a lot of evidence out there about something that you're interested in or a question that you have. And so you want to generate that knowledge. You want to find out about that and add to the body of knowledge on that concept or that area that you're looking at. It's generalizable to other settings. So when you work in research with a sample population, a sample of that population, it should be generalizable to the broader. Population where you can say we think it know it to be true that what we get here with this sample could be generally applied to the

population. So people that conduct research, people with PhD's nurses with a PhD, are trained and educated to ask questions and design studies, and they use the scientific method. It is a very systematic approach. So they are looking at the outcomes they want to measure and that is driving what they're doing. Their research design, their methodology, they're looking at, they have a conceptual framework, a theoretical framework behind it. It's very systematic. And so I just have an example down there at the bottom for you. And I want to note that research does not have to be just RCTs. There are many different experimental and nonexperimental designs, so you don't have to do an RCT, you can do descriptive research, observational research and if that's something you're interested in, then we can get into the nuts and bolts of that in another talk. EBP is probably what most of you are used to seeing. Very valuable also, it's used in care for patients to improve, practice quality and systems and so EBP takes existing evidence and translates it into practice. So you've gone and done a literature review on something you have a PICO(T) question, which is probably what most people are familiar with, and you've asked this question and you wanna apply an intervention and you've gone to the literature in the literature. Has evidence in there for you to draw off of. It tells you if you think this would be. Meaningful to apply into your practice. Or maybe it tells you it's not right. One of the great things about doing the literature review too is it can also tell you that maybe you don't want to go down that path with your project because it's shown not to improve outcomes. So an example of this is a nursing informaticist using evidence that exists to inform the design of a decision support tool. QI/PI also very valuable. This improves the system, but it's specific to a population or practice area, so your local data informs your project, so that's not to say you don't use evidence, you're going to the literature and looking at evidence, but you're also using your local data to inform that process that you maybe want to change or improve. There's lots of methods that you can use. I just have a few listed up here. A lot of people use Six Sigma, LEAN or PDSA, but there are lots of different options. An example is employing a gap analysis to determine how to better prepare nurse preceptors. So maybe in your unit for your clinic in your area you're thinking man, we're just. We're really not getting great feedback from our preceptees or things aren't working out well. Or maybe you have an outcome that's not working well, that's. Your new nurses that have been precepted aren't just aren't performing adequately, so you do that gap analysis and say maybe we have a lack of knowledge. Maybe we just don't know about this one area. And so you're using that to inform from your clinic or unit your QI project so that you can improve whatever it is you're looking to improve. So if you're like me, I like visual. I'm a visual learner, and so everything I just said is up here, just in a different way. And so what you'll see is that all of these overlap, right. And so the goal for all of these, no matter which one that you choose, is high quality patient care based on best practice available. So the best evidence available. And so you are, asking questions and solving problems. And you'll see at the end when I show the references I lifted very heavily from the 2022 reference that I have here because I wanted you to be able to go back to that journal article and use that as a resource or a tool. So you'll have this and it's grounded in that journal article so you can refer to that. So keys, similarities and differences. QI and if you go all the way to the left QI and EBP are both used during practice, EBP is used to care for individual patients to address operational or systemic concerns or to improve safety and quality. QI is used to fix or build a new process specific to your area. So basically everything that we just talked about, your local data is gonna inform along with what you know from the literature is gonna inform the changes that you want to make in your area. If you go to the middle there research and EBP both are primarily grounded in evidence from the literature. Just the nuance there is that research generates new evidence, and that's not to say that researchers don't use the evidence we're we are very much combing through the literature to make sure that what we're asking is novel. It's innovative. It's not already been done. So we are very much using literature to. Catapult what we're going to go do for our research. EBP is going to the literature in just looking at the evidence and saying what's out there. What? What

do we know to be true? What do we know do we not be true? And if there's evidence there and you can apply it, then you're well on your way for EBP. Last year on the right, research in QI, both ask questions to solve problems. Research results, like I said, are generally applicable to other settings, so you can generalize it to a wider population, or you can pick it up in, replicate it in a different setting. And QI results are something that you want to do in your clinic, but you wouldn't necessarily say that you could do this in another clinic, in another hospital or on another floor. And so I really liked this picture too, because it just kind of gives you from beginning to end on kind of the evidence and how it's used and how it's generated and can be applied into practice. And so the researchers, the scientist on your right and they're asking questions and they're thinking of new concepts and theories and they're generating new knowledge and then you move over to evidence based practice where say you as the nurses that engineers carefully taking that knowledge and applying it to your everyday problems. And to find solutions. And so if you find process breakdowns, which is what we did a lot when I was a Clinical Nurse Specialist at Fort Belvoir was we just combed through. And if we saw process breakdowns, we realized it wasn't usually an individual problem. It was a process problem. Right? And so there was no, like, pointing fingers at anyone. It was like, we see this process needs to be fixed to better serve everyone. And so we used that data, our local data, along with what was in the evidence, and we became general contractors. So we fix and build those processes. OK. So we're gonna get a little interactive here. I only brought 10, so if we could match up a little bit, we will pass these out and I'll give you a couple minutes. And I'm sorry to the group online, so they'll have a couple minutes, but we will read out these examples and what I'm gonna ask you to do is categorize your project into research, EBP or QI, and then also give the reasons why you chose that category. And it doesn't have to be long or anything complex, just ideas as to why you chose that category. And then maybe think a little bit about if you changed one thing with that, how would it change to a different category, right, because we've seen the overlaps and that's why it can be confusing and that's why at different organizations you have determination officials that will help you get you down the right road, to which one you should be doing. And in Doctor McCarthy does that for us for the organization she's in CNSCI. So another shameless plug comes see CNSCI for your needs. So here is the we'll give it. What do you think? That's five minutes. 10, 5 or 10 minutes. OK, so we'll. Oh yeah, let's do that. Then, if you wouldn't mind passing those out. OK. We'll do that. Perfect. And just discuss amongst yourselves as a table, and then we can regroup and we'll and we'll discuss it. Everyone's got one, OK? Oh, perfect. [Organizers talking and coordinating.] OK, we'll regroup a little bit. I know everyone would love to keep talking about this for hours, but we'll get going in the interest of lunch. And I want to be respectful to your time. So we'll get started. Is there any table that would like to go first? We got a winner right there. OK, so if you could for everyone online. Also, there's a mic circulating. If you could read your example and then speak into the mic for that and the discussion. OK. So ours was evaluating the efficacy of a new wound care device. We picked QI because it's local. The device has already been picked. OK. And so you said the other reasons why it wouldn't fall under EBP, because you would be selecting probably and researching which would be the best device to use. And the research is the why of you need it in the first place, OK, those are all great thoughts. Was there any debate at your table over what it should be or did you all unanimously no thank you QI/PI I yeah. So what if I play devil's advocate and told you that it was a brand new device. That had not been tested anywhere. What category and that would be research. Yeah, perfect. OK, great job. Wonderful. Thank you. Anyone wanna go next? OK, the topic we got is waiting to bathe newborns until three days after delivery. Everyone at our table is not a labor and delivery nurse. We were like what, we're, ER, 2S, dialysis nurses. So we had to do a little digging on our own, on our cell phones. But we categorize this waiting to bathe newborns 3 days after delivery. We categorize it as evidence based practice because we're assuming that research has already been done as to what if they bathe the baby like the day of delivery or two days

after. So we're just thinking, and we saw online that vernix on the baby. Delaying bathing. Because the vernix on the baby it. What is it called? It protects the babies immune system, preventing them from getting pneumonia, preventing them from getting meningitis. So we're seeing evidence based practice. Wonderful. You guys said no. You'd be learning a new skill set, right? And like, literature reviews. So wonderful. Yeah. So the evidence was out there and you went and saw that and you thought, oh, this is something that you could apply into practice, right. So there's evidence out there. It's not research. It's not anything. That's new per se, and then it's something that could be applied generally, right, not just to your local area. So right, great job. Thank you. You're welcome. Any takers on who wants to go next? Captain Garcia. Alright, so I'm speaking for the virtual audience and I kind of just jumped on this one as well. So they had reducing medication errors on your units and there's some discussion going on because as a CNS, I also said well, on the surface it's probably QI, I said, but what if we're doing something different? I would go into the evidence and that's exactly what they said. Some people said, well, if you change it to scanning medications, maybe it could be EBP and then others said QI because it is a process. OK, what are your thoughts ma'am. This is exactly what I wanted to happen, right? So I wanted you to look at that and say, well, could be QI/PI. But if we changed one little thing or got more context, then it could be EBP or maybe even fall into the realm of research. And so another shameless plug for CNSCI. So we have CNSs, DNP, prepared nurses and PhD prepared nurses. And that's like what we needed out on. And we are here to help you with that and get excited about it. And we will help you get down the right path. So if you come to us with what you're wanting to do. Then we're going to talk to you about what your options are, what you found in the literature. Did you find anything? And then we'll pick what best works for you to most meaningfully apply in your setting. So perfect. That's exactly what I wanted to happen, was to have that discussion. Anyone want to go next? We're here. Do I hold both of them? There was talking and yeah, OK, our group had decreasing, patient wait times to see the provider and we decided that it was QI because it is department dependent. Perfect. Yep. Some of them will be really like you'll get right off right off the bat. They're pretty cut and dry. And that's something that's very dependent on, like your clinic or where you're at your unit. And so perfect. We've got what, how much time do you think we got plenty of time. OK, we've got plenty of time. Uh. over here. Alright, ours was using evidence to reduce risk of ventilator associated pneumonia. This is due to the way it's phrased and the generality we assumed it was EBP, but we also talked that it sort of could go. Umm. Either direction to either QI or even if it's something new, you could look at it as more of a research. Ohh, sort of. If there was something new there was developed that stated that it would help to reduce ventilator associated pneumonia, but not much literature was out on it. You can also look at implementing it and seeing whether or not it actually has that impact. Perfect. Yeah, so that could go a lot of ways and I made these deliberately vague so we could have this discussion because say you want to try a new intervention, that there's not a lot out there on. So that would be research, right or you wanna take a bundle that's been well researched and. There's a lot of data out there on it and you want to put that into your unit, and that's something that would be EBP. If you're looking at something. If you're using your. Local data to inform that say you did a gap analysis and you're and you see you have an issue with the lack of knowledge or experience or something of that nature. Then you could tailor it to QI/PI also. But again that goes to saying that there's determination officials at organizations that are kind of housed within the Institutional Review Board and that's what they help with also is that regulatory and administrative and getting you kind of on the right path and determining what you're doing. So did you guys all agree or was there a lot of discussion? I see you've got Doctor Currie. That is really excited. We had a researcher. Yes, right. Yes, primarily. Love you the most. And then we had another administrator. Yes, Miss Nathan. She had an interesting way of how she phrased it. Looks like. Ohh. Interesting. Yeah. So we can see how that can be looked at from a PI perspective, but we agree it was EBP and then of course we talked about

like, OK, so if this was more of the research then, you know, perhaps some sort [unable to hear] in that we're filling in that gap and it was doing the research. Which the good captain was explained. Yeah. Perfect. OK, why don't we go? Have we done this table? Let's go here next. Yeah, we had an optimizing the use of sepsis bundle and we chose QI because we are optimizing something that's already been established. If we were trying to. Umm, determine what elements to include in the sepsis bundle? Maybe a literature review that would fall under research and evidence based practice would be something like the use of a sepsis bundle maybe being beneficial. Yep, so that could also go a lot of ways too, right? So bundles are made-up of a lot of different interventions. So it's something if you want to focus on one and formed by your local practice, then you could do QI/PI. Was that something you guys generally agreed upon or was there a lot of? Discussion about it generally agreed. OK. Who has not gone yet? I know there's a few over here. Let's start over here with General Simonson's table. This should have. I didn't say. Yes, ma'am. I should have given you guys like a like a hard one. I got a question. There's too much. Yeah, OK, OK, our question was examining the effect of a relaxation technique on patients' anxiety and pain levels it this kind of is one of those ambiguous ones you would need to look at the literature first and if they're. Help if this is a new uh relaxation technique. Then it would be research if you were just examining one that's already been researched that it would be an evidence based practice. Nailed it. I expected nothing less from this table, right? And even a new population, right? It could be a new technique or it's something that's never been studied in a certain population. Then it would fall into research as well. OK, let's you guys went. Let's go back there, please. Uh, whoever wants to go first? As you guys clamoring to answer these OK, so can you all hear me? Yes, ma'am. I'm ours was using a new medication for postop nausea in same day surgery and we kind of go back and forth between research and QI. It could be research if it's a you're if there and then process of manufacturing and they're researching the medication to see how what kind of an effect it has on it. But if it's already been approved and all through all of that, then it might be QI because you're trying to improve the outcome for their postop nausea. So that's kind of where we're depending on how you look at it. We were thinking it could go either way. Yep. So same as we've seen kind of the trend here, if it's something new or novel or you don't have evidence on, then we can kind of trend on that research path. If there's evidence out there. EBP and then if it's something you're really wanting to do locally that might not generalize to other areas, then you'll go down that QI/PI path. Good job in next table. OK. You know, that's it, OK. Implementing a VA VAP ventilator acquired pneumonia bundle to prevent inappropriate awakening trials. Well trials kind of gave it away. So you would think maybe research, but then if it's already been approved, possibly QI. But I think we kinda had had a split decision. At our table. So this was one that I deliberately made that way for the discussion. And so when you say the word trial, it wouldn't be like a randomized control trial. It would just be the trial that you're doing with the patient for their awakening. So that's part of the bundle. And I have to apologize because I know not everyone does this in their clinical practice. So absolutely no worries on that. And so that awakening trial is part of the bundle that you'll do with that. And so if I. And so if I told you that and it wasn't a trial, what would you? Where would you go with that? And it not just you, the whole table. It's EBP then. EBP. Right. So you're really looking to use that evidence that's out there with the bundle to optimize what you're doing. Right. Good job. What tables have not gone yet? OK, I guess I need candy, right? I can't keep track of these tables. Ours is implementing a program to prevent inappropriate short term urinary catheter use. So first we thought it's PI. Are we gonna implement it and maybe we'll have a high infection rate in our. But then when we thought about it, we thinking it's more evidence based practice because the research is out there already that you know catheter use really you wanna avoid it to prevent infection. But there was a lot of back and forth. It's not like we're also. Can you guys fought it out? Yeah, yeah, implementing it right? Umm. Well, she had mentioned last research. And I'm like, well, if you're if it's a new. It's not a new thing, but if you're like, just

saying trying to, like, rule out something or other causes. Yep, so that that's exactly right. Right. So if you have something new that's not been studied yet and you wanna put that, like, add that into what you're looking at, then that would be research. But it's also EBP because if you go to the literature and see there's been a lot done on one of the ways that we can avoid CAUTI in, have those catheter acquired UTIs is to. Limit inappropriate use when possible of short term catheterization. Then you will see that in the evidence and so it's EBP and you're applying that. Yeah, so good, good. I'm glad that there's a lot of discussion and back and forth. We're from outpatient clinic. Probably you see inpatient so. Is there anyone else that has not gone? I think that's everyone. Right. OK. Captain Garcia, thank you for hitting the online audience. OK. So thank you all for that discussion. I hope it did what the intent was to get you thinking about how all of these categories overlap at the differences and just little tiny details can make the difference between kind of what path you're going down for which project. So last shameless plug. Here's your resources and tools and this is tied to learning Objective 3. Knowing kind of those initial steps and so for research, EBP QI and I apologize, I can speak most specifically to Madigan, but I know that it's pretty comparable in other places, and so you do have resources, and even if you're at a different location, reach out to us, it could. Everyone in here that's part of research or a CNSCI, please raise your hands. Right. So you have resources all over, there is a wealth of expertise and knowledge in this room alone and we can link you up to a person to talk with or someone that's a subject matter expert in that area, even if it's not in our wheelhouse. So please use us if you're looking to do a research study. Obviously that has the most regulatory requirements and guidance. And so come see us in CNSCI for that. We are on the 8th floor of Madigan. And funny enough, DCI Department of Clinical Investigation is on in the basement, so we span the top and the bottom of the hospital here. But DCI is also a great resource and we collaborate with them and work with them on studies all the time and they have statistical support. They have data scientists, research health scientists, they have a lot of resources that can also help. They put on a protocol development workshop where they will just sit and talk with you about your ideas and. What you could do with those ideas. What's available to you? Other things that you still need to work on if you're looking to put in something for, like a research for funding for a research protocol. And we can also help you find funding mechanisms as well. It there's lots of great ones out there. EBP also I've got CNSCI listed on here for all of them. I'm a little bit biased with that, but so we're also here. We have DNP prepared nurses. We have seen that our CNS is we have a lot of resources and tools that can help you with EBP and QI. So for Madigan and I, I think that I'm correct on this, but I would have to check myself. QSD (Quality Service Division) is what you route your QI paperwork through and I think that's still true as of right now, even though there's been a little change. So. Little bit different pathway but we would help you go down that path if we determine to be QI/PI because no matter what you're doing here, it no matter what category you're in, it has to be determined as that category, right? So it has to go through a process to be determined, not research in as EBP or QI/PI. I really want to put a token in for the medical librarian. They are just so under acknowledged and we have one here at Madigan. That's amazing. She is a nurse and so she has a nursing background and she will help you do wonderful literature reviews. And it's just such a gem. And I, I'd like to think they have every place. I don't think they do. But if you have one, I would reach out to them because they are just amazing. And of course, nurse leadership. And multidisciplinary collaboration. If you are thinking of doing a project, we want you to come talk to us and we will consult with you. But it is very important to get your leadership on board because they are going to also help you with resources and tools and networking and collaborating and so they can also help you very much with what whatever you're thinking about doing, if it's feasible. If it meets the intent of the organization and is a problem that needs to be addressed. And of course, we can't do anything without multidisciplinary collaboration. I know sometimes it feels that way, but nurses do not work in a vacuum, so you need to bring everyone to the table. You don't wanna get halfway

through a project and be like, wow, we forgot respiratory therapists. Not, speaking from personal experience or anything, but you do not want to get halfway through that and be like we did not bring a key stakeholder to the table, because then you're just going to be backing up and starting over again. So think of everyone that you work with, any stakeholders that would be involved in that project and bring them to the table. That's wonderful. We want that multidisciplinary collaboration. We want them to be involved in whatever it is that you're doing. Your key take away? So hopefully I did not make it more confusing today. Hopefully it got a little less confusing for you. I had a lot of fun talking with all of you today and I'm glad you guys really made it interactive. I really want you to walk out of here knowing what you can do with these projects and these activities. The difference you can make in how fun it can be and I know it gets lost a lot in the day-to-day needs that you have, but you really can make a difference with these. And so I'd like you to understand the power you have to use these activities to impact change. And then the resources available to you, because we don't expect you to be experts, we don't expect you to do this on your own. That's what we're here for. Come see us. We'll help you. We really want you to find the best way to meaningfully apply this to your practice to benefit everyone. The references as I mentioned this 2022 article was what I lifted heavily from. So everything we talked about today you can go and find that article and it will step through this presentation. So I just wanted to reference that and give them credit. I didn't want to infringe on any copyright issues so I did not make a bunch of copies to bring, but I do know if you go access this link for the DOI, it's you don't have to pay for it, you can just print out that or download that article. Thank you all for being here. Thank you to our distinguished guest, General Simonson. A pleasure. So thank you very much for your attention. Ohh yes, any questions important part? Any questions? Yes, ma'am. That's a great question. Umm. I think it really comes down to what you want is a unit or a clinic and what you think your priorities are when you talk to leadership or like the Unit Practice Council and see what it is that you want to devote your time to. And because there's a lot, right, we could identify a ton of things that we really wanna work on. But I would say if it's something that can easily be changed or fixed, you might just want to go ahead and do that right. Those quick wins and get practices improved or processes improved. And then if it's something that needs maybe a little bit more support or a little bit more buy in or you need to get some resources for it or you're thinking, I really want to fix this or improve this, but I don't know how that would be one that I would say make it a project and bring everyone to the table to help you do that. So that's a great question and I welcome feedback from the audience from all the expertise here. If you want to chime in, please do Doctor Currie. Thank you. Yes. Yes. Well, I don't want to put Doctor Yaeger on the spot, but Sir, would you mind speaking to TSNRP a little bit or is that part of your presentation? Ohh little bit. OK. OK. Yes, I'll see. CNSCI collaborates a lot with TSNRP. TSNRP is a funding mechanism for research evidence based practice and we are very lucky because we have the honor of having Colonel Yaeger here, who's the executive director of TSNRP. So thank you, Sir, for speaking a little bit on that. We should give you that might be there. I guess I can talk about that. You just want general listing. So we're looking forward to Tanisha just a little bit about the relationships between them or. So yes, there is a process in terms of funding or just in process, but just in terms of getting a project about the ground. Both. OK. Alright, so I'll try to keep this brief. I'm glad you're here, Sir. Thank you. Very alright. Uh to tri service nursing research program. Hopefully everyone of them room has worried about us. Sure. And this is the microphone as well. That's for online audience. OK goodness. That's a lot of technology. So uh TSNRP Tri Service Nursing Research Programs been around for 30 years. Our mission is to fund nursing research and evidence based practice and also conduct training missions in terms of academic scholarship for nurses who are on active duty, reserve National Guard and also retirees. So we fund uh, evidence based practice nursing research. We have grants that run up to \$450,000. We have generally one call a year, perhaps two depending on funding and depending upon the quality of proposals that

come through, the priorities are set by the corps chiefs, which includes actually, General Simonson sits on the Executive Board of Directors as well in order to inform the actual priorities for TSNRP and what we're trying to chase after for that particular year. A vast majority of the facilities under the Defense Health Agency that has nursing research and also evidence based practice majority of that is actually funded by TSNRP. Uh, we also have. Other opportunities within TSNRP, which include a researcher interest groups, they function as a think tank. If you can imagine a bunch of DNP's, PhDs and also other volunteers get together and work on specific issues, they run the gamut from Anesthesia Research Institute group to Women's Health. I would be remiss to not mention the Health Systems Informatics Group, which Colonel Swigger has led significantly in the past as well. We also have a Resource Center. That Resource Center is basically the military one or the military, one source of nursing research and evidence based practice, something I'm really proud of. All you need to do is go to the website for TSNRP and let's just say you've got an idea similar to what Doctor Wood has been sharing and you don't know where to go with it. You want mentorship with it. Perhaps you're interested in some funding for it as well. Well, the Resource Center actually provides those opportunities to provide funding for books, software, statistician help. Perhaps you need to reach out to a librarian that you may be in a facility. I know here at Madigan, you're super blessed with all the assets that you have here, but that's not entirely true of all MTFs within the Defense Health Agency. So we serve as a bridge for those individuals that are a little bit more isolated than your organization is here. In terms of process, so the funding process for our grants generally begins with a high priority award call from that call, we ask individuals to send in a letter of intent to give us an idea who's out there and who's interested, making sure that we have enough funding in order to compensate or be available to fund all of the proposals themselves. From there, there is a very rigorous review process that goes on after a proposal is submitted to us. We follow the NIH guidelines so it is extensive. The review that we do our. Maybe this doesn't come as a shock to you, but nurses get very defensive when they are particularly subject matter experts in a particular areas, say research or evidence based practice. When these proposals come through, they are scrutinized. They are definitely scrutinized, which is extremely important because it keeps the integrity of nursing science right and what we're funding through the nurse corps where the Army, Navy and Air Force. After that, then you go on and if you receive funding. Uh, a funding decision from the corps chiefs to say yes. We like your proposal. Then they'll move forward with funding and then we'll go through a nonprofit federal partner that will assist with the transition of the funding in order to get your research done. Generally, most of the research is conducted over a two year period of time, perhaps three. Sometimes four in certain cases, but there's enough time to get through the IRB and there's a lot of latitude that's given in for those researchers to complete the research. The corps chiefs ultimately what they want is successful research that inform strategic policy. And I know sometimes that gets a bit nebulous for some of us, particularly when I remember being on the ward and working. But the reality here is, is that every little nugget of truth that we get out of our research and evidence based practice. Feed into the strategic policies that are done. So your role is exceedingly important to our community. Did I answer your questions? OK, alright. I don't wanna keep on going. I know we have lunch coming up and I don't wanna get between lunch and you. So yeah. Right.

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Uh, so as Colonel Wood said, she's local to Madigan, and we appreciate our hometown staff being able to present. She's also supposed to be on leave. So she was lucky enough and we were gracious enough to have her presence today. So, ma'am, thank you for coming. We have a gift for you that we would like to present. Thank you for being here. Appreciate your time. So we will be releasing you for lunch at this time as I call off your table number, you may proceed

to the buffet line in the back of the room. I asked that you please be back in your seats or try to by 1320. Again, please feel free to continue eating during the next presentations. A reminder, your plates will be picked up by the Conference Center staff and we'll begin by releasing General Simonson's table and then the first. The rest of the first row as well.

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Did I break it already. I have been known to break things. OK. OK. Yeah. I want to try to keep us on schedule here. And feel free to eat while I'm talking and enjoy yourselves. I'm gonna walk around a little bit. That's the way I prefer to speak to people when I give these presentations and. As I give this presentation, you'll notice it's operationally focused, right? So I've had the experience of going out to deployments a few times in my career. I've learned a lot. Changed a lot. I think many of us have. I'm looking out into this crowd. First of all, I'm very proud of this crowd. I love the diversity here. Nursing is an amazing profession, particularly in the military. I love it because each of us are able to contribute in a unique way and I'm so excited to be say again. Ohh goodness, there's an introduction. I'm gonna prep it for you there. Sorry. I'm so used to just sort of driving on. I'm gonna let you go ahead. I'm gonna prep it for you. OK? Prep.

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Is now my privilege to introduce our next speaker, Colonel Young Yauger is the current executive director of Tri Service Nursing Research Program, the only Department of Defense program dedicated to military nursing research and evidence based practice. In 2000, Colonel Yauger earned his BSN and commissioned into the Army Nurse Corps over a 22-year career as an army nurse. Colonel Yauger served as a pediatric nurse, critical care nurse and attended the Uniform Service University for Health Sciences for Advanced schooling, where he obtain a degree as a Certified Registered Nurse Anesthetist. Colonel Yauger went on to become an assistant professor in nurse anesthesia at the US Army Graduate program of Anesthesia Nursing. During his career can only get your deployed three times in support of the war on terrorism, most recently in 2018 conducting Golden Hour offset Surgical Team ghost operations for these Special Operations Task Force in Afghanistan. Colonel Yauger earned a PhD in neuroscience from the Department of Defense's Uniformed Services. University of the Health Sciences Colonel Yauger is the first US Army CRNA. To become a Defense Advanced Research Projects Agency, DARPA service chief fellow, his research interests include combat Expeditionary nursing, resuscitation, anesthesia, traumatic brain injury, innovative technology and neuroinflammation. Please help me welcome Colonel Young Yauger.

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Thank you so much. I appreciate it and sorry for jumping the gun. My gosh, it's it sounds a little bit embarrassing to hear your bio read before you go into it and actually it sounds like it's someone else's bio really. It seems just like yesterday I joined the military and here I am in front of you wonderful individuals. Sharing some of these experiences that I've learned along the way. So it's. I was really excited to be invited to speak to you, particularly since it's I was just newly minted as the Executive Director of TSNRP, and during that period of time I was really starting to search out some more of the priorities that I'm interested in seeking out and I could share with the Corps Chiefs in order to make priorities and chase after them for the for this particular organization. Umm, operational nursing is something that's very important to me because I've had those experiences in my career. It's also going to be the experiences that. Many of us in this room who are early in our career, who may experience if we go to war again.

There's dark storms on the horizon, right? With a lot of the challenges that are ongoing, though, we're hopeful that those things will not happen, but we have to be prepared for them, OK. And so this presentation really speaks to that. So those of you who are not in uniform today, many of you likely have served. So some of this would be very interesting for you and it also provides insight into what the military nurses that are on active duty reserves or National Guard are currently going through right now and hopefully give you a little bit of an appreciation of some of the things that we're chasing after right now. So. Next, let me see. You're going to do the slides or you want me to do it, OK? These are my disclaimers. I've got nothing to disclose. Next slide. Learning objectives. Basically what we're gonna do is. Summarize some of the historical factors in history and seeing how they could be applied to the future and hopefully by the end of this presentation, I'm a compelling enough to make you think that maybe I should pick up a history book. Maybe I should learn about these giants of nursing that have come before us. Sir Isaac Newton had once said that we stand on the shoulders of giants. That is absolutely true of our community. So perhaps through this presentation. Maybe think about that and reflect on that like what this actually means for you, particularly in your specific area that you're addressing right now. Maybe you're a pediatric nurse, ER, nurse, ICU nurse. Think about what these? Actual concepts look like for you. And how things are shaping forward. But again, in the end I just want you to walk away we start to pull in some of these priorities that the military is looking into right now, next slide. So when I became the executive director I was looking for opportunities to start reading, and I've read the history of the Army Nurse Corps, which was a really great book. It was written by Doctor Sarnecky back in the 1990s. And. That's phenomenal. And I wanted to get something a bit more interesting, perhaps in terms of different experiences that happen in World War Two. I want to know what the nurses in World War Two actually did instead of sort of like a reporting off of what they accomplished. So this particular book written by Doctor Rosemary Greenlee. Who? In fact, is going to be at the TSNRP dissemination course really excited to share that I reached out to her and we secured her presence at the course. She's gonna give a presentation on the preparation of this book, the things that she learned from army nurses as she was writing this book from World War Two. May not come as a surprise to you that the experiences of women during World War Two were not reported for a very long time. These heroic efforts that they did. Really wasn't compiled into a book in this very cogent manner until 2001. Part of that was part of the celebration of the World War Two memorial that was coming out as well, and they, the group of nurses that were still alive at that point who served in World War Two wanted to celebrate that, and this book is a creation of their efforts to try to describe some of these. Difficulties, tragedies. Horrors of war that they experienced. But more importantly for us. They provided insight into that austere environment and large scale combat operations in this book, and it speaks to you and stands out tall when you read this book. Oh, it gives me goose. Goosebumps just thinking about it because it was such a good book to read. And this is the book that sort of shapes this entire presentation. Next slide. So how do I convince you that history can inform future? Well, Winston Churchill. Once said. "The farther backward you can look, the farther forward you will likely see." Now the image below it. As other medical item that I'm sure you all recognized as a tourniquet, the question is what period of time or history did this tourniquet come from? And I know you're looking at it going whoa, that looks really old. It looks like antiquity. And it is. It's a Roman thigh tourniquet. From before? 0 AD. How does this apply to this presentation that I'm telling you about right now? Well, back in 2000, the early 2000s when we started the War on Terror and we were in Iraq. There was a new device that came out that was saving lives left and right. And surgeons were talking about, oh, this is the best thing since sliced bread. And we're so glad that we created this. Well, they didn't create it. They created a newer version of it and it was the tourniquet and the tourniquet was then carried by medics personnel, everyone for the rest of the war. Since we were there. In fact, the last time I deployed, I carried three of them and the way it was

explained to me was. They were not for you. They were for the other individuals. And I was just like, wow, how serious of a deployment am I going on at this point in time, fortunately. I didn't have to use any on myself, but I did use them on other patients, right, so pretty significant. So hopefully you appreciate that as we start to walk through this presentation. Next slide. So the book, *If I May Perish*, walks through the army nurse experience from Operation Torch, who's been to ILE. Who remembers operation torch from ILE and CGSC right? Well, if you are going to ILE soon, this is a little snippet, a little snippet of what you're gonna experience understanding about the storming of the beaches in North Africa. Did you know? And I didn't know this until I read this book that the Auxiliary surgical group. Had several nurses within it and they stormed the beaches with the infantry soldiers on North Africa. And they didn't have proper fatigues, either. They had nurse uniforms going upon the shore, dodging enemy fire right there with the medics, the physicians and everybody else. It was unfortunately the last time we did an amphibious assault because it was recognized that. The challenges of seeing a nurse killed in action on a beaches was just something that the public probably wouldn't enjoy. And would not support, but how cool is that nurses, military nurses, specifically army nurses, participated in amphibious assault in World War Two? So as we start to grow through the book, it goes through North Africa. To Italy. France, and then eventually Germany and the army nurses experience all the way through. I picked the little snippet out of it and I picked Anzio half acre. In Italy during that period of time. There was a terrible battle that was ensuing in the southern part of the boot, and General Clark, along with General Patton, was trying to break the stalemate that was going on in South in the South of Italy. What did they want to do with that? Along with Winston Churchill's help, planning an amphibious assault, they assaulted the beaches of Anzio in order to do an amphibious assault, to cut off the German army. Well, it didn't turn out the way we hoped it did, though. We had complete surprise during that period of time. We unfortunately had some poor decisions that happen and it delayed the US military's ability to advance against the German army. So the surprise was lost. We were trapped on an 8 mile wide, five mile deep little pocket right there off the beach. On that pocket, is where hospitals, army hospitals were set up, army nurses, doctors, medics. We're all set up on this beach. During that period of time in four months, this is the statistics that they. That they took. 11,000 wounded in action, 4,000 killed in action. 37,000 combat injuries that were generally related to cold. And generally related to disease malaria specifically, in addition to that. Simple arithmetic 325 casualties per day. I've deployed several times. I have never seen that many casualties. The next war, we're potentially going to go to. We will see these casualties. What does that mean for an army nurse? As we start to move forward? And what did the lessons from Anzio teach us that we could bring to the next fight? Let's let history help teach us what the future looks like. Next slide. Here's an image. It's amazing. So you look on eBay. You could truly find anything on eBay. So I am canvassing the Internet looking for photos of what I'm trying to do is to talk to you today about what I found was in actual military recognizance photo for a World War Two. For sale for \$20. Unbelievable. It depicts the army hospitals in the center of the Anzio area, Anzio's half Acre and the way that they're established there you'll notice off to the right hand side. There's a lot of like bare areas and there's giant circular patches. Those are impact sites. During World War Two, the United States and the Allies were honoring the Geneva Convention. The German forces did not. They attacked hospital ships, sank hospital ships. In addition to that, The United States Army, once they arrived on Anzio, Anzio's beachhead relayed the coordinates according to Geneva Conventions of the location of the hospitals. The Germans then took that those that information and instead of not shooting at that area. They fired all the indirect fire that they had at that area because they knew it was demoralizing to the troops that were trapped on that beach. That they didn't have medical assets there. That's the power of the Army nurse or the military nurse. We are a morale booster when the soldiers know if I get hurt. There's an Angel behind me to take care of me. So the Germans took advantage of that and fired round after round on the beaches. Army

nurses died at this beach. Army doctors died on this beach, physical therapists. Pharmacists, medics. A lot of people unfortunately perished on this beach. Next slide. There was a lot of heroism that was presented by the Army Nurse Corps. Really proud to say this. These are the four individuals Lieutenant Roberts, Roe, Rourke. And Ainsworth, all four of these Army Nurse Corps officers earned the Silver Star. For their gallantry. And their behavior in combat, what they did was shield. They shielded their patients. With their own bodies. While they were being attacked. Pretty amazing, right? It's just unbelievable the amount of heroism that was displayed by these individuals. Unfortunately, Lieutenant Ainsworth lost her life. She was struck by a shrapnel round that penetrated her thorax. And she succumbed to her injuries and hemorrhaged. 24 hours later. So. There have been attempts to give her the Medal of Honor. But unfortunately that has not come to fruition at this point in time. But it's pretty amazing when you look up here at the Giants. Who we stand upon, these are the officers. And the enlisted, it's just the officers that's here. But the enlisted were there too. That's helping us drive that large scale combat operation. Next slide. So what is this large scale combat operations that people talk about? And MDO, I gotta admit, I was a bit confused as well. Next slide. So simply put, MDO is a construct a concept. Of taking all the elements. Of the battlefield and making them work in synchrony. To increase lethality. In other words, how do we make this system work better so we could win the battle faster? That's all we're doing. That's what MDO means. There's cyber, space. Land, sea, and air and all they can work in synchrony. But who's the adversary that we're fighting? 20 years of counterinsurgency has taught us that. Air support air superiority means a lot. In terms of our ability, to manage medical operations. But is that going to happen in the next war? Well, you've heard this comment. This phrase. Hopefully you have of a near peer adversary and I would argue in certain aspects that it's a peer adversary at this point. That has similar technology. In fact, the vast majority of the technology in this room today was probably made in China. Similar weapons systems Chinese have significant weapon systems that are similar to what we have to include hypersonic weaponry. Sophisticated, sophisticated electronic warfare. Larger military. I put it in relative because yes, they are relative. They are larger, but doesn't make them more lethal. And then comparable air superiority and defense assets. Who's here? Seen Top Gun recently? Gosh, that got me excited to join the Navy. Sorry. General Simonson. I really did. The reality here is, is that air defense system that was set up, that's not too far from what to expect if we were fighting a peer adversary near peer adversary so. Air superiority is going to be questionable, and then of course, space technology. The Chinese, the Russians and the Americans are all in space, along with a few other countries, but those are the three main ones. Next slide. So what are major medical concerns for the combatant commanders when you go talk to an infantry officer, when you talk to an artillery officer, whoever else in the operational environment? What are they talking about? Well, I talked to my friend who's an infantry officer over at the Pentagon, and he listed off these top three things he's concerned about return to duty. It's an interesting concept, right return to duty. We have soldiers that get injured. How do we get them back to the unit after they're injured? I'm not necessarily talking about a gunshot wound, but what if you develop a slipped herniated disc? And you develop sciatica. You're on the battlefield in the middle of the mission. How do we temporize that injury? So you could get back onto the battlefield to fight the mission or fight. And execute the mission and then get medical care potentially more definitively later. These are good questions. Those are questions that are yet unvetted. In addition to that, opportunities to clear the battlefield, we have to clear the battlefield of casualties #1 for the safety of the casualty #2 to allow the maneuver units to execute the mission again, it's all about lethality for the combatant commanders. They wanna win the war. Finally, the last thing that he was concerned with was developing strategies to overcome logistics. Ooh, that sounds really complicated, but ultimately what it is how do we ensure that we get the supplies, the right supplies to the right unit at the right time when you're needed in general, most of our units are going to be decreasing in their size in order to

increase maneuverability and mobility on the battlefield, which increases survivability. You want to live on the battlefield. So that's exactly the way that we have done it in World War Two. And that's the way we're reverting right now. We're not gonna have stagnant hospitals. We're gonna have hospitals that move in order to keep up with the fight. So. How do we deal with the logistics of that, particularly if we're reducing the potentially of the amount of supplies that are going on? I know you're probably thinking how does this have to deal with nursing research, but we'll tie it together here in a moment. Next, some other additional concerns from military medical planners. They need account for the combat medicine capacity. I talked about 325 average soldiers coming into the hospitals on Anzio beach. Right now most FRSTs can handle I remember correctly to doctrine. Was it 25 in a 24 hour period? It's not that much. So how do we flex in order to increase the capacity? When we talk about mass-cas situations, it's all about relative to the amount of supplies that are necessary. The personnel that is present. And how well you're overwhelmed. Well. The idea of a mass-cas of three patients coming at the same time is the thing of history. We need to be able to adapt so we can execute to get our mission done on the battlefield. Next, we're looking at enhanced technological capabilities. How are we bringing technology into this? To allow us to do our jobs better with fewer people potentially. How do we increase the synergistic with the nurses that are present on the battlefield? Through technology and a lot of it revolves around the next slide. Which is looking at electronic medical records right now in the last 20 years of counterinsurgency, major concerns about paper charts not getting back to roll threes. I personally wrote numerous anesthesia records in a role two setting. I taped it to the patient's chest with a plastic bag around it to make sure it would get to the role three so they knew what I gave the patient and somehow it disappears and that happens more frequently than we think. So right now there's gonna be an effort to utilize newer technologies to increase security of communication, to get electronic medical health records in the role two perhaps the role one, definitely the role 3. So that's the real big hope right now. Also advanced medical sensors in my bio talked about DARPA. Does anyone know what DARPA is? Yeah. So thank you, General Simonson and Colonel Swiger. So DARPA is the people that made the Internet. I mean, so they are the Defense Advanced Research Project Agency. They were created after the Russians sent Sputnik into space. And President, I think it was Eisenhower President Eisenhower during that period of time said that can't happen again. We can't be surprised by our adversaries with their technological increases. So they created the ARPA, which then became DARPA later on, which is the Defense Advanced Research Projects Agency, Messenger RNA technology for vaccines. Pretty crazy that we created a vaccine so rapidly for COVID-19, right? That was because of DARPA technology looking at messenger RNA, creating vaccines specifically for the military to defeat issues on the battlefield. So. DARPA is looking at medical sensors that can remotely detect and triage patients on the battlefield. Imagine a drone going by seeing casualties on the battlefield and go expectant, expectant, expectant, priority, urgent surgical. That's the soldier that we need to send the medics out to go get so that technology is coming. Advanced or artificial intelligence, medical Assistance, medical recommendation devices. This is basically something that helps with triage. Artificial intelligence is all the hot button thing that everyone's talking about. No fooling. It is a computer that can learn. And is capable of rendering an opinion when we ask it. Pretty incredible technology that's coming out in terms of that. AI drone evacuation from the battlefield. That already exists. Perhaps not practical yet, but it exists so drones can pick up patients off of battlefield. Well, packages off the battlefield at this point in time, but we'll see where it goes from that. Universal equipment. It's not uncommon for us to see multiple versions of multiple versions of a ventilator on the battlefield during counterinsurgency. We had the impact vent, the save one vent, the save 2 vent. We also had the Hamilton, we have the Zoll each of those all had their own proprietary tubing with it. Every time I went out and into a mission, I had to find the right tube being for my ventilator. It was just insanely difficult to deal with. Ultimately, I'd just take the eagle vent, which is I think it was

created in the 70s, right? Before I was born and that was reliable and it had tubing that was universal and that was the one that I would take on my missions. In addition to that, what are the strategies that we're doing in terms of evolving? We're looking at return to duty triage, in theater hospitalizations and convalescence. During World War Two, when you were injured, you did not go home. Most times. Most times you went to England and you stayed at a hospital until you healed from your gunshot wound and you went back to your unit. And most of those soldiers wanted to go back because that's the people that they knew. They had a mission to go forward, So what we experienced in counterinsurgency sending patients back to Landstuhl and rapidly moving them back to the United States in a roll 4. May or may not happen, so it's something they're thinking about in theater convalescence. What does that look like? Who's gonna be there to take care of these people? Nurses exactly at the height of the World War Two, there were 50,000 nurses in the Army Nurse Corps alone. 50,000 that includes the reserves and active duty at that point. Next slide. OK, so let's talk about the research piece. How are we tying this all together? So I synthesized all of this information that I received and I sort of identified a lot of the ideas came from the book. What I'm hearing from senior leadership and came up with these. Specific items here. We're not going to talk about all of them. But the ones that I do wanna address here is austere, remote environments. Prolonged care, it's not prolonged field care. It's prolonged care. That's an important distinction. That Medical CDID is trying to push out right now from the army. Then distributed maritime operations. That's the Navy colleague that's in the room, right? So I'm Tri Service, so I try to speak to all of the services here. Aeromedical evacuation. That's the Air Force side that we'll talk about briefly on what are the concerns of the Corps chief? And then we'll talk about critical or enroute care, a little bit combat palliative care. Ooh, that's an interesting concept, right. What do we do when we list someone as expectant on the battlefield as a nurse? That's an interesting concept. BioBehavioral health nursing pain management for those. Public health nurses that are out there, venereal disease. I'm not gonna talk about it in detail. Major issue from World War Two. It was a major function of nurse corps to actually provide the treatments for venereal diseases. Practice competencies. That's what all the Corps Chiefs talk to me all the time. Let's talk about practice competencies. So how do we prepare for how? Do we prepare for the next war through readiness? Next slide. So let's talk about austere, remote environments. So basically, imagine and this is well described in the book. You have nothing. In 2018, I deployed with the Ghost team. We went out to this. Dilapidated, abandoned American base that was taken over by the Afghan National Army and. It was owned by the Marines beforehand. I don't know if you know the Marines, but. Yeah, I think it was pretty. It was pretty bad condition things when we arrived, the tents were all dilapidated and it had been occupied in years. But we were expected to set up a surgical tent or a surgical area and conduct care. During that mission, I was out there for 14 days while we were out on that mission. We lacked electricity at times. There was no water sometimes. No food. That was tough. I brought a lot of top ramen, don't worry. I lacked blood supply products sometimes because they expired. You can imagine getting a fresh. Whole blood unit on an mission takes a little while. If you need to get it from the states, so that's why we focused in on collecting threshold blood right there at the mission site to focus in on that because that's the best blood to give a patient when they're injured. Another thing that we learned from history, that specific item of whole blood, we knew in World War Two, we knew it in Korean War. We knew in Vietnam and then suddenly we've forgot about it. And then in the early 2000s, fresh whole blood is the best thing for resuscitation. We even talked about you giving crystalloids for a while, giving up albumin all these different things. But ultimately, we look back in the past and we found fresh, whole blood. We already figured this out. The environmental contaminants that was a really difficult time. There was we were out there on top of the building one time Dust Storm got into everything. There was no such thing as sterility. If it wasn't in a wrapper, that is something that's important. So my laryngoscope scope blades, everything else that we did, it

was just. It was a it was a moment being up there on that building. In addition to that significant chances of enemy contact. We were attacked every day and we're not talking about just indirect fire that happened when we landed. As soon as we landed in our helicopter, we took indirect fire. The helicopters were actually damaged by the indirect fire and we were just offloading in order to set up the medical team. Every night there would be RPG attacks unsettling with their night vision, you could see the night vision lasers coming from the enemy side into our area. They had some of our technology, it was something else, right? It was never had that experience before. Until that particular deployment. And. Next slide. Nor did the nurses at Anzio. Here's a picture up close of that area that I said Ohh, there's nothing there. Well, why isn't there anything there? It's because the indirect fire that they received was so devastating. And so continuous. There was nothing left. They would have foxholes that they would, they would dig underneath their cots while they were sleeping on the beaches. And some of them didn't survive even with those foxholes. That's the reality. This is what they went through in World War Two. Next slide. OK, let's talk about prolonged care cause in World War Two, they deal with prolonged care too. Definitely not to the degree of what we're capable of doing now, because we're far more sophisticated medically. But there's this significant concern of packing patient evacuation delays. So. If we have a prolonged care environment. Because we lack air superiority. What does that mean in terms of our nursing care? You could be simple and just say it just means we do nursing for a little bit longer, but we as nurses in this room being in Madigan, you've seen ill individuals. Perhaps you've taken care of trauma patients, you know, a trauma patient that's fresh versus a trauma patient that's an old trauma patient is a very different trauma patient. Right to illustrate this point, evolve. pathophysiologic the pathophysiology of the injuries. What's happening to the injuries, particularly in the lungs after a thoracic gunshot wound? Well, you may develop. Acute respiratory lung syndrome, ARDS, right as you develop ARDS. How are you going to manage ARDS when we have patients here at Madigan who suffer significantly with ARDS? In a high tech ICU. Imagine if you were in that environment that I was in. And you've got a Hamilton T1 vent and trying to manage their. Oxygenation. What does that look like? Who's asking those questions? Nursing researchers are. Potential lack of electricity. That's always something I'm gonna emphasize. If you've got this new fancy gadget. Imagine when you lose energy in your phone. Well your world comes apart right here? Just like my phones. Dead. Oh, my God. I don't know what I'm gonna do. Right. Well, imagine if that happens with your ventilator. I've had to actually ask medics to hold an Ambu bag an individual ventilated patient at a cadence. And I did serial ABG to monitor their. PACO₂. So we had to do because we had no electricity. Lack of sterility. Always a problem for us. Next slide, distributed maritime operations directly for the sole is you're the only Navy person in the room. All right, I'm gonna direct the energy towards you. So enroute care, that's major prolonged field care about the platforms, right? How are we doing care on carriers on hospital ships. What does that look like, maritime? I particularly don't wanna be on board ship because I get seasick a lot. Right? How do we manage all these things? Return to duty. So all the things that the armies worried about, they're worried about, too. KSAs. That's just a different version of the ICTLs, right? That's what the Navy calls it. Medical ship attack. Now we're gonna tie in a little bit of history to this next slide. Remember these nurses? I told you that were suffering on Anzio. So they just went through the terrible war against Rommel's army. Kasserine Pass all those issues in North Africa then they were said. OK, North African. Campaigns over we're going to Italy. Ohh, that sounds great. Who doesn't like spaghetti? Right. So we're all gonna board these ships? Well, a lot of these army nurses got aboard the HMHS. Her Majesty's Hospital ship Newfoundland. And as they were on the Newfoundland sailing to Italy, they were attacked by German dive bombers. The damage that's on the Newfoundland you could see here that came directly out of that book. You can see how devastating the attack was. They were sailing with big Red crosses. They were giant white ships and they were sailing in a straight line with all their lights. There's no way the German

aircraft did not know that it was not a that was a. That was not a hospital ship, but they bombed it anyways. The Army nurses is on board. A few of them died. A lot of them escaped. Escaped onto another ship that I'm not. I don't have pictured here, but it's called the Saint David. Saint David's safer sailed for three more days until it was sunk. Those same army nurses, a couple more died. Offloaded the Saint David. And were delivered to Anzio's half acre. Before the mission started. Is this not a classic version of resiliency? Think about that. That's what these nurses went through. Next slide. Air medical evacuations. What are our Air Force colleagues are looking at right now, so we're looking at transportation between role three and role four. We talked about that ARDS evolving pathophysiology once the best time to transport those patients. It's not. Just get him out as quickly as we can because we're talking about aerospace medicine. Things change when we go up in the atmosphere and altitude. How is that going to affect things as we start to have prolonged care, situations ensue, so a lot of the other things are sort of working, are being fixated right now, particularly on issues that are similar to the Army and Navy. As you can see here. Next slide. I'll talk about combat palliative care for a little bit here. Death is inevitable in combat. There are 400,000 soldiers that died in World War Two. That's a lot of soldiers. Still less than the civil war. Just to point that out. So during this period of time. All these soldiers were dying, and I'm reminded of a story that. Does anyone know Geoff Ling? Colonel Geoff Ling. He's an ICU intensivist. And form a DARPA director of the Biological Technical Office, he's a phenomenal physician. Very. Animated individual he's now the CP. He's the CEO of On Demand Pharmaceuticals. So it's a device that he created through DARPA. That no fooling is a vending machine for drugs. For pharmacy so, you could go to the monitor on it and you type in propofol and it spews out propofol from one side and you go Motrin and then it spits out ibuprofen tablets. It's pretty amazing. Technology is incredible. But it was all created through DARPA, so Geoff Ling told me a story once. His grandfather was a physician in World War Two.