First of all, welcome to the Functional Medicine Workshop for the Annual Pain Care Skills Training we are excited to have you here virtually and I just wanted to point out that in the files pod are a number of handouts especially if you click name it will put them in order one through five. We highly recommend you start downloading those now. Also, any files pod we have the extra items as well as our speaker's bios and if for any reason you get kicked out of the session there is also a PDF version of the presentation so if you would like to download those, they are available. Again, we have plenty of time before we get started here but I just trying to make sure that everybody takes care of that before we start.

Hi all who just joined. This is Amy Osik I'm glad you all could make it. Hopefully you can hear me well, we're just going to do a couple of announcements before we get started. We have about 45 minutes before we do that. Just reminder here on the left-hand side you will see a files pod. I recommend you download all the attachment you can print them out or state of somewhere -- save them somewhere [Indiscernible] in the files pod here we have the bio for both of our presenter that were very happy to have then we have some extras that they supply, and we also have some of the presentation information in here and I recommend you probably don't know that as well if you are fearful of getting lost in the presentation were disconnected. Also, in here is the CME sign in sheet if you are requesting CME you will need to send the sign in sheet back to myself or someone from my team which is I think Troy was listed an email. I can put my email as well as Troy's in the chat box when we get started. That is to start off and we will get started shortly.

For those that are just jumping on I will invite you to do a brief breathing exercise with me. I'm just going to sit back in my seat get my feet in the floor and we will do a couple of deep belly breath one hand on your chest one on your belly [Indiscernible]

Okay we are just getting here at the top of the hour. It is 1300 so without further ado we want to get started here. If anybody has just joined the line please make sure that you mute your microphone by star six or just mute, please don't put us on hold we might get background sound. Also, a lot of people are hearing us through the actual Adobe Connect or anything like that common that's great. Again, I have a number of logistical items to get through before we actually get started. The files pod on your left-hand side available are the handouts. You need to hover over the actual item you would like and go to download file and select download. You can download those very freely and we also have the bios of our amazing presenters today. We also have the CME sign in sheet please return that to Troy Spencer or myself Amy Osik I will be sure to put our emails in the chat box. Also, we have [Indiscernible] our presenters have supplied as well as PDF versions of the presentation. I recommend that you actively start downloading these as soon as possible. Then I'm going to go into some of the other logistical. Welcome again everybody to the annual Pain Care Skills Training for 2020 virtually. We could have you here. Also, we will be recording the session. For questions, please make sure that you put any questions in chat box. Please put your questions chat box here or there's this hand up here is a little man that has his hand raised you can click on that but we

recommend the chat box we will more likely see it more readily. Also, again a reminder about the CME please make sure send it to Troy Spencer that was on the original email. Also, we have a reminder that the plenary sessions are now available prerecorded they will be available through FY 21 and well as during materials CME is. You will have to send those as well to Troy Spencer, but all the prerecorded plenary sessions are available and featured to her amazing presenters today so it's really entry to get to have them for so much extra time. We also have a reminder that at the end of this week we will have a survey that will go out to you. We ask that you take the time to do that as it's impactful for future funding and planning and also to let us know what type of workshops you are interested in. If you are requesting CME there'll be a separate CME survey that will be in the actual system when you go to retrieve. You will not be able to retrieve CME for at least 3 to 4 weeks as the credits or individually assigned and then you will receive an email from the CME system once CME's are available. For logistical purposes if anybody stops seeing the slides move or if they start seeing the slide exist we recommend you sign out & back in as a guest and you should be able to have access. Is not pleasant send me a try to chat we will see what we can do to help you out. We have Mitchell Jun in here that is our IT facilitator he can help us out. That is my list of my very long items that need to be covered I would like to turn it over to Geoff Dardia and Bryan Stepanenko thank you all.

Fantastic thank you Amy and thanks to everyone for having us to expand on some concepts. I am supremely excited to share the content. Geoff and I have no specific disclosures and just the disclaimer being that all of the views expressed are our own we do not represent any specific organization the military DOD or national capital region pain initiative or other. I will briefly introduce myself and I will ask is a the family decision [Indiscernible] I got additional specialty training and functional medicine and have had the pleasure of being part of the teaching cadre of the training pathway that the national capital region funds for training military health care team members and healthcare leaders and functional medicine. As part of that I will be speaking from the clinician perspective and Geoff will be sharing with us from the ground level training -- patient in person perspective.

Master Sergeant Geoff Dardia, I am a Green Beret active duty at Fort Bragg I service the operation Sergeant [Indiscernible] has an action officer for the [Indiscernible] I got into functional medicine basically by adopting military principles and frameworks everything I was using as a Green Beret in combat applied it to my medical symptoms and found out that it works of medicine as well as it does for combat operations. That's how I got on today's and you are going to hear something about that today so thank you.

For those were wondering we are six feet as part as best as possible and we interact regularly, we will roll right into it. This was just an opportunity for us to take a mindfulness couple of big deep breath and center intentions for what we hope to learn and take away today. Geoff and I are supremely grateful and that we get to share what we feel is some of the pinnacle of our life work together here so without intention we will go right on. Disclaimer we already touched on. Learning goals we

want to make sure we orient all of the attendees as best as possible to awareness of the threats to health and medical operation environment. We're going to define that better for you and increasing awareness around but specifically we are going to help relate to frameworks in particular and use those frameworks as ways to assess and address early dysfunction any soldier or any veteran and military community member. We want to foot stop on to powerful analogies and you will hear us make reference to these analogies throughout. One is [Indiscernible - background noise] the things about your vehicle and the check engine light. Check engine light pop on and you notice them when there something wrong and check engine light tell you to look under the hood and to start looking for was going on it gives you some general sense an idea of what might be wrong so that you make a more well-informed decision and have a well-informed conversation with the mechanic if anyone. Sometimes you can fix it yourself, but we are going to help you identify check engine lights and military community member for early dysfunction and talk about what early assessment and early intervention looks like especially with self-care first.

Theater analogy is on handout number one not the agenda but the handout with the stained pneumonic there's an infographics that explicitly lays out soft truth number one washer ration -- special operations truth number one that's as humans are more important than hardware. Every piece of hardware the military owns has an owner's manual that outlines preventative maintenance checks and services. If you been in the military through basic training and beyond you of all -- here PMCS. What would a PMCS look like for a soldier military operational member or military community member so how can you PMCS yourself and the person next to you. A PMCS is one concept and the check engine light is another can't that's. Learning objectives after this workshop we expect that you will be able to identify to help military operational environment and understand how they contribute to the total experience of pain we are going to try and bring back to the lessons of treating total pain experience for person how you to mitigate those threats to help military operational environment with awareness of care early care and understands frameworks reference specifically is the stained pneumonic and framework and a clinical approach to care that is a separate pneumonic. We love pneumonic. Understanding those frameworks increasing her confidence and being able to have conversations around these check engine lights when you see them and what early care and early intervention look like. This is the agenda that is our handout number one for a free to it if it was our position along the way or if you want to see what's next.

This will be a poll that we would like you guys to engage in. Amy if you can bring the poll on and shortly after this poll in your answers, we will roll into Geoff Dardia's initial portion of this workshop. If you could please answer for us as we try to learn about who our audience is and is health and understand who we are talking to so we make sure we include your perspective as best as possible and we will try to take some positive throughout to engage the chat box and there's any questions or comments that need to be elevated or address along the way. Amy I just want to invite you if you see some comments you would like to elevate or question that we have not addressed timely by all means jump in and let us know.

I think we got an even split so far which don't mind the terminology [Indiscernible] specialty service providers as well. [Indiscernible] some of these poll surveys along the way will be versions of feedback for us and just used to better understand how we can improve our workshop for the next iteration.

Welcome everybody. Bryan and I are very humbled to be here to speak with everybody and hopefully share some lessons learned so that way we don't have to reinvent the wheel and other people don't have to go and get the same type of experience I had we are going to move on this. We cover disclosures disclaimer no conflict of interest for speaking on our behalf not representing anyone else the biography that is downloadable if you want to see if we are going to cover some of that today. Operational environment we are going to go and the definition of the operational environment everybody's always here in the military understand operational environment. People always they don’t say the wrong thing at the wrong time or the application what comes [Indiscernible] there's also another thing we like to look at but it's a composite set of conditions circumstances influence that's the employment and military forces. For this we’re going to be doing the health effects of operational environment how it affects us and our employee Billy and how affects not only life on the battlefield as well so I'm going to select pictures of there's a lot of analogies to help drive this home. The objective is we are going to get a big picture see you understand the problems that visualizes an indirect resource within your care programs to get people to help they need.

This is the agenda I will go over quickly on a flight you can see the process for intelligence preparation the environment also known as better feel -- battlefield [Indiscernible] first step of defining that -- evaluate the threat the adversary and the determine of course of action so come up with a game plan you're going to works of that environment and protect yourself from the force. Background in here this is the baseball card usually when a person walks into an office and they say my name is so-and-so and I am this guy I met Green Beret, or I am and 80 feel or an infantry person. What you see is uniformity the rank and maybe a couple passes away you are not seeing it all that away from home and comment environment and toxic environment or high stress zero sale zero defect environment and a lot of those things uniform actually need something if you can translate it and understand it the bottom line is someone to see you have very limited information that you have a general idea of what they do not really so we are going to clarify that in this presentation. We will go back to that later. If you can see the slide right here this is me this is the halfway point in my career, I basically hit a wall at all and you was that I was dragging a dead body and I was functioning the way I used to be existing was -- I wasn't living. If I don't get this text I'm going to self-destruct in care my career anymore that point already going through divorce affecting my job performance at home not combat but when I came home and wasn't deploying anymore everything can be like a brick wall so finally I raise my hand and I identified if you can reach through this was me telling the doctor not everything I was experiencing because there are certain things we could is ripped off between security clearance but this was the big stuff I

was focused on I was happening. We are looking at fatigue a regular bowel option -- irregular bowel functions sexual dysfunction [Indiscernible] just gaining weight and feeling [Indiscernible] and fatigue and I would say it was depression I wasn't happy with anything and everything in my life I wanted but I felt depressed like something was severely holding me back so I went through this entire process so -- spilled the beans the doctor and you can see were sitting there no clear etiology to correlate all these complaints. This is a very good start right away he was doing when he was taught to do with his is on identified all the things, I was telling him and put them on paper but couldn't figure out why all these things were happening this was back in 2012 that you can see it was diagnosis between basically like we don't know if this is what I want to blow you off we will look. This is what I was starting to get a [Indiscernible] referrals go figure this out in 2012 had a general idea of what functional take medicine was anyway did not want a cocktail of pills I want to get rid of my problem and figure it out and fix it back.

What I did as a Green Beret is applied certain types of principles and procedures that we do an Intel trying to figure out patterns of life or to see things in the battlefield that aren't random. These are things that we go and we see then all of a sudden week got they are all lining up as pretty significant events that have pattern to them that affect our ability to operate on the battlefield so I took this technique put it on paper and created timeline and did all the way for -- I this one goes only from 1994 way to right now Terry [Indiscernible] taking all those events that happened to me click putting them on paper and getting the 5W [Indiscernible] where he didn't want to live anymore basically like either keep me in combat where I felt perfectly normal or I am checking out. That is when everything in my life I knew I was existing not living anymore if the only place I could function and feel happy with the high-intensity combat theater when I am getting shot at and people are trying to kill me every day that's not normal identify that being normal want to get back to where it was before joining the military. In 2009 I came back deploying after three back to back to Afghanistan and became an instructor issued house for high explosive breaching advanced combat marksmanship. That's when everything started buzzing out of the seams and everything started falling apart. Looking at it I'm going to skip past this going into later but all the way up until 2012 and 2013 is where I adopted personal protective lifestyle nutrition functional medicine operating system and I will go into that after, but you can see that going in my career I did not want to get [Indiscernible] I did not want to be a prescription drugs I just wanted to do my job and be more effective but also be able to enjoy my life when I came home. Operational environment the pictures on the slide you start to see some of the things I was doing. This is all me in my environment what I was doing [Indiscernible] I was in 18 Bravo which is a special forces weapons sergeant at the time so I'm shooting having a bit -- heavy weapons [Indiscernible] blowing up massive cash a with explosive going to shoot houses close proximity to explosives and all of those heavy metals that are in munitions and [Indiscernible] that's my environment and we are going to look at how it affected me and I'm going to paint a clear picture for you to see that is.

We will contrast between training environment and Garrison environment so what I did was these things that were in my environment prioritize them I looked at all the different places that I do I looked at all the things I was doing and I said okay which out of all of these is the most impactful ones that are having most impact my health [Indiscernible] is a threat level high medium and low in the looked heavy metals is one of the biggest ones that stuck out and looking at our munitions. I will do the health effects of those metals and I said these things are in the environment they are going to have an effect on me I'm not going to get away from these things I not need to them so a cease-fire analogy is defined to a fire you're going to get burned how you get burned and all the conditions those variables and factors hello are you in the fire [Indiscernible] that determines what type of damages done so to tell somebody that works in this environment it's not a big deal are not going to be impacted is very naïve to think that way that if you are breathing and carcinogens you are not going to get some type of effect from that. Looking you can see we know heavy metals especially ones that are already will is no and probable human carcinogens. We know the mechanism of action of how these things work when in abundance in the environment and you are breathing those things that they have an immediate effect on you. Chronic and acute exposures over time. Sources of heavy metals you look at this library here this is no developer munitions we know the ingredients to the mission and using the Army so this was developed by CGT SL in Virginia they developed conditions explosives and weapons for the D.O.T. average the sun that what is in this stuff comes out of them -- deviations were to go after that. You should you're gone that cloud goes up and consult your charging handle interface how the end of your barrel that goes up and a cloud and you brief visit all day and you handle this all day [Indiscernible] you get your vehicle and drive home all these things listed on the slide they are going with you everywhere you go and they are part of you there is stored in your tissues and your phone so they leave the range is environment and you are fine is have a lasting effect on it. Looking at this is that issued house you can see after explicitly breaching into a room for mechanically bleaching room you take about a dozen you start shooting so all the stuff that you use for explosives not only get in the room that you're shooting everything coming out of the weapons is also going is the cloud single day are training we are talking Garrison environment is for a to a foreign country.

To give you guys context for this that special operations forces literally shoot more in one day than a regular our unit issues in an entire year. As an instructor we shot over 150,000 rounds every class and we did find to six classes a year and how many years he worked there you add it up, so we are talking millions of rounds going to shoot houses and flat ranges that you explicitly breaching keep this stuff up there's almost 20 years’ worth of cumulative heavy metals in this environment that you were being soaked in every single day. On the left almost like you can see that was the light from shoot houses picograms are not supposed more than 200 per square foot a couple of those rooms them there is a 13,000 we are not talking a little bit over we are talking massive amount over acceptable level of lead [Indiscernible] hundreds of times over that has a huge effect on health. Looking down going to one of my shooting schools this is back in 2007 if you can read that back then

they used to tell you if you are 40 micrograms and below for like you are fine there was nothing wrong with it but we know today by CDC and OSHA guidelines that 10 is acute toxic for adults and 5 for kids now [Indiscernible] I was 33 times over today standards for acute toxicity and that wasn't the rest of my career that was just four weeks into a shooting school. Looking at the mechanism of action [Indiscernible] I'm speaking with providers will have to go in depth here bottom line is oxidative stress mitochondrial dysfunction a proptosis so normal so deaf -- cell death. [Indiscernible] also caused information throughout your whole body. Let toxicity symptoms of the looked on the left-hand side you say wow a lot of them look like traumatic brain injury symptoms [Indiscernible] key facts for let toxicity over 95% of lead you are exposed to season you from a minimum of 10 years to indefinitely depending on your individual status for metabolism and genetic predisposition but this doesn't go away quick depending on the status of your metabolism nutritional status or [Indiscernible] it affects everybody differently about the bottom line is raising your love than you think and it's also probable human percentage in and neuroendocrine disruptor and it also affects development so if your fertility issues passing that on to your kids can affect development and. Looking at it because I those facts that I was exposed all of those things and it was a maniac tested and find it capping us with the smoking gun can figure out what's wrong with you show was wrong so I figured out one of them lasted a long time I could get tested so much amount I got a [Indiscernible] x-ray my halfway mark in my career hours are twice the threshold for chronic exposure. And that -- and adults my age [Indiscernible] if you look forward you will find it if it's in there you can find it. Going over all the things I want to clarify this right off the bat there is no safe amount of heavy metals in your body telling people that normal levels or acceptable levels there's no such thing these are no function the body but the damage so we were was told 40 and below they were five they already know now between two and five micrograms they were getting permanent damage especially with kidney liver hard cardiovascular and neurological so the higher you go up and the blood goes from your organ systems and function to neurological damage and neurodegeneration the higher you go the longer [Indiscernible] looking at fertility affects obviously if I was in that environment I would go get tested for fertility problems that might year after working in that range I left be gone for euros fertility affects can have kids and all because of it but it was in there the environment known effects of this stuff known health effects go back to the fire analogy if you put some that environment is going to the fact it had a pretty good about me you can see it.

Neurological effects binocular vision disorder I'm going to hammer the point home not only with a bringing toxic exposures I was exposed to thousands of blasts working as an instructor and 18 bravo with all the concussive events going on around me. Just as an instructor in a two-year period over 2400 explosive charges over a quarter pound of C4 equivalency so imagine being in a small room and someone detonating a hand grenade in room with you during that 2400 times a two-year period to give you some context with any. Sphere binocular vision disorder [Indiscernible] all these things were present as I was doing my job not complaining of it at all, but I told him I had balance problems and double vision and

headaches that I learned about neurological effects of TBI found out that I could get these things tested and a referral to do that without being in TI program. Proximal exposures once and with the stuff was in my environment I started getting tested after shooting at the range so we agency arsenic let Mercury that the only free the military were looking at with a comprehensive heavy metal tests only three metals [Indiscernible] let arsenic mercury through the roof they are going to be different all the time but you can see in the blood my leg was only at a 4 but if you look at your you can see that arsenic and mercury everything else is elevated. Different types of testing [Indiscernible] you can see 24-hour arsenic in my heavy metals is over three times the reference range and let is just hovering on his back this was while I was 17 just a regular training but I would hover anywhere between 2 to 10 micrograms per deciliter at all times so when you're in that environment training is you are caring a toxic load continually especially if you are [Indiscernible] 18 bravo. The next third-party testing military let's just make sure these military labs aren't screwed up could be false positives or if you eat sushi due to tobacco I was like no I don't do any of those i.e. sushi once a month so was an issue with Mercury let arsenic and all of those things but third-party testing showed all the battles that you see in the ammunition [Indiscernible] you can see uranium and fell into I was exposed to I am Afghanistan the Russians left a bunch of around and our water was contaminated caused alopecia and lesions all over us. That dusty to me for years chelated bakery there was please uranium munitions lower theater we had everyone from Russia China United everybody and I ran pushing the mission in Afghanistan for four years of for now so there's tons of stuff in the environment there as well. Looking at go back to the battles you just on previous like they are already here so it's not really things are coming from but again don't get target 50 nope unintended lead when you're looking at people a hot topic for air pollution your hearing [Laughter] Come out of the toxic exposure bill the key to build all these things/burn pit everything the environment and that environment to go and going to be in you. Like I said Mercury you can see this is before even going on deployment my blood mercury was are you searching for six pretty much considered acute mercury poisoning so explosives impactful Mercury call to have my fillings removed, I think shortly after that. I had [Indiscernible] that stuff was old since I was I think 13 years old stewing in my mouth have the perfect cocktail of heavy metals. Mercury exposure I talked about the explosives. One of the big things and mercury poisoning everyone here's Mad Hatter's disease makes you crazy anxiety psychosis also if every organ system in your body the big thing it affects the lungs coming in [Indiscernible] getting that easy cough coming into the environment with the stuff and let you know especially the older you get forceful stupid. If I go in this environment and this stuff is there I start wheezing and coughing immediately. [Indiscernible] I started coughing how we think that when he was asked the doctor for a chest x-ray sure was positive with pneumonia that was before going into [Indiscernible] is 2016 I just got back from Jordan getting ready to go to Africa. Looking at it again going back to these metals coming out if you bring that stuff and it goes right to those organ systems it affects you [Indiscernible] DNA damage to the carcinogens but you can see my levels appear mercury and lead through the roof coming out. This is two weeks post deployment coming out of Africa. When I was in Africa they have a weather

phenomenon [Indiscernible] everyone there is trying to where their little masks people try to limit exposure during the day because it is a horrible but they (all their waste cross always pollution from vehicles and mopeds are there ways retracted receptor coming back I'm urinating in public go away is now the check engine light both the indicators and okay creatinine clearance being twice a reference range still holding a pretty good burden of let arsenic and [Indiscernible] in my system [Indiscernible] looking at Mercury don't just think dental user tuna fish. There's a lot of mining that goes on in the world and industrial production and also recycling electronics brought a lot of electronics and all those things that are in that environment they go straight into the water and the air in the soil so those places that you see all the dark red and brown goes where we deploy special operations were deploying 180 countries so if you're thinking Iraq and Afghanistan maybe Africa thinking the sky could've been in one of those 100 6080 countries that are out there we deploy everywhere in the world was good at that picture where you been. That's why go back to the timeline and harp on it building where we what we are being exposed to what was in that environment how did it affect you? We are starting to clear that -- paint a clear picture for you. Air pollution and burn pit so if you look at that list Afghanistan is number one and you Pakistan and India Nigeria China Saudi Arabia, we are not even looking at Africa where they can't even collect data from these places. These places we deploy special operators and we spent six months there some guys are 14 to 18 deployment almost 30 years for some summer context on it. Looking at air pollution particulate matter this is where we are deployed right now Africa Northwest Africa Central and South Asia this is cycles for us this is where we live six out of 12 month every year some people out to 14 to 30 years can do in a few years imagine what I can do a decade there's a reason expected the 7067 the United States easily like 30 to 48 environment you have is there a title of the we stop in giant piles and a neighboring every single day every single night so you constant burn going 24/7 in these countries where you're over there was PTN running outside and training indigenous people you are breathing in the toxic waste and [Indiscernible] all these weird issues wrong in the hands and feet and hypertension distal epidemiology all of these things happened after going to Africa not Afghanistan.

Here it’s right here I talked about those things. Air pollution one of the biggest killers in the world accounting for over 9 million premature deaths across the year worse than COVID-19 but we are not quarantining tell people to her pollution but we are free virus. This stuff is almost as that they are more deadly than the virus and technically it is but this is heart disease number one killer in the world that followed by cancer and stroke. These are leading causes of death it goes right back to the environment. Looking at the burn pits picture says 1000 words we will go back to Africa or Asia or Europe wherever these people bring their waste outside and all that air pollution [Indiscernible] 9 million premature death you can read the fine text below all of those other fine text below. You are seeing something that comes across in your office wheezing Kelly [Indiscernible] you can obviously hear them wheezing and difficulty breathing but you didn't check information the upper airway or inside the lungs can have a normal chest x-ray and obviously still have all the symptoms that you have to actually get

scoped I had [Indiscernible] and I have in flames long -- inflamed lungs [Indiscernible] here is lung cancer stroke and heart disease killers around the world we get all the time but not too many people think air pollution with that something very heavy metals think of air pollution think of [Indiscernible] there's the resources [Indiscernible].

It affects every system in the body but basically, we are starting to see a lot of those things in there looking like anabolic syndrome it affects metabolism mitochondrial dysfunction oxidative stress is going to affect every system in their so insulin resistance heart problems [Indiscernible] we gain the neurological problems down the road. Stress we cover the environmental stress of heavy metals in air pollution toxic stress I'm not going to deep dive too much acute stress and going to go more chronic and traumatic uncontrollable unmanageable stress. This is part of looking at our environment where we were [Indiscernible] powerless her helpless hopeless hierarchal stress being at the bottom of the total polar clear mission purpose or focus failed relationships at home all financial struggles all these things are unmanageable [Indiscernible] have to go through working the Hydra environment but they put you in an environment where helpless and hopeless and powerless to change the outcome of her situation and they want to see how that affected your nervous system and how you responded to that measuring cortisol and testosterone his mother [Indiscernible] they looked at it in a looked at [Indiscernible] they figure out a high center reported levels of cortisol in humans I'm going to the next slide on the bottom you're going to look at this is just after [Indiscernible] your only in captivity for weeks of the second week is where there measured all this and you look versus changes in testosterone levels are slightly remarkable in some cases testosterone drop from normal levels to castration level [Indiscernible] depending on the situation you are in I can't elaborate on the situation that school but your powerless helpless and hopeless to change the outcome that situation your life is not person's hands the outcome of your situation you can change it you can influence it can kill you at any time in the schoolhouse they can't kill you been in a real environment with that threat is real your body doesn't respond the same way to study for a test being stuck in traffic bottom line so I that important? Going to focus on the outside load garrison environment. I never had an issue in combat never had PTSD from combat. Mainly Tom stress disorder I had with home environment and garrison when I was not employed, I was constantly in school my operation Temple with remember I was always TDY are a no fail school right was MOS producing where if I failed my career was over, I would get ripped off team as well. While about all your [Indiscernible] when I was home, I was dealing with 300 other things just two things in a combat environment and I was in school trying to get all of these programs that are super cognitive intensive programs law enforcement are trying to do these things in the most stressful day could be in and didn't realize it because we was combat how can we be stressed more than that.

Bottom line we are looking at chronic stress and shamanic stress but what we see with stress is a response& By go back in baseline after you resigned to be good stuff about baselines were hyper-vigilant went back to you with our nervous system? It should say slow baseline so we are not able to fully relax and the recovery and do other things were supposed

to do back in the environment through peer recovery produce all those things suffer when you're comparison of the nervous system can't fully active phase of those things need to be bound when he gets split away from baseline provisions PTSD and stress disorder so it may have been lost veteran or partners that change the situation the broken records going over definition PTSD but keeps state alert constantly works going to affect your ability to maintain anabolic balance and proper cognitive function and sleep recovery and digestion and absorption so I cannot hear. Gas pedal pathetic calm a brake pedal sympathetic. [Indiscernible] we look at problems information problems of the leading causes of death we see all the prescription drugs that are prescribed in the military go because of the number activated sympathetic response continue nonstop never letting off and everything on the parasympathetic side of the house working were supposed to be working so overuse on the right underutilization the last usually no one cares about I talk about this, but I will go to sexual function. Me personally I didn't care about the balance issues the pain and migraine headaches I didn't care about the digestion issues I care about the rashes sexual function and was operating to be sounds the veteran battlefield because that's where I thrived and when I came home from the battlefield cannot operate in the bedroom I wanted to die because that was like my sanity the straw that broke the camel’s back that's why I put it on their if I can function in that realm and I come home we are problems that was literally why I went to the doctor but I can tell you nervous system that all the plumbing was working perfectly normal when I was in an environment that was controlled and isolated everything works the way it was supposed to work but if there's any type of distraction the environment or I was a heightened state alert nothing were so all the plumbing work to the software was broken because I was hyper-vigilant you're not supposed to be around are stimulated are intimately your any hyper-vigilant date that's why you have to flight response to keep you alive your was reproducing when you're in a high threat environment so probably something we should discuss among ourselves and community see sexual function I would like to do is on the beginning of my career suffers for 5 to 7 years so I could have easily done breathing exercises manage stress take things out of my tires my lifestyle factors that so that was the straw that broke the camel’s back there looking at it we are talking about chronic stress over time looked down at the bottom so were talking or force field what protects us from our environment our immune system right? Overtime we are constantly hammering down the immune system I like to use the analogy everyone knows Star Wars. The cancer had a force field around -- that immune response is constant [Indiscernible] I will show up as acute there will be some clinical that dusters burning in [Indiscernible] we see in our environment and special operations cancer and suicide are the leading cause of death.

We can still hear you if you want to continue presenting.

We are back we talked about the death Star that's what we started seeing how ironic that happened at that time. We know there are things in the environment the operational environment that we are constantly putting ourselves in the fire. We need not force feel that the personal protective nutrition lifestyle that we can implement on our own to protect ourselves in that environment. Stress is one of the biggest

killers and I will go down and explain why it is like all those things stress oxidative stress we talked about nutritional status talk about toxins in the environment we are talking about sleep disorders we are talking radiation over activity or interactivity not sedentary but those things for the environment they are constantly trying to let you on fire and damage you we need to be [Indiscernible] over 77% of the population and eligible to join the Terry even to get any unicorn -- in a uniform [Indiscernible] because of that environment in the United States is having an effect on their ability to join the military and looking in the military to fat to fight we are seeing that now that we have an obesity epidemic within the military so what is it look like we talked about the heart problems and some resistance [Indiscernible] cancer neurodegeneration we see CT we started to see bring problems in young people cognitive impairment people in their 20s and 30s that Charlie was in the 70s white matter lesions hypoperfusion bring all those things are there part of the environment we caught operator center where we are in Macalester love that you've experienced so your whole career has nothing to do with age it's metabolic age inflammation so the more stress on you is going to rapidly aging overnight like this was an hereditary I have more gray hair than my dad did. That was for my environment where he worked [Indiscernible].

What I want to show here or contrast right here is the 2015 that picture on the right with me in 2014 operating in Afghanistan full capacity but I had all of those things listing on the left [Indiscernible] the DOD the VA and the Cleveland clinic so I have metabolic syndrome I had TBI I had heavy metal toxicity thyroid problems all those hormone imbalances everything was there it was measured it was captured but what happened was every single provider I saw spread out over time they only have one snapshot so imagine trying to look at a map [Indiscernible] try to see the big picture of what you are looking at when all you're doing is going one specialty place [Indiscernible] [Indiscernible - multiple speakers]. Operator syndrome is what we see in our population group with obese metabolic problems TBI stuff PTSD the sleep disorders I didn't have disorders until after I came back from Africa when my lungs were messed up and we are seeing the same patterns of discussion people in their 20s and 30s come and 40s what we typically see in people in their 70s and 80s [Indiscernible] a couple papers published in the last six months that really deep dive today and we personal to you but those terms being used more and more we did not use it because we want to put it back to the community [Indiscernible] it was Down little bits but the more we talk about [Indiscernible] COPD respiratory illnesses stroke and nerve degeneration Alzheimer's on or about metabolic environmental stress toxins diet lifestyle most of these things are preventable if you can build that resiliency and minimize your exposure to these things when you don't need to be in. You can’t solve a problem if you don’t framing understand it so going to this environment we know we are going to start [Indiscernible] over $7 billion a year on prescription drugs for these conditions that are mostly preventable if you know what type of environment are going and how to protect yourself. Two thirds of that is for retirees and veterans think about that people that have left their organization but active-duty deployment are being medicated for life if I can take let's say 10 to 20% of the prescription drug Causeway by

implementing personal protective lifestyle nutrition I can take that money and put things in the military is not possible we are doing a fresh out with other initiatives in the military about the efficient and effective. $7 billion a year for drugs are probably not necessary or from preventable conditions that are all related to the environment. Looking at is number one selling drug in the DOD is a cholesterol Lipitor so is number one selling drug military but where to all hormones come from? There life a cholesterol. If you put a drug in somebody instead of adjusting their lifestyle and nutrition and working on managing stress and optimizing sleep you're going to the drug that they are spending a 10 year span over one $.3 million and also potentially cause insulin resistance combo testosterone fertility issues depression anxiety sleeplessness weight gain these are all the things that happen when you went drug on board what about those other ones that get added. For example, every time I went to the doctor and every time I left with a new prescription for every cent I had. That would have been only expensive and dangerous, but I would have continued down the same course of action with my lifestyle and environment without changing is doing damage. Theology the check engine light so imagine being a car all the check engine lights are going off and what do you do? You put table those are your prescription drugs and you hit the gas pedal and hammer down doing 110 miles per hour what you think is going to happen the wheels are going to start to fall off. That's why we need to address root causes unction and identify those check engine light that was causing those things and how to mitigate and resolve them that way we are not just during prescription drugs symptoms and getting that .7 billion dollars price tag without condition your symptoms may go away for little bit [Indiscernible] has been resolved.

Going back metabolic stress the cancer like not going to go into depth in here but everyone is familiar with how cancer starts in the roots of visit goes right back to the environment mitochondrial dysfunction [Indiscernible] DNA damage DNA disrepair so the all these things in the environment where I was working what my chances of cancer were going to be working in that environment had not changed my path and the environment is going into.

Although things are carcinogen, alcohol, tobacco, firearms the metal in them and processed foods we are putting in our body that are known carcinogens. That is from going home and needing and lifestyle that doesn't involve combat or training. Just lifestyle choices that can be made better. By 2021 cancer will surpass suicide in the military so it goes back to the operational environment.

Cancer, shown different types of cancer, this is what it looks like. We don't have to go into depth on that. We are seeing the same things, the leading cause of death assault -- that was my lifestyle and my environment. A clear picture of what I was doing. I did not self-medicate, alcohol and tobacco I never used in my life, I'd not been here right now if I done all of those things. I'm not the technical person. The person who self-medicate they get the next thing I know do whatever they can to keep their mouth closed and not self-identify but they will drink a bottle or two of duck down all the night to battle their demons and get to bed and fully function the next day so you never know. When

someone asks how you are doing, I'm fine, perfect Doctor. Inc. about the environment, you don't have to ask them what's wrong Rasco that the problem. You say how bad is it? It takes away the ministry, you can see the stuff, this is not unique to me. You know the environment and you know it affects people, saying how long those people were in the environment and what they did that was unique and going to look for the damage to see how bad it is. No one will walk away from the environment unscathed.

Our platform changed and the ability to switch slides.
Okay, we are back.

That timeline will help work with anyone, even yourself, going over some things and this is how you do visualization. The operation process. Define and understand so define the environment and understand and visualize what happens in the environment and paint a clear picked her.

Sleep disorders, we are looking out sleep disorders not just sleep apnea. How many times does a person come in and says I wake up with a headache and dry mouth, fatigue, feel like I didn't sleep, and I get a sleep study and I say you have a obstructive sleep apnea and here’s your CPAP. That's only one form of the sleep disorder, you have hypoxia, central sleep apnea, mixed apnea, fragmented sleep, hypervigilance and all those things happening just telling someone they have a sleep apnea diagnosis and hand them my machine doesn't address everything. Tools that they can try to get rid of the sleep apnea or whatever disorder they have. I didn't have sleep disorder until 2019. While I was in Africa it happened to me, felt like an elephant standing on my chest I couldn't get a full breath of air and could not sleep on my back. I thought that for a year because I didn't have a chance to get a sleep study. In 2018 it got worse, I came back, I thought I was having strokes because I could hear the blood pressure in my head and massive migraine headaches. I got a sleep study, 54 percent sleep deficiency and I had hypoxia, no obstructive sleep apnea, I wasn't storing. Insomnia with high pop Naya and they didn't explain anything to me. Luckily, I knew what the sleep disorders were, and I worked at fixing it with inflammation in my lungs and upper airways. I got treated for six months in the airways cleared up and I could sleep on my back again. I still have fragmented sleep so my nervous system prevents me from getting deeper sleep sometimes, that's coming out of my environment and they said it will get better over time but it there. This is powerful. Insomnia in the military is up 650 percent since 2003. This is not unique to the military, if you look at the population it's probably similar. We are attached to cell phones, news, work, and stick him, Facebook and it consumes every free second you have in your life and you focus on that and you're not shutting your mind down and getting that parasympathetic restorative rest and relaxation you need. Hypervigilance, it's not just a military problem. 23 times the risk of a heart attack, three times stroke, it looks like metabolic syndrome. Not sleeping, TBI are both connected, environmental connected. Things we can do on our own to mitigate these things to address them and make better decisions, so we don't have to be victims of this.

Comparative sleep study, I had one done in 2012. No issues, good sleep study, no sleep problems. 2008 Tina come back with long issues and 54

percent sleep efficiency and then restorative sleep was not there, REM sleep gone, all high pop Naya Vincennes 100 arousals. Basically, what it felt like for me was I could hear every single thing going around the room, I was still in tune to my environment, I could hear machines and people. They said I was asleep, I was not asleep, I was in a new environment by myself and in my environment, I grew up in special operations that meant you were dead. Probably not a good way to gauge a sleep study. When I was deployed, I slept like a baby, we had to charity and there was always something there but when I go into a new environment, I tell myself I'm okay, but my nervous system is wired for war. This is part of the education and understanding this and being able to explain why this is happening and how they can address it. Sleep is a huge factor because guess what. Those with sleep disorders are twice as likely to kill themselves. At the big one. People with insomnia or sleep disorders, it's like being intoxicated and drinking and driving. If we know 85 percent of the military population has sleep disorders and 50 or obstructive sleep apnea, we have people not performing optimally and they need that acuity and alertness to keep them alive and people safe around him. Not something to blow off. I believe that studies or some type of tracker for monitoring sleep should be mandatory. I have two sleep trackers, so I take sleep hygiene is just as important as breathing and eating.

That's why made a connection here talking about suicide. Over twice as likely to kill yourself so we have a suicide problem in the military and civilian population, there are sleep disorders tied to the environment and lifestyle.

In a population group that never saw suicides alarming, we tripled in 2018 R suicide epidemic. We are throwing more money and education, people are doing push-ups, you see commercials, we look at the risk factors, but we blew over the physiologic risk factor. That's why I'll roll into TBI.

All the effects of these things, anxiety, bearing fog, heart attack, stroke, high blood pressure we see these things. If you remember my intake and what they look like it was 75 percent of these here and at that time in 2012 I didn't have sleep apnea but had some type of sleep disorder where wasn't getting restorative sleep. Sleep being one big one we can control mitigate.

What is it due? Basically, it sympathetic over activity, someone like putting a gun to your head or robbing you. When you are sleeping and oxygen goes down low your service nervous system cranks up like you're in war, to keep you alert so you don't die while you're asleep. Imagine drowning every night with sleep apnea going untreated. Physiologic response to that, what it does. Metabolic disease, stroke, cancer, hypertension, nerve degeneration so 80 percent of the population and 50 percent of those are sleep apnea. How many people have untreated sleep apnea? If you have a person who doesn’t know they have sleep apnea and they are self-medicating or being medicated with a drug or alcohol, that suppresses your nervous system to respond to this action every night, your chances of dying go up. We see a lot of people in the 40s dying of heart failure in their sleep right now. Imagine self-medicating on top of this, the stress happening in your body, what is being suppressed to keep

you alive. Those things have to be taken into consideration when prescribing medication are people self-medicating so awareness of the effects of untreated sleep apnea. We will go into TBI.

We know with TBI there are sleep disorders and obviously cognitive problems and metabolic problems. Studies have shown that the majority of TBI are considered mild, so we were told no big deal, get back to work, you don’t have a penetrating injury, you were knocked unconscious, go right back. We were told this forever until recently and they said this was not good information. No such thing as a mild traumatic brain injury if it ruins marriages, affecting relationships and careers, causing suicides and leading to the other disorders in the body, not mild at all.

Why is this important? Suicide is a top cause of death tied to TBI. We talked about sleep disorders and suicide, I didn't go into psychological risk factors and other things, loss of mission and purpose, focus but you start stacking these things on top of each other. People who have TBI are nine times more likely to kill themselves. So the CDC, all the slides are hyperlinked but I want you to make the connection when you have a sleep disorder problem, an obesity problem, suicide problem in a cancer problem. None of those are isolated dis-fragmented conditions, they are connected to the environment and lifestyle of that person. How that load is affecting you and your body will start getting in disrepair and those check engine lights will go out in the wheels fall off. Looking at the symptoms, we see the same symptoms over and over again. If you look right down the middle where they meet, fatigue which I was diagnosed with, no clear etiology to correlate the complaints, poor memory concentration, depression, weight gain and loss and some emotional lability, not controlling your behavior, attention difficulties, that the operator send him. [Indiscernible] all the symptoms we are seeing over and over. It's because of the same type of dysfunction in the body.

I wanted to define neuroendocrine dysfunction. Veterans the injury center had a presentation online for TBI and neuroendocrine dysfunction. If you search out, you'll find the presentation. Neuroendocrine dysfunction as a sequela TBI that is compromised to some degree or to a complete degree the pituitary gland. You can have a hypofunction pituitary gland which is a master control system for the body, you can have the pituitary gland hypo functioning because of mild TBI, chronic TBI, [Indiscernible]

I got neuroendocrine on the list and will touch base on that. HPA dysfunction. Neural Betta Malik injury. What did we learn in the last years? Concussions didn't happen just from accidents or falls, it wasn't just rockets and missiles like we saw what happened in Iraq when they fired missiles. All of a sudden everyone had purple hearts. Imagine when you are downrange in the thing you fire on your shoulder, every time you shoot it it's a concussion. Imagine that sometimes 20 to 30 times a day or 40 times breaching what that is doing to you without the enemy trying to kill you. You are doing this and you're going into combat and doing it again in its continual. Looking at those things and then seeing what it means.

Typical blast wave, rapid overpressure and under and again. What is that doing in the brain? Anyone who has dropped the Pepsi on the floor and

opened that rapid overpressure. It settles back down to normal and the bubbles go away again. That's like a blast, rapid overpressure, releasing the pressure and it utilizes again. Our blood is full of gas, our body and organ systems are flowing the gases through our bodies keep us alive. Cobb urgent dioxide, oxygen and all those in the environment circulate through us. What happens if you have over five psi blowing up next to you. On the left-hand side of a hyperlink, slow-motion of me shooting a recoilless rifle in a semi-confined area but you can see the blast wave, the overpressure and see everything being pushed out away and slapping into the people that are covering their ears and hugging the wall because of the pressure of that weapon. A clear picture of what that does, that's one of hundreds of those things between training and combat. Think of that blast overpressure injury, think of 19 years of doing this and clear situational context of what these things mean.

We talked about the secondary neurotoxin indirect ATP depletion and a pop ptosis. That's a second injury of the penetrating wound, not the inflammation that happens but the secondary injury cascading effect. We talked about blast overpressure, working [Indiscernible] I had over 2400 of those charges blowup in close proximity. As an instructor you have to be there to visually inspect those and make sure no one runs up on it, so we have to be closer and when the students rotate through, we stay and get exposed every single one of those things.

Going through Nikon 2012, you can see looking at MRIs, white matter lesions. My brain MRI didn't look too horrible, it showed white matter lesions but no function. You have white matter lesions, we see everyone so it’s normal, not because you were 32 at the time and you have dead space in your brain, it was normal because they thought a lot of us doing us the same things. Navy SEALs and Army special operators, they were saying the same type of things in the population grew. It wasn't normal but guys in their 30 shouldn't have a brain of a 70-year-old. It was normal for us. I kept telling them I was learning information in a problem with that. I did battery cognitive testing, they wanted to make sure it was reliable because what they found what doesn't matching up to the way I function doing my job or speaking or articulating myself did not up to the difficulty I was having. To give you some context, when a person who is used to operating a level appeared deviated 30 points but stays above normal, they get tested and they say this guy looks normal on a test, but it wasn't normal for me, I felt like I was dragging a dead body and couldn't function.

I was getting compared to a person with a 30 hazmat. I was still in the normal range, but I operated up here and then sunk down to this level but was normal compared to the other person. There was no baseline testing on me prior, but I knew what I felt like. All those things you see cognitive impairment, learning disabilities, attention deficit, all those things where there and what I complained about they found in the neurocognitive testing.

Once I figured out how ineffective a normal MRI was in and detection of TBI, I reached out and got quantitative commuted tomography. The selected function and perfusion of blood flow and delivery of fuel to the brain and neurons. They get a clear picture and I had a Q e.g. done but they

could pinpoint in the brain where it a perfusion. It was correlated to every system symptom I was having. The hypo-function of the brain was represented in the cognitive testing and looking at the EEG layer it was showing the same thing. I will use another analogy, we never act on single source recording so I one executed target based on someone telling me something. All have signal intelligence, human intelligence and multisource reporting to look at the big picture to get some type of information to execute on. Had I just got no one MRI, no big deal white matter lesions, you have mild TBI. If I didn't use multisource tools to look at function, a lot of these things would've been overlooked, your MRI is normal. I was far from normal, what they saw on the image didn't match what they were looking at sitting in the chair in front of them. How could you have this much dysfunction in your brain and operated a certain level? We tested other operators in the same thing. Mine was halfway through my career but at the 20 year mark they look like professional football players TBI. Again, don't judge what is sitting in front of you based on what you know now, you know that environment will have an effect in you won't walk out without some type of damage.

Going back, I won't go too far in this. I had a lot of G.I. issues, everything was blowing through me, swelling, skin problems, just pain everywhere and fatigue and malaise and lack of concentration. All those things are a symptom of leaky gut. When there is inflammation in the brain then it's in the gut and vice versa. Those pathways in the lymphatic system connect together through the central nervous system. Those things were there, the brain connection, looking at people where we work had leaky gut. Both test old alterations from top to bottom so I've ulceration through my G.I. tract. I never had those issues before halfway through the career.

Looking at it, the same symptoms we look at over with operator syndrome and talking about fertility issues as well. Loss of muscle mass, the tire around the waist, metabolic syndrome and high Road stuff, dry skin, anemia, constipation, weight gain and blood pressure. Screening recommendations, cortisol and pituitary hormone function, checking negative feedback loop. For example, when someone checks testosterone, they only look at total testosterone, you're looking at a number and not a person are the symptoms or the feedback loop. Testosterone is a number, could be 900 but just because it shows 900 on the lab it doesn't Mena's doing anything. I use the Home Depot analogy, I buy paint to paint the walls in my living room. The bioavailable is a bucket in the bucket, the paint has to get out onto the walls to work so just because the number is there and you look at 900, 400 or 500 if you don’t look at the bioavailable then it’s meaningless and how it is correlating to complaints. Look at the person and listen to complaints and listen to their symptoms. Numbers mean nothing where I come from. I have to operate on Faxon operate on a clear situational understanding of the environment. I'm not reading a report, I was an Intel guy before operations, but I have to have clear understanding of the entire environment because a lot of reports are false.

I want to highlight something quick on the slide. Specifically, neuroendocrine dysfunction with a completely new term in first-time exposure probably somewhere at the second year of my residency training

and I heard it because I had interacted with Jeff and been exposed to the content outside of my normal learning. I have not heard it in formal training anywhere else, this may be a first-time exposure for a lot of you. Does everyone need to be screened? Nope. Persistent systems three months to three years after TBI exposure or compressive events, that's who you can screen. The recommended screening is below but separate from that a notable compressive event or mild TBI or TBI reported are unreported, persistent symptoms, you may care to explore that sleep apnea screening as well. There is some increasing evidence right now the VA has study networks looking at the connection between TBI and sleep apnea. If a process for three months to three years and you have a mixed pick sure, operator type syndrome picture, you may screen them for function and sleep apnea.

I don't like to use the term neuroendocrine dysfunction because it's controversial and where you are in practice. And Durkin dysfunction is a hormone imbalance. The term neuroendocrine dysfunction is tied to TBI only, but we have a lot of people who might not have TBI stuff but have those symptoms and labs. The stress, diet and nutrition, all those things affect hormone production in your nervous system. Stress, dehydration, toxins, all those things affect all that function as well, not just getting a TBI. I like to use the endocrine dysfunction term.

Is going to happen when stress goes up, hormones go down and cortisol goes up in both go down over time. Circadian rhythm. Neuroendocrine dysfunction. And Durkin dysfunction, this is me in 2014. I had those hormone imbalances when I was fully operational. In 2013 I got put on testosterone. My cortisol was between five and 12. You saw the reference range, if you're 12 or below get tested and I was constantly below 12. It took me two years to get above 12 and as soon as I went back to the environment it went back down below 12. The stress and environment has EDIFACT and every time you go into those environment those things move. You have to monitor them regularly. If you can correlate them to an environment, then they make more sense than just the biomarker testing. You have to do something, don't just look at the numbers because I can look at labs and find abnormalities, but it has to be tied to the environment what you're doing. If it's low in an environment like that it may be normal. When you check the feedback loop and let's say your pituitary hormones are low on your sex hormones are low, the feedback loop is broken. If one is high and one is low and they had Hursley work together that loop is working. That's how they check people taking testosterone and self-medicating. When their LH and LF age [Indiscernible] that the feedback loop and that's what a virus or can see. You will miss the big picture so understanding the neuroendocrine function. The same with thyroid, cortisol and the other loops that were, you have to check the entire loop. We don't have to do it all the time but if the person doesn't respond to treatments or sleeper diet and nutrition and still having those problems and you need to look further.

Timeline, there it is. Clear as day. Hopefully I can convey my lessons learned in this story to get you an understanding of context of what the problem is and what we can do with community to get the education out there and help providers understand what's walking through their door and see the big picture and not looking through that straw, reading a map

through a drinking straw. It's not our providers’ fault, if the system they are bound to. Gets fragmented and disjointed and file load. All use another analogy, prior to September 11 all of our agencies were side load, disjoined and carved [Indiscernible] they were all doing our thing and none of them or sharing what they found to put the puzzle together to get a clear picture of a pending attack that was coming. They knew there was going to be an attack, one person knew what type, they knew what month but none of them talk to each other and they didn't have a big picture. Our enemy knew the vulnerability and knew the system we were bound to and they exploited it and that's why we saw September 11. The first thing that happened after that is we created the intelligence community and unfollow those programs and made them communicate with each other and we had an understanding of our environment what was happening. That's what we’re advocating for, all of our professionals, getting them into the same room and talking together, understanding the environment and paint a clear picture and addressing it so we prevent these things from happening.

Are we surprised why these things happen? No clear etiology. I can tell you that you are already starting to have more understanding than most people would over a 20 year period when we look at our population group. We’re not a unique group when it comes to physiology, we get over exposed to the environment. Like we said, we do more professional development schooling while were home than most doing a career so in one year just because were home are not home, we are in school constantly in training for the next deployment constantly.

I want to make a comment real quick. There is an extreme benefit to understanding the exposures and impact of the canaries in the coal mined amongst the canaries in the coal mine. There is a term called the extreme files and the importance of understanding and studying extreme files. Their exposure like he elaborated on is tremendously more numerous and more frequent and more severe even than the average Joe and I know Jeffrey's Matthew asked the question of would you recommend the average Joe getting this type of testing or workup that Jeff did ask I think Jeff is an anomaly in that he had his level of awareness of environmental closure at an early point in his career to where he has been able to get and pursue these additional tests. He had the reason and motivation to get this tremendous workup so no, I don't think this level of workup is necessary for the average Joe. There is definitely some early screening and lab assessments we can talk about and we will talk about in the second half of the workshop. I wanted to address your question more specifically but also put, we are learning a lot of facts because they are extreme files. We are leaning lessons fast in those lesson will broaden our understanding of how to work with the average Joe as well as a first responder community and veteran community so the canaries in the coal mine.

I'd be happy to talk off-line later. We are implementing baseline testing and biometric monitoring so that is being implemented where I work right now so it is coming to the force eventually. The big thing as identifying the point of okay, does this affect my performance at bad that I need to look under the hood more. We want to prevent these things from happening, so we are the pre-have not rehab. We want to get the

education out front in the beginning of your career so you can make better decisions.

Looking at the operational environment picture 7000 words. Hopefully we can help you out today and we will go into our workshop and Brian can talk about what next steps look like, how to make better decisions and takeaways from this. I'll go back to the principles and operations process. Going into that understanding, that's why it's so important. Analysis and judgment, not just laboratory analysis and looking at those, it’s judgment of who's walking into your room and what they're telling you in understanding the environment what you can do to understand and visualize and lead and direct, taking the resources you have as an individual in getting the care delivery model to get these people in and get them seen and addressed, all the problems together, not sideload over a long period of time. A new way to look at things and you can be more efficient, takes a lot of time, blood money to see big picture stuff and this is why hammer the point because this is how we operate in the military. These are operational principles that we used to be the most effective and efficient fighting organization on the planet. If you apply these to medicine, you will get the same results.

That's all I got for you guys.

Let's take a brief break. I want to invite you guys to stand up and stretch to get the blood flow back to the legs. We will put a poll question up in a second but well we do that, I will elaborate, Geoff talking about making better decisions and billing ridges DeLancey in a wide variety of ways. Any domain, you can build resiliency and this is where I want to introduce another term, resiliency is a squishy term and hard to define and everyone has a different idea of what it means. I want to invite you to think about what is the opposite of resiliency. What is the polar opposite on the other end of the spec from and I would posit that we should think about it is the fragility, make decisions to build your fragility or resiliency and that can be and whatever domain. How do we become anti-fragile, how do we become more resilient? I want you to answer the poll questions here with the information that Geoff pushed out in the awareness of several jurors and exposures in the military environment, defining it for you and telling you how to think about exposures, training exposures and deployment exposures. Who else do you think would benefit from this type of orientation? Once again, this is part of our ongoing feedback throughout the workshop and we appreciate you guys informing how we can improve.

I will allow another minute or three, we will give people a little break here.

We appreciate, looks like about 16 votes on everybody, some individuals are saying operational medicine.

We can emphasize that enough. Primary care, that's where we show up with the insomnia, erectile dysfunction and 20-year-olds asking for Viagra. Resonating with a lot of the responses. Can we take a picture of that?

Definitely.

I told you in the beginning that I feel that this is content that is been reiterated and improved upon the numerous times that we of delivered this workshop to military spouses. It was done in about 2 1/2 hours work Geoff oriented them to the environmental exposures and we pair that with what's coming up next, how to think about it, look for early dysfunction, what to do about the check engine lights we start saying and the feedback from that was fantastic. We have been able to tailor this to any audience, command, leadership, medical community, we delivered it to physicians before and to international physician community at the Institute of functional medicine conference, so I appreciate those in the feedback and your guises template on the poll questions. One more minute, Amy we can stop displaying and we will get rolling. We have questions popping up for you guys, just FYI.

What do we got?

I have seen the questions in the chat box before, we address the one about should the average Joe get the same level of testing that Geoff got. We mentioned, no, there could be tiered levels of screening and the first-line tier, first year of testing is something we will touch on as we introduce early the framework of how to think about it. I want to invite everyone to pull up the clinical handout if you have not downloaded them already and put them on your desktop, get them ready because we will roll into that after telling you a story.

Was there second poll question we needed?

It's right here.

Can you put up number 3? [Indiscernible] multi symptom illness seems to overlap with the information in the presentation. Is there common cause? Well, yes. I think the one symptom numerous drivers and one condition with numerous drivers as well as one area of dysfunction with numerous diseases or areas of dysfunction, everything is tied and you have to consider the lifestyle, environment, tempo, MLS and look at the lifestyle habit and the environmental factors. We are going to highlight how you can identify some of the most prominent fact is for the person sitting in front of you. That's what it boils down to. How do we smartly use resources and try to object to fully identify areas of dysfunction that are important for the person? That's where we talk about holistic, personal life care and we idealize it but I think we have a difficult time talking about how we do and say things differently in a clinical setting and that is a big challenge that we will all be beating our heads against the wall trying to provide personalized integrated whole person care. We know it's important, how do you do something differently when we have been operating in the same system our clinical framework for a long time?

One surprising thing, we have excellent responses. Lead exposure, shooting frequently, heavy metal in the system, all heavy metals and explosives in the environment. One interesting fact is the gentleman that developed this chart that Geoff was displaying for the toxins and carcinogens ammunition, a friend of Jeff and he work in the agency.

Jim is a guy that developed that chart. He had to test all the munitions for the DOD and he started having massive problems with his health and couldn't figure it out. He did the same thing I did, applied his principles and processes and frameworks to his environment and found out he was getting exposed to all of the stuff. Lead, arsenic, mercury and all those medals and the weapon systems in the barrel and barrel linings were affecting him not only physiologically but psychologically and he blew the whistle in the DOD and said we are poisoning our troops. We need to do something better. Develop better safe munitions, weapons systems that divert away from your face in some type of mask that would lessen the effects of it and he was in development of all of that and we were making great progress but he kept getting stonewalled by the medical community. He took his own life to put himself on the cross to draw attention to the issue, he took his own life shortly after developing all of this stuff. I dedicated a lot of the work that I do outside of the military in his honor. We are working on part of the toxic exposure bill in the K2 bill going forward so I do a lot of advising and advocating for veterans and act of duty people for toxin exposure and I'll do that long after I'm out of uniform as well. That the back story on the slide with the sources of exposure. Everyone looked at lead and said the round that comes out of the gun and goes into the target, that's not where you get the majority of exposure. It's from the gases, propellants in the box primaries where the lead is. They can tolerate the humidity in the environment and barometric changes so DOD is working to develop safer munitions but like I say, don't get target fixated on lead, there are over a dozen highly toxic metals known to cause cancer. When someone comes in and you're looking at lead and not the other ones, you're not getting a clear picture of what's going on.

There were organizations for other countries that were surprised when the U.S. talk about their investigations into these exposures. They said we knew that, we knew the off gassing was bad for your health and we actually make guys wear masks and make guys wear PPE so they don't breathe again. They call it gas fever.

They have a facemask that clips into their helmet when they train in confined spaces, so they don't get gas fever which is toxic and elation. It's well known. I go back to if you know those things are in the munitions and coming out of the gun you shoot every day, you don't have to do a study to ask if those metals are toxic. They are established in literature is being toxic and human carcinogens, looking at how much you get so the damages there.

I want to capture these responses one more time. Go ahead and scroll.

We are ready to roll into the next phase of the presentation.

Excellent. Did we transition yet or can we?

We did, I saw that. If you are provider dealing with the regular Army they will say they looked at the exposures to heavy metals. Remember what I said about special operations shooting more than one day than an army shoots in an entire year. That's a fact. Thousands of rounds a day per

person, not an entire group of people. Of basic soldier qualifies once or twice a year 40 years 40 rounds, the rest is blank fire or simulated. They don't go to the range all the time. When they look at the big army and save the lead levels are nothing, they didn't consider the other forces it do it every day to a degree that they are completely oblivious to. Think about that when you get someone who works in a special mission unit telling you those problems.

Call highlight one more thing, that brings up the importance of the MLS pathway our current training or prior exposures. Think about instruct jurors, instructors [Indiscernible] his exposure exponentially went out because he was in a training world. Opportunities to better understand ongoing the exposure and talk about protective lifestyle and how they can make better decision to minimize exposure. Geoff use the analogy of getting dropped into a fire and that's an interesting one and a strong visualization. No one [Indiscernible] not everyone will get burned bad, some will get TORCH, depends on hot fire the is, how long you are in there, when you get dropped into it. It's a question of when and how much and if you know the exposures are there, then look for the dysfunction, especially if they won't be raising their hand to say help identify.

I will explain in sharing with you a story about another soldier that basically gave us permission to share his healing story as well as his story about how we got to the end of the rope. Josh is his name. You will put what you learned into context and see those exposures as I go through the story and go through the timeline. You are going to understand the soldier in the context over time and see what happens when our standard way of doing business encounters Josh and when we start basically applying our current way of doing business, our problem-based approach, what happens when we met some of these check engine light. We will share with you what happened.

This is Josh, his baseball card. He was a Special Forces weapon Sergeant, 39 years old, retired from the Army after 15 years, had deployment, with the Green Beret for five years, four years on the team. One deployment to Iraq, for to Afghanistan, he had a Purple Heart where he had exposure with the subsequent TBI injury. He had 36 months of direct combat and some overseas assignments, but he was mad at the retired honorably discharged after 15 years qualifications, airborne, Pathfinder, jump master, sniper, special forces, urban combat. These are some of the areas [Indiscernible]

Josh’s childhood and life prior to the military was extremely important from a functional medicine approach and from a personalized, integrated, holistic approach. You want to under Dan prior exposures, lifestyle, habits and also things that may be part of their identity or things they value. You want to understand that persons context. You grew up with the positive upbringing. He says the family stayed together and mom and dad were great. A lot of high sugar foods and fruit juices growing up. He had [Indiscernible] removed after antibiotic exposures so those are disrupting events. Very active in sports. He was a thrill seeker. Snowboarding, skateboarding, numerous head injuries. He mentioned he only sought care for one or two but had his bell rung more than that. ADHD was

diagnosed, not medicated but he was able to join the military in 2000. His first deployment, he was deployed to Afghanistan in 2007. After his first deployment he was in charge of Manning burn pets and putting items into the burnt pets, he noticed his health started going downhill. He was responsible for those burns and eliminating trash and waste with that use, but they saw 29 days in a row where they had contact and he fired his weapon personally 29 days in a row. Getting back from that deployment he noticed some irritable bowel syndrome, reflex, colic and Villa Neri dysfunction, chronic sinus cited. He kept going to the doctor and they kept giving him antibiotics as well as allergy medication. In 2009 he was in a qualification course for special forces and he remembers taking more than the maximal allowable dosing for Motrin, he remembers one event in particular where he described in detail. He said man, I was okay and holding on until and usually that question of when was the last time you felt well or when was the last time you remember feeling better than this? This was one of those events. There was a nighttime jump, and he was wearing 200 pounds of gear. He remembers eating in a hurry before getting on the plane and having a dairy shake before the jump. He explains it like bubble God's, he had some belly symptoms, he knew he needed the calories but felt horrible after he drank it. They did the jump and as he landed it felt like his got exploded. He remembers not being able to get up, it was because his symptoms and his abdominal pain was tremendous. They brought him to the emergency room, and he ended up getting his gallbladder removed and that nighttime jump is how it concluded. From 2009 to 2012 he had worsening God issues, on those allergy medications and still having chronic sinusitis and now sleep difficulties where he was having difficulty relaxing, he felt always on edge, he had a short fuse and was getting anger outbursts and some arthritic conditions that seem to be getting worse despite the fact that he was no longer in the fourth. Now he was in Special Forces. In 2012 he deployed to Afghanistan and this was another event that he was good until and this was another clear trigger in his past. He said well, we had ID exposure, and this got me a Purple Heart. Actually, and he explains it in detail, and you would be surprised because he said we were rolling in a heavy armored vehicle. There were a few of us and I had my helmet on and we rolled over and IED and it honestly gave the vehicle a big bump, it did not roll it out all, that's a crater in the ground where it exploded but really it lifted the vehicle and I hit my head on the top of the vehicle. We landed on all fours. He explains that after that following that episode, he had uncontrollable anxiety, depression, difficulty concentrating, memory impairment and he was not able to go home and calm down. He was getting into frequent arguments and explosive anger, putting holes in the wall and flipping tables at home and was not able to be dad or a husband. Impulse control was difficult, headaches, seem like nothing would touch them, sleep disturbances and he wasn't getting restful sleep in the G.I. symptoms were worsened. His belly was bloating and discomfort. He seemed more prone to infections, he was getting a lot of antibiotic exposure. The doctors were treating what they saw, they were treating what he was reporting to them so they were doing their job.

Just to give you an idea, these are photos. This with him in 2011 and he was still out there doing his job and catching bad guys. Once again, he was functioning as a team member and supporting team members. He explains

that he would be out there testing and performing but his belly was notably distended and he jokingly had it named. They gave him a nickname of jelly belly. He was doing his job but here he was jelly belly with the abdominal symptoms that were the only outward sign of how much he was suffering at home.

When he had the IED exposure, he got brought back and there were no more deployments, they brought him back into a training environment and I believe he was an instructor for a little while.

He was a commander in the force, [Indiscernible]

Okay, he switched units and got removed from the team and went into a training environment and God additional exposures to blast and frequent range time. He explained his symptoms got worse, constant pain, headaches, fatigue and those fits of rage and via tall moods were worse. Once again, he was not able to be a dad or husband at home. After 2014 after 12 months of P2 profile, he was being separated from his identity as well as his community. All of the symptoms were getting worse despite best medical efforts. He engaged some comprehensive total care TBI pathways I believe including what?

He went through the entire TBI pipeline and down to Tampa and went through a different prep program, so he had been through a ton of fully comprehensive diagnostic TBI centers.

That was on top of everything else as well.

This is just a brief recap of where we were at between 2012 and 2014 his diagnoses TBI, concussion, PTSD, insomnia, mood disorders, guts dysfunction with IBS and GERD, inflammatory conditions, fibromyalgia made it to the list and personality change and then some MSK issues. These are some of the diagnoses and these are some of the medications. The theme of the list of medications here seems to be anti-and basically trying to reduce inflammation, trying to reduce pain, allergy, depressive and anxiety symptoms, he has quite a list and these are all scheduled our PRN but this is definitely quite a fair dollar amount and also just a burden on him to keep them in order and keep them refilled and keep track of what to use when. We talked about the services utilized. He got a block along the way, some acupuncture, intend therapy and massage, some behavioral counseling, therapy.

Now Josh was separated from his community, he had been separated from his identity, that of a high performer and it rained barre. No longer in the military. He explains that the end of his rope, what the end of his rope look like was held up in his room, almost like upbeat dog where he would end up getting into arguments and just explosive rage with the littlest things in discussions over the dinner table. He could not have normal activities with his family at home. He had sat down to weigh out the risks and benefits of taking his own life. It got to the point where he said, it was more beneficial to my family and better for them in the long road run if I was no longer around. It took getting him ready to eat a bullet to reach out to Geoff and they got them plugged into a pathway to get care at the clinic center for functional medicine because he realized

he could not function in his family, he could not function in the community, he couldn't function in society and he was at the end of the rope.

He planned it out and did a perfect operation, like you would a military operation, on paper and researched how he was going to do it and when he was going to do it. He said if that didn't work up there, he was going to kill himself, so he was literally at the end of his rope.

In 2016 we got him connected to the clinic for functional medicine and they saw some underlying inflammation that was obvious to functional medicine. They also walk through his timeline to identify those triggers and mediators which we have displayed here. Those were things that set him up for dysfunction and disease, triggers being clear events where help routed Lee changed after the events and mediators being lifestyle, environmental or even personalized metabolic factors that kept the ball rolling in the background. He had numerous head injuries and knocked out, numerous to the count of 40 hits and four knockouts prior to military service. Then the burn exposure in 2007 during his deployment, manning the burn pits and coming back with rhinitis and infections per our diagnostic indications and then that event where he landed in he said it felt like my belly exploded, that was another trigger. He got more antibiotics after period operatively and post operatively following that event. The IEP exposure that got them the Purple Heart. He had a body on fire, brain on fire in a small bump to the head wearing his Kevlar in a armored vehicle that got him the purple star and just unraveled him. The mediators being chronic stress in the background, and manageable uncontrollable stress at least from his perspective and then self-medicating, he had alcohol use tendencies, he was trying to treat himself with whatever he knew would take away the symptoms. Polypharmacy, definitely, you saw the list of medications. Frequent antibiotic exposure from a functional medicine [Indiscernible] they have impact on your health and wellness in the immune system, neurologic, inflammatory. A high burden of off gassing toxins and overpressure events as well. Those were his list of triggers and mediators.

To address the inflammation in his brain, body and got dysfunction. We will recap what the treatment look like in the impact of it. He started off with an elimination diet to focus on minimizing and eliminating sugar from the diet. They focused on anti-inflammatory foods and adding more of those and removing inflammatory foods. Educating him to make better decisions. They did sensitivity testing to identify foods that were inflammatory to him. They pulled out the foods he was sensitive to. He said after about a month of avoiding sugars he and -- doing the anti-inflammatory food approach, he started to feel better and this is the first time things trended in the right direction for a long time. He stopped alcohol, stopped having sugar cravings and experienced weight loss where the needle is gone and the other direction the entire time. He learned more about some dietary approaches and decided he wanted to try it heated Janik diet so in doing a traditional modified ketogenic diet approach, high nutrient, high fruit and vegetable, low carbon moderate protein, he saw even more benefit and more weight loss. Cognition improved mood improved. There was some additional screening looking for neuroendocrine dysfunction because of TBI history and they identified

that and recommended hormones that his body was not given the signal to make. They got him supplemental testosterone, this was replacing what his body was not making and he stopped having rage vets, he started feeling well again, he started being able to reengage with the family and kids. He recounts one event that was so clear in his mind and listening to him describe was fantastic. He said for the first time I decided I would take my kid out on a paddleboard on the lake. He remembers coming back from doing that thinking man, before all of this I would not of been able to make it to put the board in the water without getting into an argument, putting a hole in the window and leaving the kid there. Now he was able to have that fantastic day with his kiddo and drive back and have dinner with the family. That's when he knew he was on the right path. For him, his mind collect hippity that he used for how well he was doing, that day on that month and since starting was archery. It was a mindful activity he could use to see how is his performance today mentally, can I focus, how my doing quests he engaged in some additional relaxation tech Nixon self-monitoring lifestyle data and lifestyle tracking modalities. This was his treatment plan. It was lifestyle and nutrition directed to the root cause of dysfunction relevant for him and understanding the context over time and understanding where his priorities were. The inflammation of the brain, body and guts dysfunction.

Before he started with the dietary intervention, archery was always an interest to him. 230 pounds and after two years in the dietary interventions and testosterone supplementation, here he was participating in the warrior games, doing activity on the right that involved such motor control and balance that he would have never dreamed to be able to do when he was at the end of his rope and here he is part back to the community, now part of the team and part of other birds of a feather. Really, this was his life turned around and he would say he credits the functional approach to saving his life and his wife has been basically engaging the team saying yes, 100 percent this save my husband and save our family.

As of 2018 when we presented his story, he had significant improvement in energy, motivation, mantle and motivation function. The guts symptoms had diminished tremendously but he still had room for improvement. Every now and then the rage would come back but is considerably less frequent. His mental state and cognitive function was not optimal but he knew how to work around it. Frequent reminders and apologizing to individuals ahead of time if he thought that he may forget things easily. A lot of room for improvement still but significantly better.

I would like to ask a poll question here and invite you to answer them. Have you ever seen Josh before? That would be the first one.

My own account, I see these patients at least every other day. The second poll question, thank you Amy for displaying those. If this is your first time hearing about functional medicine, we want to hear about it. If you have heard about it before and you are aware of it, then by all means we want to understand our people hearing about it at least in our audience? Where are we at?

It looks like there is something in the chat box.

I sought. For Julie?

Correct.

Yes, Julie, you are spot on. Having access to GNC, adult bases and sometimes even downrange, that provides unique opportunities there to better -- highlighting the importance of helping individuals make better decisions and educating guys on what they can do to optimize their testosterone function and androgen balance, through nutrition and lifestyle but also [Indiscernible] that the gap we need to address and take opportunities to identify what they are taking and discuss with them how we can prevent self-harm or adverse effects. It's extremely important. Separately, recently for PT DST awareness month I put out some content. There was an article that I put out through journals talking about optimizing testosterone and I think that's an opportunity for us to educate soldiers on what's important for production, transformation, sensitivity and degradation, PTSD and it was PTSD awareness month in the article was on an online journal and talked about optimizing testosterone for nutrition but asking about it and educating them. You assume they are going to engage it, a good idea. Letting them know what to stay away from and what high quality products are and what they should focus on.

Thank you for the poll questions. We are going to roll onto the next portion and we will blast through the two frameworks to introduce them and then divan a little bit more in detail later on. Let's keep rolling.

Being that this is a first time, not a first-time exposure but I will give the party line here of how we define and answer the question of what is functional medicine. Functional medicine is the clinical operating system, it's a person oriented medical approach rather than problem oriented. Rather than labeling symptoms and clinical findings and starting with the problem, this is a systematic way of understanding a person in contact over time and delivering interventions that address root cause of the dysfunction. Optimized wellness is the name of the game. With this framework and operating system, it is a way of aligning and prioritizing surfaces and resources so you can more smartly in a personalized way plug people into supporting services and additional resources. It's a framework, clinical operating system.

Is part of it, there are two questions or three that are at the core of the functional medicine approach to care. We ask what is this person not have enough of that they need to get and what does this person have too much of that we need to get rid of? It seems like simple questioning, but we train someone where to look, how to consider and how to ask those questions to come up with answers. The other question is why. I've got the condition, why? Because I have the symptoms. Why? Because I have these exposures in the background in these lifestyle and nutritional factors that are contributing to this dysfunction. Why? Continuously getting to the root of those questions of why helps us understand areas for change. Then main goal is to empower the patient to understand what they think and eat matters and changes physiology, changes the way the

body function and leads to more of the symptoms or can help unravel the conditions.

There is a heuristic at the heart of it, a go to approach. Gather information with questionnaires and questionnaires are excellent Nana an opportunity to gather information, especially historical and life event in formation, even lifestyle and nutrition information before the patient is ever in the room. You have to gather this before you get to see the patient. If you see fibromyalgia, chronic pain don't jump to conclusions. Tried to meet every patient and give them an opportunity to create trusting therapeutic relationships with you and it's hard to go do that if you don't know what you will encounter. Gather yourself and make sure you're in a receptive place to meet the patient and connect with them.

We put all of that down on tools, one is a timeline, and one is a matrix and I'll explain those more in a minute. What we are looking for in the history is triggers and mediators. One of the frameworks we will introduce will touch on how to think about what to look out for. Then modifiable lifestyle fact is, mental and emotional and spiritual factors, nutritional habits. All of those are relevant get factored into the way we organize information. Then the timeline I mentioned where we use the ~organize life events, health events and health changes over time. We use this tool to communicate back to the patient and tell them a story of how they started at point and how they met of been set up for disease or dysfunction at some point but then how they departed from health and wellness and what antecedent he's, triggers and mediators contributed to that departure from health and wellness. We also provide an optimistic view of what we can do to bring you back toward health and wellness and how we can restore it. In addition to the factors that have decremented their health we highlight the protective factors in the thing they are doing great. We want to use positive psychology and highlight the things that have been a big enough light for them amongst other life events and among things that may seem very dark and detrimental to their health. Telling the patient story back to them is a unique opportunity to establish a trusting relationship with your patient and come to an understanding of what's happening, why and how to make it better. We talked about the mediators. After we tell the patient story and talk to them about what is relevant and talk to them about opportunities to intervene and do something, we then place or we then figure out what matters to you, what do you want your health for, what is the biggest thing you can do because of your health condition and we try to connect what's important to them with where we are going to start what we are going to do. Then we initiate and we usually start pretty much always start with lifestyle and integrative approaches first and this is man to go hand in hand and supplement and augment existing standards of care. I will not treat something that needs evaluation or treatment with essential oils and will talk about that later two or three visits down the line. If you need treatment right now and need plugged into services right now, you will get out. I might give you the questionnaire and invite you to come back after things have stabilized. We would initiate some interventions that would include personalized lifestyle approaches. All explain the framework in a second. The biggest thing is to track progress over time and having a clear plan of how we will follow up, how we continue to engage in how I support you once you leave this room.

The biggest tools in the functional medicine approach to care is questionnaire, timeline and matrix. The intake questionnaire is an opportunity to gather a tremendous amount of information before you meet the patient or after your first time encounter. You resonated and felt it would be a good therapeutic relationship, I may invite them back for additional time to go through the questionnaire together. This questionnaire as part of your packet and part of the attachment on the left so make sure, I believe it's extra 02 and that's your lifestyle exposer questionnaire. Use and share it with the patience that you have a strong therapeutic relationship with, and it will give you a better understanding of their day-to-day lifestyle and environmental exposures.

The timeline, we place the triggers and mediators in life events that have happened over time. For Geoff, the significant activities over time for health events, life event and listing the triggers and mediators. The matrixes on the far right and this is how we organize the data and information we obtain through the questionnaire, the history, physical, lab and understanding the person in context over time. On the left, is the triggers and mediators listed out. On the bottom is everything lifestyle and medicine related. Sleep, physical act hippity, stress and connection so this is where lifestyle medicine where all of our modifiable lifestyle factors are listed and considered and then the top right is basically a problem list. It's a problem list organized by systems biology and system function so rather than your standard symptom based problem list, this is a functions list function list and a biology function list. It's your diagnoses, notable mansions, and areas are patterns of dysfunction you have noted. In the center of the matrix are the emotional factors. We always start by leveraging modifiable lifestyle factors on the bottom and the mental, emotional and spiritual factors in the metal. We start from a therapeutic approach, we start wherever we resonate with the patient on what is important to them and what matters to them and why they want their health, the biggest thing they can do because of their health conditions. We factor in what's important and relevant to them and where we clearly see some opportunities and priorities for dysfunction and we use them. Let me introduce this next one.

I mentioned antecedents, triggers, and mediators. I will skip this for right now, but this is where we start with the treatment approach. The clinical mnemonic community, lifestyle, integrative, nutrition, ICANN is related to motivational interviewing and negotiations in positive psychology and then aligned, identifying with the patient's priorities, values, beliefs and preferences. This emerge from the first time we delivered the workshop, and we had several functional medicine practitioners and outside [In came to help us develop the content in this emerge done this is a powerful tool. You have it as part of your handout but connect thing people took community and leveraging communities. How can you get this person better connected to people with expertise and resources or that can provide health behavior modeling or provide social support and accountability? Lifestyle is everything related to movement, sleep, stress, relaxation, rhythm, reflection, gratitude and toxin avoidance. Integrative is full person healing and healing modalities, all the ones that don't fit into lifestyle and nutrition. Acupuncture, OMT,

botanical, yoga, meditation etc. Eye movement desensitization therapy soul opportunities for modalities there. Nutrition, we always push poll real foods first. Generally a diet that resembles what our ancestors used to eat, anti-inflammatory, high nutrient, low glycemic [No audio] which the military American diet is an interesting way of talking about the dietary habits that we see with a lot of our soldiers. Slim Jim, read goals, energy drinks and GNC products. So, the mad diet as well.

I talked about the I can and aligned.

Functional medicine, once again when we consider where functional medicine fits into the military health system, thinking of some existing holistic wellness initiatives. The VA has whole health in the Army has moved to health and that was modeled directly off of the whole health initiative and we prioritize the same domains of health and wellness. We talk about personalized holistic approaches to care so 100 percent the model of functional medicine approach to care delivers the type of care that these two are deal lysing and address and consider all of the domains and factors that these models are saying are relevant.

With regard to human performance and operational focus, the holistic health and fitness model is being rolled out and that is going DHA wide. Also, the consortium for health and military performances another DHA level entity that is pushing total fitness models. This is holistic and personalized to optimize Asian and effectiveness in combat and mission effectiveness. Functional medicine operating system is a way of delivering the type of care that we idealize in these types of initiatives and programs. It's an exciting time to be part of military medicine, being of able to say and do things differently in a clinical setting.

When we talk about the DHA level chronic pain look model or step care model, functional medicine operate is to empower the patient once again with an understanding of what they do, think any matters and changes the way their body functions and helps with the self-care skills can fit beautifully at the level where self-management engages a military health system. Disempowers your patient, this is the way to deliver care that helps them take care of themselves unknown their health and well-being.

All right. We are going to take a break. I would love to bring back the two pole questions that are listed here. Feel free to click the response and take a break and we will figure out how much time we have. I think we will protect the 15 minute break. We all need a little break here. The questions, what is your comfort level discussing nutrition and lifestyle with patience as it pertains to their symptoms? 1 not being confident at all and 5 being very confident. I'm being sensitive to the audience being self-selectors, you've heard of functional medicine before and I assume you guys prioritize lifestyle and nutrition and include those in your care plans. I am seeing a lot of threes right now, some fours and some five so people are using it and incorporating lifestyle and nutrition into care and counseling. There are studies that show if you do it yourself, you're more likely to talk about it with your patience. Keep leading by example here guys.

The other question is how well does your clinical system support behavior change for your patience? One is very poorly and five is excellent. We are seeing a lot of individuals in the metal, 12 here. One thing I will mention is we do not have a description in the military health system for a health coach. The VA system does. The VA system has recently just rolled out in 2019 a description for a full health coach and getting health coach engagement which is really cool. I think the VA health system and the rollout and implementation will show us a lot of opportunities and how we might be able to enhance the care we deliver in the way we support the patients in our own system. I'm excited to see what comes from having health coaching.

When downloading the files the slides that Geoff presented do not appear to actually be in any of the downloads? Is there a way to access them? When I did the first presentation, I have not updated the version that I can email anyone if they would like it. It's the one I give at the schoolhouse. So, we will get rolling at 3:45. Great, we will take a 10 minute break. Thanks.

Thank you.

[Event is on a 10 minute break and will reconvene at 3:45 Eastern Time]

Our plan for the rest of this latter portion of the workshop will be going through the pneumonic in detail in a communication tool and education tool that we developed and have iterated and improved somewhat since its original version. We will share that with you. It is one of the handouts, handout number 4 or 3?

It is number 4.

If you guys pull out hand up 4 we will walk through that in detail so just simply have the handout. We designed the handout to basically deliver value even if we were unable to provide the lecture to help someone or the one next to them are a family member to identify what check engine lights would look like.

If I was the pneumonic here, actually if we look to the first handout though one for triggers and mediators and the STAIND pneumonic, that handout identifies some of the things included under the umbrella of the terms listed here. I will save some time and walk through it and invite you to look back at the handout later but specifically we will jump into this handout and this tool being displayed, attachment number four.

For each of these areas, each of these triggering mediated focal point, we will present information that would be the check engine light so early signs and symptoms are how you can tell something is probably wrong in this area. Then early assessment and early care or intervention, self-care. With signs and symptoms and relevant history, how can you tell if stress is an area that we need to focus on? If the patient or person is expressing controllable stress, it is overflowing and bubbling into their social interactions or professional interactions and typically it's others that are picking up on it, not necessarily themselves. Survivor guilt, injury, telling disturbing stories and act out in behavioral or

other ways, social isolation, substance use, fatigue and depression and ability to connect and have intimate romantic experiences with others. They might come to you asking to have their homelands check, they may feel that I'm dragging, and it must be testosterone, check me. That might be the first thing that brings a man, but you may need to dig deeper and it may be stress related. Girlie assessment, they can assess these at home are ways that you might be able to assess further with either standard conventional labs or functional labs, I will limit the use of functional labs but there is always ways it can be assessed further in these areas. Heart rate variability tracking and measurement, self-monitoring, and showing them ways they can evaluate these biomarkers over time. Things like garment devices, rings, things like heart maps, and app and technology that plugs into your smart phone and you can get heart rate variability and biofeedback at home on your own. Those are tools in the toolbox to assess stress burden and see how either fight or flight our rest and relax mode someone is. HRV is an indirect marker of parasympathetic tone peak HRV tools. Cortisol, looking at rhythms, functional medicine lab assessments but I have not used it in my patients. It is not part of our standard lab profiling. I have not ordered it so I can speak from experience there.

Hormonal testing, you can look at the full picked tour of everything that is related to downstream metabolism or upstream. Three months to three years post TBI event being appropriate to look for some neuroendocrine dysfunction. Sleep tracking, we know stress and sleep go hand in hand and chronic sleep deprivation and insomnia can contribute to a lower threshold for stress and tolerance. It's a good idea to assess that as well.

Self-care, rolling into what they can do for themselves or how they can ask for help and where they should ask for help first. Having a no lakes plan in place. A lot of individuals if they experience a life altering event tomorrow, like losing your legs or something like that, what would life after an event like that look like? How would you get back on your feet? What is a group of people or resources you would reach out to help get you back on your feet? What are steps you can take to start putting a plan into action? How can you start today to mitigate worst case scenario, having your no lakes plan in place? Rather than goal setting, this is an exec looking at tomorrow and working backwards from that. How what the fallout look like? Who could help me get back on my feet? What are steps I can take today that would minimize the fallout from that happening? Regular practice reflection, routine and rhythm, sleep optimization, social connect to Betty and volunteering or mentorship are acts of kindness. There are resources and services at your fingertips in your local health system so be aware of those. Once again, I refer you back to the clinical treatment approach handout. We also added a handout for recommendations from a prior workshop we did where people identified the best community resources, integrative and nutritional resources so there is a handout related to some of those. Engage local services and put patients into those in patients can ask for local services if you identify what they are.

Moving on to sleep. We have got them usually reporting I do not sleep well, it is not restful, I wake up a lot throughout the night, I can't

sleep more than three hours or two hours at a time, outward signs and dark circles, irritability, anger, short fuse, self-medicating with stimulants, low sex drive affects your ability to produce and balance hormones so erectile dysfunction and difficulty with arousal, sweet and fat craving it's what you want. Early assessment, wearable tracking, Geoff has some of those. Getting a sleep study done, they can be done for a wide variety of disorders, so it doesn't have to be just obstructive sleep apnea. It can be insomnia or a sleep apnea risk but may be a bit of a lower threshold to get them evaluated. Make sure it's medic he indicated though. CPAP tracking, there is data available for everyone to see how often they use it, evaluation for other things that would lead to non-restful sleep like restless legs or TMJ or teeth grinding. Look at their teeth look straight and do the top teeth fit perfectly with the bottom teeth when they grind it back and forth. Little things like that. Maybe all they need is a mouthpiece or an evaluation with lab work or medication to address restless leg syndrome.

Self-care. Trying to maintain routine even on the weekends. The same cycle helps the body balance and figure out where it needs to balance hormones and chemicals. Health coaching and sleep hygiene, you got integrated behavioral health clinicians, you have health resources, you have health educators, all types of resources and opportunities to help out there. Magnesium and melatonin can be tried out ahead of time one or two hours before bedtime to help the one line down in addition to the other sleep hygiene things. Alpha stim, Ewing biofeedback to calm down and increase the parasympathetic tone and local services and resources.

We do not currently test much outside of something like deficiency. If we did, I would move to evaluate and try to understand someone's detox methylation and genetic snaps. They change the way someone can clear toxins and whether we need to nutritionally or through lifestyle do something different to support these individuals. So familial history, strong sibling history and with methylation snaps we tend to see higher risk and more prevalence in the family members of cancers, clot and that can even be in the form of miscarriage for some of those methylation defects. Heart attacks and strokes or risks are increased with methylation individuals. Dementia [Indiscernible] those individuals at that higher risk of developing heart attacks and strokes as well as dimension and you can mitigate that by reducing dietary affects so their lipid disorders can be mitigated with dietary strategies. Chemical sensitivities and medication reactions tend to be high with detox in individuals with detoxification pathway impairment. Being aware of it and seeing these patterns allows you to do things slightly differently. You can support detox pathways and make sure they are work optimally, make sure they urinate, poop then exert yourself and sweat regularly. Little things like that. Early assessment. You can get testing for these. Some of it can be through alternate routes. You have people getting on traditional data collection on their own. You get access to the rod data. There are companies that can interpret. One is genetic Jeannie.com and that is a donation based platform and they take 23 and me rod data and put it to a profile to read your detoxification and at the stoplight reporting in your methylation, the raw data and plug it in and the third-party displays your information and asks for a donation because legal Lee [Indiscernible]

I have two for methylation and I explained a couple of things that did not get into my medical history and the adverse reaction of methyl and certain things I couldn't tolerate because of those pathways being inhibited.

We can get some labs that the new area of focus. Self-care, lifestyle and nutrition. Nutrition supports pathways, good fiber intake making sure elimination habits are optimal. You can provide nutritional support for methylation. If they have certain things you can give them [Indiscernible] instead of B12 supplementation but there is more supplementation that maybe we needed. Things like Sammy, I won't get into that, that's available in advanced training pathways. If they are having a high familial risk of early cardiovascular disease or strokes or dimension, then they may want to understand their genetics and at their low dietary fat to help mitigate that as well as lifestyle and nutrition. Toxin avoidance and personalized medication planning.

Trauma, we talked about that. They are at higher risk so MLS or habits so hard these outside of their line of work in stroke tourers are shoot house activities, especially of frequent, explosives. If their job is a motor man or a tanker you may want to understand how much they get that exposure irritability, anger. We saw the symptoms that overlap with sleep deprivation, TBI and toxin exposure. It's that whole picture. We talked about functional brain assessment. How do you quantify brain function? We talked about the brain blood flow and imaging. That's one way but functional brain imaging their options and opportunities there. Neuropsych test and vestibular testing and Evo TEG.

PROTECT THE BRAIN NEURONS. DOES THAT FIRE WITH SOME nutritional strategies and health effects. So sleep optimization. There's some dietary strategies that involve high-dose therapeutic doses of omega-3 fats and a specific term you can look into, omega-3 protocol for brain injury. Something that has evidence around supporting neuronal regrowth or regeneration. Post TBI. Neural feedback, e.g. Biofeedback. Parasympathetic tone and sleep optimization creates an opportunity for brain healing. There is some emerging and growing evidence even with legislations that indicate the enjoyment of PTSD.

Talk about airborne hazards we talked about munitions exposure. There's a wide variety of daily toxins that we expose our bodies to. There's some interesting studies about female hygiene and makeup products and the number of chemicals the average American exposes herself to before even walking out the front door. Any opportunity to find patterns of hobbies or occupational exposures that increase the risk of exposure that's extremely important. Metabolic and hormonal dysfunction. Or early metabolic. Early assessment. Deep dive. Take a look. Are you living in a Superfund site Camp Lejeune at some exposures? Heavy metal testing. There's blood and urine testing that need to be done within a certain timely exposure to understand true exposure. We don't advocate or provoke testing until you establish that there's no leaky gut or grain. It will lead to more problems or kidney damage. Heavy metal testing by the time of exposure. Phone lead imaging. To pursue and medically justified. Looking for total body burden for prolonged lifetime exposure. Self-care.

Minimize exposure. Stop ongoing unnecessary exposure and mitigate exposure that's mandatory. Things like hygiene or changing out your clothes at the range to wiping down your hands with lead wipes. Putting your clothes from the range in trash bags and washing it separately. Those arrested mitigate your own exposure and exposure to make sure it's working optimally. Making sure you have regular bowel movements. Take binding agents and things like chlorella. Seaweed snacks. Things like that will help to bind and pull out. Tablets. Long-term medication use and exposure. Early assessment evaluates and take a deep dive for medication exposure. Medical pharmacist can do this with you or for you. Then that's a part of the function medicine. For metabolic imbalance and function, antimalarial and antibiotic but we use are definitely a part of that picture. So, you can mitigate microbiota with things like probiotics taken concurrently for dose of 10 billion see if you per day. There's some evidence around diverse sources not naming different brands of probiotics but taking concurrent probiotics with antibiotics for a short duration afterwards. Ticket with prebiotic foods done this with a few individuals and if they had some myalgias that they thought were related then we need to do a supervised declined period of time where they would do without and then we talk about it afterwards. Immune support. Pain. They've got some integrated modalities and other ways of treating the conditions outside of medications. There's these things that people know and trigger them. To diaries and exposure diaries can help identify triggers allergies are different than sensitivities or different it's mediated whereas sensitivity on mute systems have begun to target something in the form of IgG. And it's keyed up for delayed symptoms. Is a continuous source of information background. Talking about food logs and symptom logs. There's some testing you can do. I want to highlight here that environmental allergen testing can Q you want to cross-reactive foods. So asking you to Google the term environmental allergy, food allergy and cross-reactivity. If you're allergic to grasses, you would react over here.

So self-care. The easiest gold standard way of identifying food sensitivity is pulling it out of your diet for a defined period of time and then reintroducing it to see if you have systems. You can do testing even without doing that I think the highest value is going to be pulling something out of your diet doing hundred percent for at least 30 to 60 days. You need to reintroduce it after that period of time and see if those symptoms return. Eliminate inflammatory foods. We talked about probiotics and probiotics. There's some nutritional strategies to modulate the immune system to make it more tolerant rather than sensitive. So basically, you can change the way your T cells mature. Can help them differentiate to reg cells so just say like stop overacting. Some of that vitamin D and fish oil. 2 and low-sodium. There's a whole other discussion there. Nutritional immuno modulation. Sleep optimization and stress reduction. Focus on digestion and fixing the gut. Highlighting things like vitiligo. Celiac. Fiber dysfunction. A rapid onset of adult diabetes. This we know has some autoimmune conditions that lead to that process. So strong family risk factors for history. And you can have one condition set you up for other conditions in the functional approach to care. The way we pick about this is genetics loads the gun. Environment pulls the trigger. But the mediator shows whether the pulls the trigger or not. Leaky gut. So, keeping an emphasis on healthy got

function and help the integrity of gut barriers becomes extremely important when talking about an autoimmune patient, a patient with those conditions. Integrity becomes an important part of the focus. There's additional testing that we can do and self-care skills, ways of identifying huge sensitivities got dysfunction. Address that first and those are opportunities to reduce continued triggers that might be keying the immune system up further to attack cell tissues. So think about viral parasitic fungal infections. These are all things that were talking about here. All these viruses. You can get information like this from the history and health events and life events look for unexplained symptoms otherwise. This could be one of those higher tier level assessments. There's some nutritional strategies for treating anti-candida diet is a part of that. There's treating of any viral illness or self-infection that you identify. If there's any intestinal parasitic there's a mold elimination and those can be helpful around mold exposure alcohol, tobacco, it can be the GNC usage. They set them up these types of behaviors and then self-medicating. Sometimes gets signs of a deeper issue. They can look to others in their community and ask for help. Discussing concerns with others. Ask for assistance. When they do, pointing them in the right direction is extremely important.

Trying to explain here when word near the end. So, we know obesity would be an outward sign of nutritional access is. It's not always that clear that deficiencies, nutritional and physical exams is something we get additional training and for pathways. Looking at oral regions and peaks. Any patterns of nutritional deficiencies or excesses. You can find zinc deficiencies or calcium deficiencies. You can find skin quality and dryness, some of the keratosis Polaris quality of nail. Tong. It's all a tremendous amount of information. This physical exam is something I will reference. I won't dive deep into it, but organic testing is a test that I've never ordered from a patient. We don't have access, but it is for lab testing and standards. A way of evaluating it is a deeper dive into tiered lab testing, self-care for nutrition. These are just general guidance on what a healthy diet might look like but, this is not for everybody. Recently there's been more excitement around an investigation for modifying when people eat, rather than what they eat. Things like intermittent fasting and strategies. In general, this is what a healthy diet might look like. Whole food and plant-based options. Foods that are higher in certain nutrients that help to balance and manage hormones.

Digestion. With this there's ways of assessing it but I will focus on ways of optimizing digestion. Ways of optimizing pancreatic function and pretense prior to a meal. Bidders. Apple cider vinegar. Taking a small's tuneful of that will increase your pancreas's ability to excrete digestive juices and enzymes. Changes the way the pancreas responds to the carbohydrates in that meal. Another one is the sesame seed test. Basically, take some sesame seeds and see how long it takes to come out the other end. If it takes a longer time, you're going to need more hydration. Biosis. Either not enough good guys, hello diversity of good guys in the micro biome or good guys hanging out in the wrong neighborhood if there's got symptoms we might be talking about how we can address like good guys in the wrong place or dealing with antibiotic exposures to take for six to time nine months. You can treat it with prebiotic foods. We had our crash course let's get through the

content where at 1624 and we should be into day in the life handout which I will blast through in just a little bit. Any comments or questions?

Cleveland clinic or Mayo Clinic pick some of those big clinics are doing testing.

China overseas 23 and Me so DOD employees aren't able to use it.

And the same with tick-tock for anybody out there. Don't use tick-tock and don't use 23 and Me.

How are you accommodating known effects that a prescription agent might require a profile pic?

Not relying heavily on them would be step number one. Educating the patient about USP or NSF seals of approval and evaluation for consumer lab.com. And champ. On the website they have guidance on how to make smart choices about nutritional supplementation and when it's indicated. And looking at it the same way we talk to them about general medications there should be a defined start and stop point and discussion around what poor tolerance might look like. Discussion about risks and alternatives the same way you approach medications there's some general guidance for smart supplementations.

Right now, it looks like there's a few people who said way too much and way too fast and people said just right for an introduction. Feel free to stand up, shake it off. Many of the agents you mentioned have anti-platelet activities.

So once again. Make friends with your clinical pharmacist. Relying on whole foods first and limiting to things like vitamin D supplementation. Magnesium tends to be something that's low for a lot of individuals. A strong emphasis on testing. These strategies can mitigate this risk factors so be mindful of how much you use. And what you recommend. Is people will go looking for it so give them information to make better choices. This tool that I will direct your attention to. And just doing and overview to avoid the too much too fast. My wife said you spent all of this time and energy coming up with the communication tool and it looks cool and nice but, so what does right look like if all I wanted to know was what I could do each day. What to better decisions look like. What would look like if I made better decisions? That's where we came up with the other tool and handout. A day in the life. Handout number 5. So please browse through it as I cover. Let me invite you to do this on your own. I want to make myself available for the reach out afterwards but that would basically be what you can do through daily routine and rhythm. Ways to increase resiliency. Building anti-fragility in the setting and the deployed setting. This is a starting point. The conversation starter and checkbox around things that can be done to build resiliency. Do think it would've been helpful to do this instead of the crash course run through on drinking to the firehose. Understanding what they would value higher. Is it more helpful to review a day in the life handout compared rather than stained tool?

You’re walking away with the value of the handouts and again it's a starting place and a conversation starter. So, a day in the life we can address and talk about off-line. Knowing that it's there that is valuable. How do I do things day in and day out that make me more resilient and unbreakable? So where rolling into some role-play scenarios. Part of our objective was to help you become a little more confident about how to incorporate some of this new knowledge into a clinical conversation. We've arranged for two scenarios and we can roll right into them. But were going to get in screen here so you can see and get a sense of what these conversations might look like. So, when we engage here, we’d love to ask you some comments going to pull right into it.

I'm being vulnerable on purpose inviting you in but we appreciate your comments and feedback. Sounds like you're dealing with a lot of different symptoms did you notice the type of connection between is a couple of strategies to land on just steps we can talk about it think we can focus on information. I give you a few marching orders and we can try this out. Will put this in front of my nutritional specialists and ask them to assist. Going to ask you to touch base with me virtually and we can talk. I will see you back in two weeks then we can figure out how to go from there. In the meantime, take this questionnaire it helps me to better understand what you do day in and day out and maybe pick up some other areas that we might need to work on like sleep. How is your sleep going? With regards to the full picture of what’s creating the information, definitely want to dive into that so here's the questionnaire let's planned on a few first steps for anti-inflammatory nutritional stuff and how to cool off that immune system that's stressed right now. Will come up with a plan and engage in nutrition along the way then we can go through this questionnaire together. I do want to start with step number one before we get into general testing but we can do some stool tests to see if you picked up any travelers you didn't intend to bring back. Let me explain the intent behind that scenario. Some patients come back with a more of a straightforward picture of I was on a certain period. There was an intestinal illness.

Geoff referenced this but you through the curveball in which were mitochondrial toxins previously being used as antimalarial spirit guys will have exposure to that. We have guys with 14 deployments taking antimalarial for 6 to 9 months at a time. I didn't have to take the cocktail like I normally did but I drank the contaminated water and Mike got it was all torn up. I never got asked about water with the food. All it was take this trial is set you've got Gerd and then we can figure it out from there. I had to force them to do an infectious disease screen. So, known exposure. Doesn't check until a year later. So, with training to the front line and education, they can have more well-informed conversations maybe you picked up a parasite these symptoms might be relatively benign. Something that can be justified. The one that we developed over the last few years is the lifestyle question and exposer questionnaire that's attached in your handout. On to snarl number two.

When is the last time you felt well?

About six years ago. [Indiscernible - Multiple Speakers]

Take a few steps back and help me understand some things you think are contributing to this.

Thanks for bringing this up and raising your hand to say you'd like some help with this. Have you sought help in the past?

Just talk amongst each other. I just like to get to the root of this to see what's going on.

We can definitely look for some organic reasons that might be going on from a hormonal or menopause standpoint. It sounds like you've already identified a few clear contributors some things that are within your control and some things are likely outside of your control so let's focus on what's in your control. With regards to home life and what you do to blow off steam.

Shooting. I do my own ammo but that's probably not help testing for me. Because I spend a lot of time of the range after work.

Okay so if you're ready for a plan I work with you on a few things. We've got some fantastic resources at the center. There's a high-speed piece of equipment that does biofeedback. Plugs you in. You where sensor and tells you if your flight or flight whatever state you're in and also it can tell you how good you are at hidden break pedal. This biofeedback basically gives you and in direct measure of your body relaxed. [Indiscernible] [Indiscernible - Multiple Speakers] we can talk about medication that something want to incorporate but if things are relatively manageable right now and by all means this is huge. They give you an objective reading and some real time numbers. They ask you to do whatever it is you do to relax so you'll actually actively relaxed and if the number is in moving the way you'd like they'll offer you another tool if that doesn't work, they say try this instead so before you leave there you leave with the tool in your toolbox. Something that moves the needle so when you’re in the thick of it when you feel like you're about to explode. This is something that you can revert back to you and thanks man, when I do this it's the brake pedal. That we can go over there's a few practices here I want to work with you on. Ways to reduce your ongoing exposure to make sure your body is getting rid of everything as much as possible. Bringing some of that exposure home and sharing it with family. Will focus on that with you and give you some clear steps.

In our last few minutes of comments anything we've got here then we will go into a summary.

There's no medical support whatsoever when we go there, we are flapping. Afghanistan and Iraq has robust resources more freedom of movement for medical condition. Africa is a very unforgiving environment and more strict than what you can and cannot do. Thanks for these comments. But my NCF if it doesn't fall under behavioral health at Fort Bragg it's a separate entity and the altar records are visible for us. We still got that for the Genesis rollout location. A standalone resource and service that's reachable. They provide a suite of services walk-in or referral. So one more thing to highlight the attachments. The extra 01 military

resources. This is a resource that the first time we delivered the workshop we had for breakout groups the attendees and basically, they identified best practices and services and resources for community intervention. Integrative interventions. So were showing that with you in the handout extra 01. We added a few comments on that in a few resources. So that is available for you.

We're sharing that with you. Feel free to reach out were looking for adding to that resource and usually one exercise we do with the impression website is to assign people to pull together the best practices and resources.

Okay. So, summing up a few big key takeaways is that? Is but when and how much. Talked about the requirements and exposures and it being rather inevitable. But opportunities to make better decisions to minimize and mitigate exposures. Anyone can identify check engine lights. The person themselves or the person to the left and right of them. If they understand some of that stained framework that's a way of bringing to you share what you've learned, we appreciate everybody's time. Going to be doing this green suiting education teaching members in my community.

Will be happy to facilitate so thanks for taking the time to listen I know that was a lot of material and I appreciate it. Hopefully will see you tomorrow for some of our other workshops. I'll see you guys again. It was a wonderful presentation we look forward to seeing you all again. Have a great evening.