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MENTAL HEALTH RESEARCH

HEARING

BEFORE THE

SUBCOMMITTEE ON MILITARY PERSONNEL

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

HEARING HELD
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MENTAL HEALTH RESEARCH

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON MILITARY PERSONNEL,
Washington, DC, Wednesday, April 10, 2013.

The subcommittee met, pursuant to call, at 3:47 p.m., in room 2118, Rayburn House Office Building, Hon. Joe Wilson (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. JOE WILSON, A REPRESENTATIVE FROM SOUTH CAROLINA, CHAIRMAN, SUBCOMMITTEE ON MILITARY PERSONNEL

Mr. WILSON. Good afternoon. And, ladies and gentlemen, thank you for attending a meeting of the Military Personnel Subcommittee Hearing on Mental Health Research—very important to the military and the young people who make possible for us to have the freedoms to be here today.

Today the subcommittee will hear testimony on the research conducted by the Department of Defense and the military services to address deployment-related psychological health needs of service members particularly traumatic brain injury, TBI, and post-traumatic stress disorder, PTSD.

Before I begin I would like to thank Ranking Member Susan Davis from California for suggesting that we hold this hearing. I would also like to recognize her leadership in this role while both—when she was chairwoman of the committee and now as ranking member.

Today, we continue to address the signature wounds of the wars in Iraq and Afghanistan, PTSD and TBI. Our unwavering commitment is to our service members who are experiencing the challenge of multiple deployments.

Collectively, the Department of Defense and in particular the leaders of the military health system who appear before us today have done tremendous work responding to the mental health needs of our service members and families. This has not been an easy task. I want to thank you for your efforts.

Since 2007, Congress has appropriated close to $1.5 billion for scientific and clinical research for the Department to improve the prevention, screening, diagnosis, and treatment of PTSD and TBI.

This investment has funded nearly 1,000 studies in collaboration with Federal, academic, and public/private partnerships. How have these studies increased the understanding of these conditions and how has this new knowledge translated into more effective methods of preventing and treating TBI and PTSD?

I am also anxious to hear about the future of these research efforts. How has sequestration and the Continuing Resolution affected both ongoing studies and those that are yet to be begun? We must not lose the momentum we have gained through this research.

We must continue to build on the hard work that has already been done to fill in any remaining gaps in scientific knowledge. I am committed to supporting the Department of Defense's goal to prevent and treat these devastating conditions. Our service members deserve no less.

With that, I want to welcome our witnesses and I look forward to their testimony.

Before I would introduce our panel, let me offer Congresswoman Susan Davis of San Diego an opportunity to make her opening remarks.

[The prepared statement of Mr. Wilson can be found in the Appendix on page 31.]

STATEMENT OF HON. SUSAN A. DAVIS, A REPRESENTATIVE FROM CALIFORNIA, RANKING MEMBER, SUBCOMMITTEE ON MILITARY PERSONNEL

Mrs. DAVIS. Thank you. Thank you, Mr. Chairman. Let me join you in welcoming our witnesses.

Dr. Woodson, General Horoho and Admiral Nathan, we want to welcome you back.

General Travis, I understand that this will be your first testimony, and we certainly welcome you as well.

Commander Carr, thank you for coming to testify and to share your expertise as a clinician with the subcommittee.

We appreciate your service to the Nation, all of you, to our Nation, and appreciate your being here.

Mr. Chairman, I want to thank you as well for your interest and for holding this hearing on mental health research.

Over the past decade, the press has continued to characterize post-traumatic stress disorder and traumatic brain injuries as the signature wounds of the current conflicts. And I prefer to mention PTSD as PTS, post-traumatic stress, because I think what we know about that is not necessarily a disorder—obviously, some normal activity in many, many ways, a normal response to the situation that people find themselves in, but one of course that we must work with and we must work with it as it reflects the way in which it is amplified in the people who suffer from it.

As a result of over the last several years Congress has responded by increasing the resources and the requirements for mental health prevention, treatment, and research.

And what is important is that members of this subcommittee I believe understand where the mental health research is today and how we should move forward in the area of mental health especially given the fact that increasing fiscal constraints of the Department will be felt over time.

As PTS and TBI begin to emerge as prominent injuries from the conflicts in Afghanistan and Iraq and stories of service members facing difficulty to obtain appropriate care begin to increase, Con-

gress began its efforts to push the Services and the Department of Defense to be more proactive in this area.

And efforts by Congress to address the issues that were being raised began back in 2004 actually when the Secretary of Defense was directed to conduct a study of the mental health services available to service members at that time.

Since then, Congress has imposed a number of requirements, a number of policies and programs in an effort to improve the prevention, the treatment, and the research of PTS and TBI.

Congressional action also included providing nearly $2 billion in funding for PTS- and TBI-related research. To date, the DOD [Department of Defense] has invested over $710 million in over 500 research projects related to the prevention, screening, diagnose, and treatment of TBI.

More than $717 million has been provided for over 400 research project relations to the research of psychological health of service members including PTS, suicide prevention, military substance abuse resilience, prevention of violence within the military, and family related research.

I certainly understand that science and research, particularly treatment research and pharmaceutical development, takes a significant amount of time before we can see concrete results. I think we all understand that. But it has been nearly 6 years since we began to significantly increase the funding that has been provided specifically for mental health research.

It would help members to better understand how that money has been used. What, if any, are the results that have come from the research? Where are the potential breakthroughs? What areas in fact may not be as productive, what gaps may exist that should be addressed, and how should we begin to prioritize the demands that continue to grow in this area?

I look forward to your testimony to hear from all of you especially on where we need to focus our attention to complement the ongoing activities of mental health research, prevention, and treatment.

As the budget continues to shrink, of course greater pressure to reduce research and development funding will grow, and we need to ensure that our limited resources are being used in the most efficient manner.

Thank you, Mr. Chairman, for the hearing today.

Mr. WILSON. Thank you, Mrs. Davis.

Even before we begin I would like to also welcome, additional members of Congress here because what you are doing and what you are saying is so important. And we have Congressman Bill Young who has been chairman of the House Appropriations Committee and as a veteran himself, a champion on behalf of service members and he is backed up by an extraordinary lady, his wife, Beverly, who is here today. And if you ever wonder where she is coming from, it says "Support the Troops," and she means it, and she does. So both of you, thank you for being here.

Additionally, we have Congressman Tim Murphy. Tim is actually a member of the Navy Reserve and he, with his medical background, has just been such a resource for all of us in Congress. So

Congressman Murphy of Pennsylvania, thank you for being here today, too.

We are joined today by an outstanding panel. Given the size of our panel, the desire to give each witness the opportunity to present his or her testimony, each member an opportunity to question the witnesses, I would respectfully remind the witnesses to summarize, to the greatest extent possible, the high points of your written testimony in 3 minutes.

I assure you your written comments and statements will be made part of the record. Let me welcome the panel.

A longtime person who we can count on to be at virtually every hearing, Dr. Jonathan Woodson, the Assistant Secretary of Defense for Health Affairs, Department of Defense.

I would like to welcome Lieutenant General Patricia D. Horoho, U.S. Army, the Surgeon General of the U.S. Army, United States Army.

And we have Vice Admiral Matthew L. Nathan, who I am just so grateful, the Medical Corps, United States Navy, the Surgeon General, United States Navy.

Additionally, we have Lieutenant General Thomas W. Travis, U.S. Air Force, the Surgeon General and of the U.S. Air Force. This is his first appearance. I want to welcome you.

I also appreciate that we have a shared Virginia heritage and also as a graduate of Uniformed Services University of Health Sciences, I have a son who is a fellow graduate and I know what a great institution that is.

Commander Russell B. Carr, M.D., United States Navy Service Chief, the Adult Behavioral Health Clinic of Walter Reed National Military Medical Center, U.S. Navy.

So thank all of you for being here today. We will begin with Dr. Woodson and proceed, and again, thank all of you for being here.

STATEMENT OF DR. JONATHAN WOODSON, ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS, U.S. DEPARTMENT OF DEFENSE

Dr. WOODSON. Chairman Wilson, Ranking Member Davis, distinguished members of the committee, thank you for the opportunity to be here today.

Our Armed Forces have been engaged in combat operations for over 11 years. Our service members have performed selflessly and courageously. Their experiences have been unique in the history of warfare.

They have survived injuries that 15 to 20 years ago would not be survivable and while this survivability rate is a reflection of our investments in medical research, it also brings with it new challenges in recovery and reintegration. They have returned to the war zones on multiple deployments placing exceptional stressors on their lives and on those of their families.

While our investments in medical research are focused on both the visible and invisible wounds of war, today I will focus mainly on our research efforts surrounding the invisible wounds, TBI, PTSD, depression, and other mental illnesses and suicidal thoughts and behaviors.

Our research extends through a broad spectrum of activities. Foundational science, epidemiology, and ideology, how we can better prevent these illnesses and injuries, when someone is injured or ill how we can more rapidly and accurately diagnose their condition, when we have identified their condition how we can most effectively treat the individuals, how we can improve the opportunities for in the timeliness of recovery and recuperation including follow-up care and services research, and what the long-term needs of our wounded, ill, and injured will be in the decades ahead.

In many cases over the past decade, we have been able to rapidly transfer our research findings to practical applications on the field, yet it is always—as is always, in the case of science, there are gaps that remain particularly in the neural and behavioral sciences.

I will not cite each study we have under way today, but I will make several points about the nature of our research. First, the Department is not doing this work alone. We are working closely with our colleagues in the Department of Veterans Affairs, the Department of Health and Human Services to include the National Institutes of Health, the Center for Disease Control and Prevention, the Substance Abuse and Mental Health Services Administration, and we have engaged the Department of Education. In addition, we have extensive collaborative efforts with private and public universities in industry.

Second, we also are effectively leveraging the impressive scientific capabilities of our partner organizations by sharing clinical data that will benefit not just our service members but all Americans.

For instance, the DOD, NIH [National Institutes of Health] Federal TBI Research Informatics System links TBI clinical research from the Department of Defense, VA [Department of Veterans Affairs], and NIH. In addition to the tremendous value it provides, shared data repositories decrease costs of research of standardized collection of research data and allow access for researchers outside of the original study creating opportunities for faster advancement in science through collaboration.

Finally, we are intently focused on continuing to move from our research from the laboratory to the bench, from the bench to the bedside, of those who are ill and injured by more aggressively managing the portfolio of research, reducing the duplication and closing gaps by rigorous joint program and interagency scientific reviews.

Scientific understanding and progress does not occur overnight as has been noted, yet we all recognize the urgency surrounding the work that we do. I want to express my great appreciation to this committee for the longstanding support and advocacy for our medical research agenda. It has made a difference in lives saved, in the prevention of illness and injury, and in the acceleration of recovery for so many of our service members.

With your continued support and engagement, I am confident that we will continue to make progress in this important work and meet both our medical and moral obligation to those who have served and sacrificed. Thank you for the opportunity to speak to you today on these important matters, and I look forward to your questions.

[The prepared statement of Dr. Woodson can be found in the Appendix on page 32.]

Mr. WILSON. Thank you very much, Mr. Secretary.

General Horoho.

STATEMENT OF LTG PATRICIA D. HOROHO, USA, SURGEON GENERAL, U.S. ARMY

General HOROHO. Thank you, sir.

Chairman Wilson, Ranking Member Davis, and distinguished members of the subcommittee, thank you for the opportunity to appear to you today to discuss the Army's mental health research initiatives and to highlight the incredible work of dedicated men and women with which I have the honor to serve with.

I would like to begin today with a story which illustrates the miracles which are possible from the investment in research and medical innovation.

On June 2, 2009, during Staff Sergeant Paul Roberts' deployment to Afghanistan his unit was performing a combat patrol when his vehicle was hit with an improvised explosive device. The impact of the IED [improvised explosive device] destroyed the vehicle, killed the driver, the gunner, and the interpreter.

Staff Sergeant Roberts was the only survivor. He sustained severe injuries from the explosion including third-degree burns to his wrists and legs, second-degree burns to his arms and face, and traumatic brain injury.

Due to the tremendous research investments made in combat trauma, psychological health, and TBI, Staff Sergeant Roberts recovered from both his visible and invisible wounds. He was medically retired and has successfully transitioned from military to civilian life.

His survival and recovery from these horrific injuries and successful transition to the civilian life is a direct result of the fruit borne by years of medical research.

Traumatic brain injury and post-traumatic stress and post-traumatic stress disorder have been characterized in the public as the signature wounds of Operation Enduring Freedom and Operation Iraqi Freedom.

From 2001 to 2006, funding for research and psychological health, traumatic brain injury, and suicides totaled $83 million. As the impact of the invisible wounds of the war became increasingly evident, Congress significantly increased funding for critical research, and as was stated earlier, a total of $1.4 billion of research and over 900 research projects have been supported over the last several years.

And I would like to highlight a few of the policies and programs which were guided by the past decade's medical research efforts. TBI research findings have directly affected policy and changed the way the military acute concussion evaluation is used and administered in the deployment environment which has resulted in a 98-percent return-to-duty rate.

The immediate goal in TBI diagnostics have been able to identify the unique biological effects of TBI. We are working on a capability for medics in austere combat environments to administer a simple test to detect TBI.

Similar to our approach to concussive injuries, Army medicine has harvested research findings to inform the identification in the treatment of combat stress and PTSD. The mental health advisory team examinations of in-theater behavioral health issues have impacted policy, improved distribution of mental health resources and services throughout theater, and modified the doctrine of our combat operational stress teams.

Research has informed the development of new clinical practice guidelines. Army medicine has developed the embedded behavior health program to put care where the soldiers are. Embedded behavior health moves behavior health personnel out of our large hospitals, forms them into teams, and places them in smaller clinics much closer to where the soldiers live.

This creates working relationships between behavior health providers and unit leaders to better understand the specific challenges soldiers face and then tailors their clinical services to serve them. This care model has demonstrated significant reductions in key behavior health measures while knocking down access barriers and stigma.

Military medicine is at an important crossroads. We owe it to this generation of our soldiers and our families to help them deal with the consequences of war long after the last soldier departs Afghanistan.

Our commitment to support wounded warriors and their families must never waver, and our programs of support must be built and sustained for the long road.

In closing, a strong decisive Army will be, as it has always been, the strength of our Nation. In partnership with the Department of Defense, my colleagues on the panel today, the Department of Veterans Affairs, and civilian partners in Congress, we will be prepared for tomorrow's challenges.

Thank you again for the opportunity to testify in front of this committee today, and more importantly, thank you for the support you have given over the last 12 years. Thank you.

[The prepared statement of General Horoho can be found in the Appendix on page 45.]

Mr. WILSON. Thank you, General, for your very positive message.

Admiral Nathan.

STATEMENT OF VADM MATTHEW L. NATHAN, USN, SURGEON GENERAL, U.S. NAVY

Admiral NATHAN. Chairman Wilson, Ranking Member Davis, distinguished members of the subcommittee, thank you for this opportunity to discuss mental health research including our progress, opportunities, and our challenges. We are sincerely grateful for your leadership and for the support you have shown in this area over the years.

All of us in military medicine are dedicated to ensuring that the resources you've provided translate into effective treatment modalities and advances in caring for our service members.

Navy Medicine Research, Development, Testing, and Evaluation is foundational to our mission of force health protection. Cutting-edge RDT&E [Research, Development, Test, and Evaluation] pro-

grams bolster both our current and future capabilities and help sustain a culture of excellence.

Our 2013 Navy Medicine Chartered Course reflects the strategic goals of readiness, value, and jointness, and these key priorities are fully synchronized with our translational research efforts, particularly those focused on post-traumatic stress, traumatic brain injury, and suicide prevention.

Our clinical investigation programs are the core of the Navy Medicine PH–TBI [Psychological Health and Traumatic Brain Injury] translational research efforts.

CIPs [Clinical Investigations Programs] result in actionable intelligence for our providers on resilience building, stress reduction, prevention efforts, and psychological treatment interventions.

Our priority remains translating our investments, your investments, into advancements in caring for our sailors, our marines, and their families. Collectively, military medicine has done this exceptionally well in the combat casualty arena as evidenced by the unprecedented battlefield survival rates in our recent conflicts.

We have leveraged research, advances, and point-of-injury treatment, evacuation and clinical practices as well as a registry of trauma throughout the continuum of care to save lives. Our commitment remains to realize the same level of progress and success in caring for our personnel with post-traumatic stress, traumatic brain injury, and other related mental health injuries.

Our work continues to demonstrate progress and we see progress in several key areas including: identifying new therapies and strengthening the evidence for existing prevention and treatment interventions; utilizing surveillance practices to enhance communication, coordination, and detection; integrating innovative technologies and alternative therapies with treatment and prevention efforts; developing and validating risk and resilient screening tools to guide interventions and mitigate negative behavioral health outcomes following traumatic exposures; providing clinical and operational leaders, information, and strategies to facilitate early detection and improve outcomes; and capitalizing on data signals and surveillance outcomes to optimize effective decisionmaking and guide future mental health operations.

Careful monitoring and assessment is inherent in our ongoing evaluation process. We are applying critical reviews through each phase and milestone to help ensure that our funded projects meet the intended objectives and provide the potential for long-term value to both our clinicians, our patients, and their families.

Sound partnerships and collaborations have been critical to our research efforts. We are working in close collaboration with the Army, the Air Force, DOD, The Centers of Excellence, as well as the VA, other Federal agencies, and leading academic and private institutions.

I believe military medicine can lead the way forward in this area; however, as I have said previously we will not solve this alone. The issues associated with mental health are presenting a national challenge and requires the expertise and commitment of our civilian colleagues from medical and nursing schools to leading research centers to private practice providers.

We must continue to undertake these efforts with a renewed sense of urgency. It is our obligation to those entrusted to our care.

In summary, deriving best value from our research investments requires careful planning, sharp execution, and good stewardship of our resources. We are committed to finding solutions and providing innovations to enhance clinical diagnostics and therapies to improve the outcomes of our injured service members.

On behalf of the men and women of Navy Medicine, I thank you for your support, your confidence, your leadership, and I look forward to your questions. Thank you.

[The joint prepared statement of Admiral Nathan and Commander Carr can be found in the Appendix on page 61.]

Mr. WILSON. Thank you very much, Admiral.

General Travis.

STATEMENT OF LT GEN THOMAS W. TRAVIS, USAF, SURGEON GENERAL, U.S. AIR FORCE

General TRAVIS. Mr. Chairman, thank you for your kind welcome, my first experience here and I am looking forward to it.

Ranking Member Davis, distinguished members of the committee, thank you for providing this forum to address something that is important not only to the military but also to this Nation and that is mental health and mental health research.

The Air Force Medical Services made meaningful progress towards translating mental health research into clinical, and I would add, operational practice to improve behavioral health prevention, treatment outcomes, ensuring better health, operational performance, and of course quality of life for our airmen wherever they serve and after they serve.

Fortunately, the rates for PTSD, PTS, and traumatic brain injury in airmen have remained relatively low, but we have joined with DOD in participating in research in these areas and of course benefit from the results as we treat our airmen and their families.

While the Medical Research Materiel Command Structure and the Defense Centers of Excellence in Psychological Health and TBI, DCoE [Defense Centers of Excellence], have primary responsibility for the oversight of these areas of research for the DOD, our Air Force research teams focus their efforts on specific operational Air Force issues where needed while also participating in many joint and interagency research activities.

Much of our mental health research is conducted at the 59th Medical Wing at Lackland Air Force Base in Texas and the 711th Human Performance Wing at Wright-Patterson Air Force Base in Ohio. We are very excited and encouraged by these research successes that have already translated into the clinical operational practice.

As an example of the latter, as a result of our study on the stressors experienced by remotely piloted aircraft mission unit members, we are now embedding psychologists with the right clearances in remote warfare units to provide early intervention and care and have convinced commanders to improve staffing and change work shift cycles to align with the recommendations of the study. They have paid attention and the changes have been made

and we are seeing some promising results in these new remote warfare career fields.

We are of course closely following our deployed airmen to understand the impact of war on psychological health to mitigate future battlefield mental health stressors. We have studies in place to examine secondary mental health effects when moving brain-injured patients in our air-vac system, best practices for psychiatric evacuees, and two studies particularly examining the stresses in pararescue, combat rescue, and special ops forces that may result in improved clinical practice guidelines and prevention.

And while the Air Force suicide rate remains below the DOD average and age-adjusted civilian rates, we strive to make continuous improvements in that very important program as well.

The Air Force is partnered with various universities but specifically the University of Rochester in 2004 to 2010 to evaluate the effectiveness of the suicide prevention program and we found out that in years when that program is more fully implemented Air Force suicide rates have been lower and we continue now to partner with various universities to learn more and then of course we share that information through the DOD suicide prevention office.

In summary, these mental health research programs will help us prepare for tomorrow's challenges while addressing long-term issues experienced by returning warriors.

Thank you for your support of Air Force medicine, military medicine, and I hope today's discussion is useful for all of us and I do look forward to your questions.

[The prepared statement of General Travis can be found in the Appendix on page 71.]

Mr. WILSON. Thank you very much, General.

And we proceed with Commander Carr.

STATEMENT OF CDR RUSSELL B. CARR, M.D., USN, SERVICE CHIEF, ADULT BEHAVIORAL HEALTH CLINIC, U.S. NAVY, WALTER REED NATIONAL MILITARY MEDICAL CENTER AT BETHESDA

Commander CARR. Chairman Wilson, Ranking Member Davis, distinguished members of the subcommittee, I am honored to be with you today as a mental health clinician representing my colleagues throughout the Department of Defense.

I am a board-certified psychiatrist and a psychoanalyst. I have also deployed to Iraq with the Army where I experienced firsthand both the blast of IEDs and the deaths of fellow Americans.

Over the past decade, I have also heard the horrors of combat from my patients. From these experiences, I understand why some combat veterans feel they deserve to die while others feel more at ease sleeping under a bridge than rejoining the communities they fought to defend. I also understand why we must fight for them every day to help all of them.

Currently, I run the Adult Outpatient Mental Health Clinic at Walter Reed. The wars continue in our offices just like in every mental health clinic in the DOD. Almost everyone we see is suicidal. We use all of the approaches at our disposal both evidence-based and innovative ones to keep them alive and to help them reconnect with the rest of America.

Since the wars in Iraq and Afghanistan began, our knowledge about comment related PTSD or PTS has grown exponentially. Research must continue. It is not quick and it is not easy but we must continue it.

Here are a few examples of recent research that has directly impacted military mental health care. The PTSD checklist, also called the PCL, is a rating scale developed through research to help clinicians identify service members with PTSD and to track their symptoms over time.

Recent research has also found that the benzodiazepine class of medications typically used for anxiety actually worsen many PTSD symptoms. They are no longer a standard treatment for PTSD.

The last example is the blood pressure medication named Prazosin or Minipress. It has been found in an off-label use to reduce the nightmares and excessive alertness that many people with PTSD experience.

In closing, we have made tremendous strides in understanding PTSD but there is still much to do. We are leveraging the best available technologies including talk therapies and treating it, but even the best treatments do not work for 30 to 40 percent of patients. In my opinion as a clinical expert, we need talk therapies created specifically for combat-related PTSD.

As reflected in Admiral Nathan's written testimony, military clinicians will continue to collaborate with their civilian counterparts to create life-changing treatments for those who continue to suffer.

What I hope you take from my comments is that we cannot settle for success with only some of our service members and leave the rest behind allowing them to return to their hometowns as broken, tormented souls. The battle for our veterans' lives is one we cannot lose. We fight it through continued research.

It is my pleasure to testify before you today and I look forward to your questions.

[The joint prepared statement of Commander Carr and Admiral Nathan can be found in the Appendix on page 61.]

Mr. WILSON. Thank you very much, Commander Carr.

Each of you has, have come across as so sincere and caring about our personnel and their families, military families. I want to thank each of you.

We want to proceed to have a 5-minute questions with each person of the subcommittee and I am very grateful that Jeanette James who has served as an Army nurse, we are very fortunate, she will be maintaining the time. She is above reproach and I am just really proud of her resource on the professional staff and you know and we want the American people to know what extraordinary staff people we have who are available on issues such as we have today.

As we begin, and the 5 minutes applies particularly to me, I want to ask our first four witnesses, and I have a keen interest in this. I was the past president of Mid-Carolina Mental Health Association and so as you were presenting different points, I—this is an issue that I have worked on for many years with a very personal interest and knowing what can be done. It is my understanding though that DOD will stop funding medical research for the rest

of fiscal year 2013 and use the funds to pay TRICARE providers instead.

Please explain what impact resource constraints such as of the continuing resolution and sequestration have had on PTSD and TBI research. How will your constrained budgets affect your ability to continue studies beyond the fiscal year 2013 and beginning with Mr. Secretary on and then I have got another question, Commander Carr, for you.

Dr. WOODSON. Thank you so much for that question. And no doubt 2013 is a difficult year from a budget point of view. Not only because of the actual cuts that are imposed by sequestration but cuts late in the year, the CR [Continuing Resolution], we have had to manage almost month by month in terms of our strategy.

But to answer your question specifically, our intent is not to stop funding for research. In fact, most of the research for 2013 has already been funded. So those projects are ongoing, but really to drill down into your question, we are not going to wholesale shift money out of research on these important areas to solve other budgetary problems. We are going to have to find creative ways of solving the budgetary problems but that is not going to be what happens.

Mr. WILSON. That is great news. Thank you.

General HOROHO. —excuse me—tremendous challenges across Army medicine with sequestration and then medical research materiel command is one of my subordinate commands that oversee many of these research projects.

And so as I look at the overall funding for Army medicine, I have made decisions that will protect behavioral health, warrior care as well as primary care and made the decision in primary care because part of what we have learned out of research is the positive impact of embedding behavioral health in our primary care clinics as a touch point. So that is why we have looked at that area.

The impact that it is having on Medical Research Materiel Command is that we will be focusing on ensuring that we keep our top researchers in some of the projects that we can't fund this year that they won't stop but we want to maintain the talent because you can't raise that up quickly and so that is a concern of mine is how do we make sure we maintain the capabilities for future research that needs to be done.

So were still—I can't give you a direct answer because we are literally monitoring the budget monthly as things change and looking at how we move money from the direct care over to the research.

Mr. WILSON. But it does not——

General HOROHO. But we are committed.

Mr. WILSON. But it does not appear to be a precipitous cutoff?

General HOROHO. No, sir. There is nothing that we have cut off at all across the board.

Mr. WILSON. Okay. Excellent. Thank you.

Admiral NATHAN. Mr. Chairman, there are two prongs to it. One is the dollars for funding the programs themselves and then the other would be the personnel piece that might be sensitive to furlough.

We have received no indication that we have to remove monies from research and/or development to pay for the operating and maintenance funding of our medical centers. So we are proceeding

until apprehended with all research in behavioral health and in wounded warrior programs.

There are research programs and there are research grants that are heavily laden with civilian personnel, Federal employees, and the Department of the Navy has been so far fairly flexible in allowing exemptions to furlough where possible to protect any programs that are prioritized as wounded warrior and or recovering warrior programs.

So at this point in time, I am fairly comfortable and confident that we are going to be able to continue the inertia that we have in these research programs for mental health, behavioral health, post-traumatic stress, suicide prevention.

Mr. WILSON. Thank you so much. That is very positive.

General Travis.

General TRAVIS. Yes sir, I would echo what everyone else at the table has said. The Air Force DHP [Defense Health Program] funded R&D [Research and Development] and O&M [Operations and Maintenance] fund mental health research represent about 10 percent of the research portfolio and we have not impacted those whatsoever.

We don't know yet what the impact of sequestration on what we are going to be able to do this year but at this point, my intent is to keep R&D going and we will see as the years go by and budgets come down the impact of that.

Very worrisome, because we are just now I think learning so much and I think to cut off the funding at this part, at this time as this war comes down would be really a shame.

Mr. WILSON. And thank you all and following the 5-minute rule, I proceed to Congresswoman Susan Davis.

Mrs. DAVIS. Thank you very much, Mr. Chairman.

And I wanted to come back with a few other questions, but Commander Carr, I just wonder from something you had said about the importance of talk therapies and the fact that we still don't know a lot about which have the desired effect perhaps. I am not sure if I am saying that correctly.

What I actually wondered from your statements, we are here because we want to talk about research and we want to maintain that, but at the same time sometimes when we are spending a lot of money I know that we hear out in the field essentially that some of that money might be better spent with making certain that we have the clinicians that we need that are well trained and perhaps have even had some experience in theater themselves.

Is that something that you feel as well that sometimes we perhaps don't do as good a job in making sure that we have all the available help necessary especially in communities that have a more difficult time accessing that kind of help?

Commander CARR. Ma'am, trying to understand your question in terms of do we need more staffing, is that——

Mrs. DAVIS. Well I think we always need more staffing, but I think that there is also sometimes a feeling that we are spending money and time on research which I happen to believe is a good thing, but on the other hand that sometimes maybe that has a higher priority than having the clinicians in the field that we need.

I am just wondering from your experience if you wanted to comment on that. We always can't do it 100-percent correct. I am just wondering if you sense some of that feeling and you get it from the clinicians that are in the field.

Commander CARR. Yes ma'am, I—you know, I think we have spent much of the last several years to really standardizing a lot of the therapies that we use for particularly PTSD was what I was referring and I think we have a lot of—I would say all of our providers involved at this point had a lot of skills and a lot of experience but we are always trying to treat everyone that we can. I think that was part of what I am trying to say that not all of our patients responded to the same standardized treatments. And so we are always needing more—you know when I mention talk therapies in particular, I really believe the PTS, PTSD, the major treatment for this therapy, different forms of psychotherapy and medications can help with controlling symptoms, but we really need therapies specifically for combat trauma and of course, as you are saying, people who have been there, as some of my patients say to me. And they see the ribbons on my uniform and they say you will get it—you will understand because you have been there. You know, it is really—I don't see it as necessarily exclusionary when they say that, but one of hope. They are wanting to be understood and wanting to feel understood by the person with them. And they think that someone who has been there can maybe do that.

Mrs. DAVIS. I think it is interesting that we haven't talked too much about stigma and we have spoken of that so many times in the past and it may be that we are overcoming that issue and working to look at the kinds of research, the kinds of therapies that are really the most helpful.

Dr. Woodson, in your written testimony you mention the need to establish a coordinated military veterans and civilian brain donor registry and tissue banking system. And I am wondering, does that require any legislative authority to do that and is DOD now working to establish a system like that?

Dr. WOODSON. Thank you very much for that question. Actually, we have established one. What we are learning is that we need to assist with some administrative changes so that service men and women and others who would choose at the time of their death to donate their brain can do so more easily and we can identify them.

This is actually very important going forward in our collaborative efforts with the NIH and many of the civilian academic partners and will add I think a great deal to our understanding of the pathobiology of these diseases.

So at this time I don't think we need legislation, but we do need is some changes in administrative process.

Mrs. DAVIS. And do you see that—in collaboration with the initiative that the president has mentioned as well——

Dr. WOODSON. Absolutely, yes.

Mrs. DAVIS [continuing]. And the money would be—I understand about, what, $50 million or so will be going to DARPA [Defense Advanced Research Projects Agency].

Dr. WOODSON. Yes.

Mrs. DAVIS. Okay, great. Thank you very much.

My time is up, but I hope we have another round, thank you.

Mr. WILSON. Thank you Mrs. Davis, and we now proceed to Dr. Wenstrup, of Ohio.

Dr. WENSTRUP. Thank you, and I am not sure who to address this to specifically so whoever feels they have the answer, if there is an answer, let me know. But I was wondering if there has been any look at risk factors before deployment such as—we all know the risk factor of going to war. I understand that part, but are there other risk factors that pertain to some of the troops before they deploy?

General HOROHO. Thank you, sir.

A couple things that we have looked at in the predeployment is looking at the stress factors of stress on the family, prior deployments, the number of deployments, any behavioral health history, and so we now have a behavior health data portal which is a Web-enabled that asks consistent questions across the board and kind of tease out those risk factors that then is shared when we are looking at our treatment protocol and then it also can be shared with the provider that is in theater so that as we work on that care coordination and treatment plan.

And we are also working with fusion cell of information. So there are many risk factors that are out there and sometimes commanders see one piece of that, behavior health sees another piece of it, primary care, so we have been working with developing a database, a commander's dashboard, that will fuse all of that information together as we look at the health of the force.

Dr. WENSTRUP. Are there ever any struggles between commanders who certainly don't want to lose a troop but someone may be having too many risk factors to deploy?

General HOROHO. I don't think it is so much that, as we have seen with embedding behavior health, what it has done, it has actually I think brought our leaders closer with our soldiers and the behavior health community.

We have seen a 58-percent reduction in risky behaviors just by having embedded behavior health in the units and so commanders are actually embracing this. And I think it is more and why we haven't talked about stigma is because we have got five touch points now. And I think people are being much more comfortable, but this is part of our battle rhythm and the way that we need to take care of our soldiers and their family members. So I think that communication is helping.

Dr. WENSTRUP. I thank you very much, ma'am.

Dr. Woodson, did you want to add something to that?

Dr. WOODSON. Just a couple of quick points. Clearly, if someone has a prior history of PTSD and particularly if it is undiagnosed or untreated, that is going to be a problem.

Now as it relates to a previous history of PTSD, I think as we are dissecting through the data, one of the things that we are finding is that there are service men and women who come into the service with undiagnosed and unreported prior psychological trauma that is made worse perhaps by their military deployment experience.

We are just getting through that data, but being able to dissect into the lives of the young people who come into the service and

understanding what kinds of trauma they might have been exposed to is really going to be important for the future.

Dr. WENSTRUP. Thank you.

I have a question for you, General Travis. You mentioned something about the reduction of the suicide rate within the Air Force. Is that within the Air Force or is that military wide?

General TRAVIS. Well, we are all struggling with this and of course we now coordinate many of our strategies together to the DOD suicide prevention program, but the Air Force has had some success with an 11 element program that focuses mainly on leadership community, education, and of course special protection for folks under investigation.

We have also targeted suicide prevention efforts at our most at risk career fields such as security police and maintenance, believe it or not because they have had some special problems. So our outreach to their supervisors and to those members were very specific in educating those folks and we have seen great results so far.

I mean, everybody's rates are slowly going up, but our program seems to be working and as with anything, it does take a while year-to-year to show the response.

And one other just a comment to add to your last question, we have several studies going on our frequent deployers such as special ops and security forces as well and we look at family resilience, we look at relationships, we look at their social context, their psychosocial context on these frequent deployers, and because we do embed or dedicate, EOD [Explosive Ordnance Disposal] is another community that we are very tightly connected with, we actually know the families, they know us.

That builds a trust that I think as Congresswoman Davis mentioned, the stigma issue is starting to become a little bit less of a problem. So we are learning a lot, and I think we will learn a lot more as we continue.

Dr. WENSTRUP. Thank you all very much.

I yield back my time.

Mr. WILSON. Thank you very much and we have Congresswoman Noem, of South Dakota.

Mrs. NOEM. Well, thank you, Mr. Chairman. I appreciate it and I want to thank everyone on the panel for being here today as well. It has been a great conversation and great discussion for me to hear.

I have a couple of questions and I believe that it was Lieutenant General Horoho who has discussed the 900 different research projects that are going on throughout the DOD when it comes to acceleration of improvement, when it comes to not only our active military. And I might ask you to speculate a little bit into veterans as well after they come back from deployment and maybe aren't in engagement anymore, but I am curious about environment.

If some of these research programs have looked at surroundings and environment during the treatment process of PTSD or TBI if being in a calm or more peaceful situation accelerates that type of improvement. If you would speak to that.

I would also like Commander Carr to speak to that as well if he notices because I think when you have specialized programs for treatment that they can engage in we may see that acceleration

much quicker and I would like to know if different programs, where they are located, how the facilities are arranged if that can make a big difference for military men and women.

General HOROHO. Yes, ma'am. Thank you very much for that question and I can talk about it from firsthand experience in Afghanistan.

We have 11 concussive care centers in Afghanistan and what we did at those centers we actually took our concussive care coordinators as well as our behavioral health and married those together in a very healing environment, so darkened rooms, small little lights, calm music, sleep tapes, and really looking at alternative medicine, how do you use that when someone is exposed to concussions, IED blasts, or other behavior health issues.

Very, very positive feedback and that has actually led to our 98-percent return-to-duty rate in theater. We have also taken that same concept when—which has really driven the pain management task force is looking at how do you take alternative medicine therapies, or yoga, which also talks about the healing environment, relaxation, mindfulness, virtual reality, all of those are being incorporated into the communities in which we provide behavior healthcare.

Mrs. NOEM. Okay, great.

Commander Carr, if you could speak to that as well and then even talk about specific facilities or programs that may be available throughout the country that our men and women can participate in.

Commander CARR. Well, I can talk about, ma'am, what I see as the importance of when you say peaceful environment, I actually think of the relationship between the—their therapist and the soldier or marine person coming in for treatment that—by peace I mean feeling gotten—feeling understood and being able to feel they have a safe place to—to process to talk about what they have experienced.

You know, how I understand that, how I understand trauma is that it comes from feeling—people feeling—that no one else gets what they have experienced. They can't tell it to anyone. They cannot process it with anyone and they are left alone.

So it may mean that their battle buddies, their unit that they are with may help them—may feel in that sense peaceful to them, you know versus a place they may go home and no one else gets it and understands or someone who comes to see me, it is the relationship that I try and build with them.

So I don't think in terms of facilities, I you know, I think, unfortunately I—you know, my knowledge is much more local. I would have to take for the record any information on specific treatment facilities.

[The information referred to can be found in the Appendix on page 85.]

Mrs. NOEM. Okay.

Dr. Woodson, could you refer to that? Another portion may be a way to describe this question is, is it often that our men and women have the opportunity to withdraw to a facility for a treatment program that helps them go back to Active Duty or service

quicker, and what about that would possibly make that acceleration of improvement happen?

Dr. WOODSON. It is an excellent question and let me try to answer it two ways. I think we are learning out of the National Intrepid Center of Excellence that number one, you need to give special environments to some service members suffering from PTSD and TBI. And you need to give them a multidisciplinary evaluation because it may be a number of factors that are contributing to persistence of symptoms. You need to dissect them out and treat them appropriately.

But the other part of the question is that as it were, looking through the research and learning more about this, one size is not going to fit all. And that what promotes a positive response and improvement in one individual of PTSD is not what is going to be in the other.

And so if you look at the literature there is everything from service dogs that are helpful and it might be this issue of a service dog allowing a service member to reconnect with feelings and emotion and the world to equestrian therapy to golf lessons. And what I am saying to you is that one of the individualized approaches in the future probably is to figure out how to get that service member to reconnect.

Mrs. NOEM. So with these research programs, are those of some of the things that we are researching and doing studies on so that we have different types of programs available throughout the country?

Dr. WOODSON. So in our portfolio, we are looking at these alternative therapies and within the portfolio of PTSD we are really trying to get a better understanding of who is at risk, what are the triggers, and then what are the therapeutic options.

Now I say that with the understanding and hope that you have the understanding that there is so much that is not known yet about this specific——

Mrs. NOEM. Well I have had some tell me that even it can make a difference for many to be in a rural area compared to an urban area, a larger facility versus a smaller facility, that even those types of changes can be beneficial for some over others.

Dr. WOODSON. Now, I would agree with that. The issue is again I think it is going to—we are going to have to figure out how to predict an individual response to different therapies.

I would say that as a last note that much of what we are doing is resonating in the civilian community. We are understanding that many more people suffer from this problem in the civilian community and some of the very same things that we are trying to deal with need to be discussed, dissected out, and we need to gain knowledge on the better. Combat-related PTSD may be a subclass.

Mrs. NOEM. Thank you.

I apologize. I am over my time, Mr. Chairman.

Mr. WILSON. Thank you, Mrs. Noem.

We will proceed to Congressman Austin Scott, of Georgia.

Mr. SCOTT. Ma'am, gentlemen, thank you so much for being here.

And Dr. Woodson, you spoke to an issue, very briefly about an issue that I want to talk about a little bit. We are all obviously all concerned about the mental health issues of our soldiers when they

come back and our citizens as a whole. And I think we are—we have got beyond I think the stigma of it, which I think was maybe the first issue at least for moving beyond that. And I think that, you know, the progress that is being made is pretty encouraging.

I guess I get back to the challenge and commander you mentioned this and several of you have about the fact that what works for one doesn't necessarily work for one person doesn't necessarily work for the next person.

But General Horoho, I am from Georgia, Fort Benning's right down the road, not in my district but obviously a lot of our soldiers that are in combat are based there and many of our other bases. As far as equestrian therapy goes, we have a facility close to Benning called Hopes and Dreams. It is in Quitman. They have got some innovative ways that they have worked with members who have come back with problems.

They have had a lot of successes and I guess my question is when we talk about the equestrian facilities and other things, what ongoing research is there with these alternative treatments and what are the opportunities for organizations like Hopes and Dreams to expand their reach, if you will, and their support of our soldiers when they come back?

General HOROHO. Thank you, sir. We have with looking at equine therapy were actually doing more of that in the Western region and looking to see whether or not that is beneficial. So Fort Riley is one of the areas where we have been using that therapy to look at and evaluate. So that is kind of where we have focused it.

The opportunity is there with collaborative partnerships so if those—if there is an area near Fort Benning and that organization would like to partner, that is something that can be done with the local commanders and the commander of the facility there.

Mr. SCOTT. Okay. I will get you some information on that and I appreciate that.

One of the other areas that I have questions about is the hyperbaric chambers and the studies that were done with the use of hyperbaric chambers. What would—and it doesn't matter to me whichever one—Dr. Woodson, maybe start with you since you are—what—the research that came from those tests, what opportunities are there, what challenges are there? What are the beliefs of the DOD right now with the use of hyperbaric treatments?

Dr. WOODSON. That is a great question. As you know, we took on a rigorous evaluation of hyperbaric oxygen therapy a few years back. The literature had a lot of anecdotal reports, uncontrolled reports of benefit in TBI and other diseases to tell you the truth.

We have four trials. The first—and the Surgeon Generals can speak to specific trials—was reported out I think in the September timeframe and that showed that while it wasn't detrimental to the individual, it did not show any clear benefit. We have another trial that is due out either this month or next month and another I believe due out in the fall.

What we hope to do is after these trials are completed and some are placebo-controlled trials is then convene a consensus panel to make final recommendations around this particular therapy.

Mr. SCOTT. I have talked to soldiers that have been involved in it and some of them of feel like it helps and some of them don't. Again, it might be one of those issues where it works for one and doesn't necessarily work for the other. And I hope that that when the decision is made that we are doing whatever we can to make sure that we are opening that opportunity for people who do want to try it.

With that said, Mr. Chairman, I will turn the remainder of my time back in, and thank you for being here.

Mr. WILSON. Thank you, Congressman Scott, and in consultation with the ranking member, we will proceed with a second round of questions.

Commander Carr, I am interested in how PTSD and TBI research has improved medical care for service members. Please give us examples of improvements from your own practice.

Commander CARR. Thank you, sir. I can think of a couple of applications of what I—of examples that I described in my opening remarks. Prazosin, it is a medication that was found—it is actually a high blood pressure medication and it was discovered several years ago that it would decrease nightmares, decrease arousal symptoms; treating right now a Army physician who has had severe PTSD from being in Fallujah for about a year, the battalion aid station.

She saw horrific casualties, she has attempted suicide three times. She has made it clear, there will not be a fourth that is not successful. I inherited her as a patient when I got more—she was struggling with other therapies and I tried her on this medication, and it has worked. It has reduced a lot of her "on edge" all the time, feeling like—as she puts it—being "over there" all the time.

She can start to reengage a little bit more and feel connected again and we still have to process a lot in therapy. Again, talk therapy is really where the work is done with improving PTSD, but it has really been a gamechanger for her.

You know, I can think of other in terms of specific examples of other treatments. You know we have a—I think of a patient right now that you know had struggled with some of the standard treatments that have been tried before.

As I mentioned before, they are not all the—not everyone, as you have heard from other panel members, not everyone responds to standard treatments and part of that is some of the main therapies that we use were actually originally developed for one-time sexual assault trauma and transferred over into combat trauma which is much more—much more extensive going over several years, many incidents, and it is a different—as I argued before, combat trauma is a different experience. As Dr. Woodson said it is a subset in many ways of forms of PTSD and the standard treatments may work very well, but others it doesn't work for and the—they need something that focuses more on the state that they are in, that they are left versus specific incidents that they are trying to overcome or process in their mind.

And you know I have been working with at least several in you know, much more of what are called psychodynamic approaches or other more innovative approaches that have started—you know that are basically trying to help reach them where they are. And

you know, there is ongoing research in those fields as well that I am learning from, I take in information from. I am continuing to try to seek the latest research and learn more about them.

Mr. WILSON. Thank you very much. And I can tell you you are really putting your heart into what you are doing too, so thank you.

And General Horoho, I have a—it is a hypothetical and it would be advice to a commander and that is if a soldier is in theater and has killed the enemy while deployed and feels that he can't do it anymore but tells his command this, what does the command—how do they react? What do they do?

General HOROHO. Okay. Sir, thank you. As we look at that, that commander looking at that has several options.

Right now we have 90 sites for telebehavior health in Afghanistan. So some of the most remote combat outposts for exactly what you are talking about. So we have our combat stress control teams that are far forward on the battlefield so they would be able to turn to someone that has a habitual relationship with the unit and say, "I need you to please talk to the soldier." A lot of times it is done after-hours, so that soldier is—you know, if they want their privacy they will do it after-hours because they don't want their peers to sometimes to know that they are going.

They can have telebehavior health so that we are trying to get in front of something so that you are not waiting until you read a playback or having to go to either Bagram or Kandahar. We can get that capability far forward in being able to deal with it and then we have our chaplains that are there as well.

And we also have the resiliency centers and if I could just really focus on that because we talked so much about treatment, diagnosis and treatment but really a tremendous amount of work is being done on resiliency and trying to get far forward of the left of the boom.

And the comprehensive soldier family fitness of looking at what are the strengths that an individual has, what are the stressors in their lives, and what are the right coping skills so that we can equip those individuals with that.

That is now a standard across the entire army and we are trying to put as much capabilities either through telehealth which we have had about a 780-percent increase, which is tremendous and so we have had over 7,700 behavior health appointments a day.

So we have seen a huge increase and I think that is helping. And part of that is used from this telehealth that we have in theater.

So he has many resources to be able to reach out to and then if they feel like they need to be taken back to the Resiliency Center and have several days of rest, they are doing that. From 7 to sometimes 14 days of rest.

Mr. WILSON. That is extraordinarily encouraging, and I have seen domestically the success of telemedicine. So this is as a parent of four members of the—serving in the military today, what you said is just incredibly encouraging. Thank you very much.

And I proceed now to Mrs. Davis.

Mrs. DAVIS. Thank you, Mr. Chairman. I think it is really obvious listening to you that we have deployed many different modalities, really tried to respond as quickly as possible. What we know about scientific research and I think you mentioned this, General,

that it takes about 16 years sometimes to be able to translate that into real practice and policies and yet it feels as if we have tried to shorten that.

What is helping that process along? Can we do it even faster in some cases? And is it a financial problem that we face in terms of trying to do that or is it more the nature of what you are working with?

Dr. Woodson.

Dr. WOODSON. Maybe perhaps I can take that question on. You have asked two very good questions. One had to do with what have you done that has translated into making a practice better for the physician at the front line? What is the value of the research?

Well, what we have done actually is we have in some sense reengineered the way we call what is the best evidence in medical science and then get it out to the field.

And if I could, we have published a series of guidelines that we get out to the field that are readily available to clinicians so that they don't have to plow through all of the literature and the like.

We, DCoE's, one of DCoE's main benefit has been to get the experts together, decide what is the best evidence about what works and get it out to the field. This strategy has reduced our death rates from trauma and it is reducing I think the impact of these nonvisible wounds of war and allowing us to treat them more effectively.

Now having said that, there is a sort of a ying and a yang circle. We can look at the outcomes of the best evidence and say it is not good enough and feed that back into research design to improve protocol.

The other thing is with this design, we can—and the collaborations we have set up—we can move through the science and the process of investigation a lot more quickly to generate new knowledge and then to get it back into practice.

So we are trying to reengineer the way we do research as much as we are trying to make sure that the clinicians have the latest and greatest and best-evidence treatments available to them.

Admiral NATHAN. If I could just give you a tactical example of what is happening at Camp Pendleton in San Diego——

Mrs. DAVIS. Right. I was going to ask you about that, but I am running out of time.

Admiral NATHAN. So the question is, you go into a large clinic where lots of people are being seen by lots of providers and perhaps one provider has stumbled onto something that works pretty well and how do we distribute that, how do we disseminate that quickly and rapidly?

So that program, every patient—there are over 3,000 that have been enrolled so far—are given iPads when they come in and go through a series of standardized questions about how they are doing.

This is before they see the provider and they go through a standard where they can enter in the kind of treatments they have been receiving. That is all correlated in real-time as to how this large cohort of patient populations seen at these mental health clinics are doing in San Diego and Camp Pendleton.

That then immediately feeds back to the clinicians through the electronic medical record telling them what the general number of people are who are experiencing the symptom, what treatment they have been on so far, and has it worked or not. And all of a sudden, in real-time, you can change your therapy based on how the herd is sort of running. And we have seen great results with that. Already that has changed the paradigm out there of how we are treating sleep disturbances because what the doctors and the providers thought was the right answer turned out to be wrong.

And these patients are also salvoed through email at home and their families are salvoed through emails at home. And so all this is collected and this is real-time information now that you have at your fingertips that tells you the providers in my clinic are trying this. It is not working. Why would I try it? Let me try something else. And then it catches on much more quickly.

Mrs. DAVIS. That is a very good to know. It—so—because I think the other thing that is happening at Pendleton is people are getting a lot of attention and—in an organized way that doesn't enhance stigma—that really——

One other quick question, Dr. Woodson, was just about the—you know, the Defense Centers of Excellence and coming under the Army now as the executive agent essentially. Is there anything about that that members of Congress should be concerned about because obviously we wanted to be certain that the centers were able to help all of us with that kind of information that you mention.

Dr. WOODSON. So rather than concern I would greet it as good news and here is the reason why. The generals and admirals to my left I couldn't be more proud of in terms of working together in a collaborative way to make improvements.

MRMC [Medical Research and Materiel Command] is becoming more of a joint research asset. As we move to the defense health agency standup you are going to see part of that process formalize. So in moving DCoE under MRMC it gives it sort of administrative support that it couldn't have out on its own and because it needed to generate protocols, distribute funds, take care of personnel, it frees it up from those activities in some sense and gives it appropriate support and oversight.

It becomes a much more efficient process. return on investment is greater. So this is good news, and I will let the distinguished panel here talk to the benefits of joint research programs but again, I think we get answers faster, at lower cost, when we approach it collaboratively.

Mrs. DAVIS. Thank you.

Mr. WILSON. Thank you, Mrs. Davis.

Dr. Wenstrup.

Dr. WENSTRUP. Thank you, Mr. Chairman.

You know, often, PTS is recognized sometimes long after the deployment and that is why we do the follow-up surveys and questions and find out how people are doing. Certainly often it is a recognized after that honeymoon period when someone comes home and just thrilled to be home.

You know, what we have had other wars in our history and there have been various levels of combat stress or whatever it was

deemed at those times and you know we have had some wars where people came home to parades to meet headquarters where people came home and were spit upon.

And I wonder if there is any effect from our society. In other words, is the way that society is approaching our troops, does that have any effect in your opinions on the high rise of PTS.

In other words, coming home to an ambivalent nation. It is not really recognizing the sacrifices that are being made or in many people's minds don't feel it is important or many say we shouldn't be there and you come home to that and you have given another year of your life and people are saying, what a waste.

I am just wondering if that has any effect on some of the troops and maybe Commander Carr, you can address that first or whoever would like to.

Dr. WOODSON. Let me just make an opening comment that I can't answer your question specifically because I don't know if we have dissected out all of those factors, but I would perhaps challenge one premise that PTSD is more prevalent now then it was in other wars.

We just ignored it in other wars. Remember, PTSD wasn't coded as a diagnosis until 1981 after—well after Vietnam. So I can remember just to give your personal story of hearing stories about my uncles when they came back from the wars and how the family talked about them being different. And so the point being is that it occurred in the other wars, we just ignored it at that point. We didn't have a diagnosis for it.

Commander CARR. Yes, sir. I agree with Dr. Woodson. I mean, there is World War II and the medical evacuations from the Pacific were—about a third of them were psychiatric and that is not really discussed very much from that war.

Partly it is generational and there is a lot of silence, but there is definitely—there is definitely—it was called "combat fatigue" back then, but there was definitely what we would call PTSD now and you can hear it described of children whose say father fought in World War II and it may just not have been called that, but they were—they were seen as different.

You know their spouse may say, "Well, they were never the same after the war." And you know, "They have been abusive at times," or "They may have drank a lot more," and it is present with all wars, sir.

Dr. WENSTRUP. My question though is do we as a society have any effect on the patients as they return or is this all due to their experience in theater or how we welcome them home.

There may not be an answer but I am just curious and I recognize what you are saying that a lot of times we just didn't talk about it in the other wars as we are now.

Commander CARR. Sir, the only thing I would add is I think the expression of it is probably different. As an example, you know, someone that I treated described his father. He had three purple hearts from the African Campaign in World War II; campaign in North Africa rather and you know he came back—you know he came back a hero, but he still had PTSD but he was described as being different from the war.

You know whereas patients now may—maybe—they may react differently. People who have PTSD may talk in a much more negative way about their situation, about the wars, was it worth it. I have had patients who will say well, there is going to be no unconditional surrender on a battleship at the end of this and it does impact how they perceive themselves.

Now both sets of those have PTSD but they just—it is just expressed differently I would say, sir.

Dr. WENSTRUP. Thank you very much. I appreciate it.

I yield back my time.

Mr. WILSON. Thank you, Dr. Wenstrup.

And we will be concluding with Congressman Austin Scott, of Georgia.

Mr. SCOTT. Thank you. Thank you, Mr. Chairman.

I have one quick question, Dr. Woodson, or any of you can address this. What about the spouses? When our soldiers come home obviously if the soldier is going through these things then obviously the spouse is sharing—in those areas—are we making therapy available for them?

Dr. WOODSON. Yes. Absolutely. We have certainly increased our focus on families understanding that families are enablers. They are an important contributor and they suffer from the deployment both while the service member is away and when they come back the reintegration process and then if they come back having been harmed by their wartime experience, it becomes even more of a stress.

We are looking for ways actually to do even good research on families. We are a little bit encumbered because not being in the military of course we can't require them to participate in certain surveys and the like, but we are engaging more and more partners to look at what the effects of this stress is on the family and then what specifically we need to do about it.

I am particularly concerned about children of service members who have been overseas and the fact that we don't know enough about how to manage deployments, reintegration, and issues within families as a result of service to this Nation.

Mr. SCOTT. Thank you.

Mr. Chairman, I yield the remainder of my time.

Mr. WILSON. Thank you very much.

And as we conclude, again, on behalf of the entire subcommittee, I would like to thank all of you for being here. We appreciate your genuine concern for service members, military families.

Secretary Woodson, thank you for concluding on that.

Again, it is really reassuring as a veteran, as a part of a military family today, to know what you are providing and what this means to our country.

With there being no further, we shall be adjourned.

[Whereupon, at 5:12 p.m., the subcommittee was adjourned.]

A P P E N D I X

April 10, 2013

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

April 10, 2013

Statement of Hon. Joe Wilson

Chairman, House Subcommittee on Military Personnel

Hearing on

Mental Health Research

April 10, 2013

Today the Subcommittee will hear testimony on the research conducted by the Department of Defense and the military services to address deployment-related psychological health needs of service members, particularly Traumatic Brain Injury (TBI) and Post-traumatic Stress Disorder (PTSD). Before I begin, I'd like to thank Ranking Member Susan Davis from California for suggesting that we hold this hearing. I'd also like to recognize her leadership in this area both while she was the Chairwoman of the committee and now as the Ranking Member.

Today, we continue to address the signature wounds of the wars in Iraq and Afghanistan, PTSD and TBI. Our unwavering commitment is to our service members who are experiencing the challenge of multiple deployments. Collectively the Department of Defense and, in particular, the leaders of the military health system who appear before us today, have done tremendous work responding to the mental health needs of our service members and their families. This has not been an easy task. I want to thank you for your efforts.

Since 2007, Congress has appropriated close to $1.5 billion for scientific and clinical research for the Department to improve the prevention, screening, diagnosis and treatment of PTSD and TBI. This investment has funded nearly one thousand studies in collaboration with Federal, academic, and public-private partnerships. How have these studies increased the understanding of these conditions and how has this new knowledge translated into more effective methods of preventing and treating TBI and PTSD?

I am also anxious to hear about the future of these research efforts. How has sequestration and the Continuing Resolution affected both ongoing studies and those that are yet to begin? We must not lose the momentum we have gained through this research. We must continue to build on the hard work that's already been done to fill any remaining gaps in scientific knowledge. I am committed to support DOD's goal to prevent and treat these devastating conditions. Our service members deserve no less.

STATEMENT BY

THE HONORABLE JONATHAN WOODSON, M.D.

ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS)

REGARDING

MENTAL HEALTH RESEARCH

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
PERSONNEL SUBCOMMITTEE

APRIL 10, 2013

Mr. Chairman, Members of the Committee, thank you for the opportunity to appear before you today and discuss mental health research and, I'll also address research related to traumatic brain injury and suicide prevention, which often have some co-occurring mental health aspects.

Since September 11, 2001, more than 2.1 million Service members have deployed to Iraq and Afghanistan in OPERATION IRAQI FREEDOM, OPERATION ENDURING FREEDOM, AND OPERATION NEW DAWN. Military forces sent to fight those wars have exhibited a number of unique features, including: (1) an all-volunteer military that has experienced multiple deployments to the war zone, (2) substantial use of the Reserve Components including the National Guard, and (3) a high number of Service members surviving severe injuries that in previous wars would have resulted in death. These sustained combat operations resulted in greater exposures to stressors, including exposure to death, risk to life, threat of injury or actual injury, not to mention the day-to-day family stress inherent in all phases of the military life cycle and its transitions. Stress can be a major contributor to the onset and exacerbation of mental health problems and is related to a variety of negative physical health outcomes.

Some Service members have experienced traumatic brain injury (TBI); symptoms of mental illness, including depression and posttraumatic stress disorder (PTSD); and suicidal thoughts or behaviors. Complicating the prevention and treatment of mental health disorders, TBI, and suicidal behaviors, are chronic pain, insomnia, substance abuse related to alcohol, tobacco, and other drugs, as well as the misuse and abuse of prescription drugs. Family members often suffer with the Service member because of the multiple stressors associated with deployment and reintegration. Overall, we expect the need for mental health services for Service members and their family members to increase in coming years as the Nation recovers from the effects of more than a decade of military conflict.

Research efforts to address these health care needs are many and on-going. Military Health System (MHS) researchers are attempting to answer questions across the research continuum from diagnosis through treatment to follow-up care. However, fundamental gaps in scientific knowledge remain, so we continue to pursue the research described herein.

Critical to the development of DoD research planning is an understanding of the agency-specific activities in the Department of Veterans Affairs (VA), the Department of Health and Human Services (HHS), and the Department of Education (ED). The DoD works closely with the VA, HHS, and ED to best leverage inter-agency research investments to advance health care and health services. This was most recently achieved in a Joint Review and Analysis meeting on research related to PTSD, TBI, suicide prevention, and substance abuse.

Agency representation at the meeting included DoD, VA, ED (represented by the National Institute on Disability and Rehabilitation Research [NIDRR]), and HHS (represented by the National Institute of Health's [NIH's] National Institute of Neurological Disorders and Stroke [NINDS], National Institute of Mental Health [NIMH], and National Institute on Drug Abuse [NIDA]). Activities are underway in support of inter-agency collaboration, including the DoD's Systems Biology Program and the Millennium Cohort and Family Cohort Studies, the VA's Million Veteran Program , the NIH's biomarker research program, and research dedicated to advancing prevention and treatment interventions. The DoD and the Centers for Disease Control and Prevention (CDC) are partnering with the Brain Trauma Foundation to develop a clinically useful definition of mTBI/concussion. Suicide prevention research includes the DoD's Military Suicide Research Consortium (MSRC) and the NIMH and DoD Army Study to Assess Risk and Resilience in Service members (Army STARRS) program.

Data-sharing efforts include the DoD/NIH Federal TBI Research Informatics System (FITBIR) for TBI clinical research (a central repository for new TBI-related data that links to existing databases to facilitate sharing of information), the VA computing infrastructure, and NIDRR's TBI Model Systems National Database (TBIMS-NDB), which contains retrospective data on the clinical progress and outcomes of individuals with moderate to severe TBI. Research may benefit in multiple ways from the use of electronic health record data by providing information related to the feasibility of attaining study participants or understanding the scope of a problem being investigated.

Recently initiated activities include two new joint DoD/VA research consortia to support PTSD and TBI biomarker studies (the Consortium to Alleviate PTSD (CAP) and the Chronic Effects of Neurotrauma Consortium (CENC)), new treatment studies to be generated from biomarker studies, and new treatment response studies to be incorporated into clinical trials.

Key DoD research priorities span the mental health domain, including the need to:

- Identify new therapies and strengthen the evidence base for prevention and treatment interventions to improve health and function throughout the illness trajectory.
- Enhance post -mortem tissue collection and coordination of repositories to enable broad access to high quality post-mortem specimens, where permissible.
- Utilize common project tracking and research management systems to enhance communication, coordination, and collaboration across research funding agencies.
- Discover and determine viability of biomarkers to detect acute and chronic pathology, predict outcomes, and monitor the response to treatment.

- Accelerate the pace of research and development for PTSD, TBI, and suicide prevention by leveraging existing and emerging technologies to the greatest extent possible.
- Develop new outcome measures that are sensitive enough to evaluate changes across time

The sections that follow provide examples of the DoD research activities and research planning approach in mental health.

PTSD: Mechanisms, Biomarkers and Treatment Research
In response to a traumatic event, people commonly experience PTSD-like symptoms, e.g., hyperarousal or reliving the event. Many individuals progressively improve and symptoms recede. Those who continue to experience distress may develop PTSD. The overall goals of PTSD research studies are to (1) reduce the number of individuals who develop PTSD following trauma (through early diagnosis and preventive interventions) and (2) reduce the number of individuals with chronic PTSD (through treatments that also address substance-related and other comorbidities).

Mechanisms. The underlying mechanisms of progression following traumatic exposure need to be able to identify individuals at risk for developing PTSD and comorbid conditions. This may be attained through neuroimaging, animal studies, post-mortem analyses, and laboratory-based investigations focused on identifying physiological and neurochemical contributions, and other psychological, contextual, and environmental factors. As cognitive science evolves to reveal how dysfunction in memory and attention processes contributes to the development of mental illness, researchers need to translate these findings into prediction models and novel prevention and treatment interventions.

Biomarkers for early diagnosis. Research is needed to identify and validate biomarkers (biological markers) to predict increased vulnerability to the development of PTSD, to indicate changes in the spectrum of symptoms associated with worsening function, and to demonstrate at the biologic level a positive response to intervention. A biomarker is an objectively measured indicator that ideally is capable of reflecting normal, at-risk, and disease states as well as response to a therapeutic intervention. Combining different measures across biological, environmental, and social influences – the development of a "biosignature" – can help scientists understand the origins of disorders such as PTSD. Similar to the way physicians diagnose heart disease in patients by coupling blood test panels for cholesterol and triglyceride levels with measures of hypertension and high blood pressure, scientists may develop a biosignature for PTSD by combining cognitive measures and imaging data, serum and

cerebrospinal fluid markers, and highly relevant physiological markers for related symptoms.

A DoD research priority to enable identifying biomarkers is a systems biology approach, which involves the study and characterization of the perturbations that occur in biological molecules and pathways during the course of disease. Researchers funded through the DoD Systems Biology Initiative have identified a surprising number of potential biomarkers that may signal the presence of PTSD in humans. Beyond genomic investigations, another promising area is cognitive functioning. Basic cognitive tests of attention, memory, and executive functioning may be among the most promising predictors. Ongoing research is focused upon refining the numerous potential biomarkers down to a selected few that could be used to validate a gauge or measure response to intervention and a slowing or reversal of the disease trajectory.

A major new effort is the DoD's and VA's CAP. The CAP will allow investigators to jointly pursue research related to establishing surrogate and clinically actionable biomarkers for early PTSD diagnosis and treatment effectiveness. The CAP will seek to discover and validate PTSD biomarkers. CAP research activities will be informed by the newest scientific findings from investigations that are well under way.

Biomarkers for treatment effectiveness. The identification and validation of biomarkers for PTSD will ultimately enable the effectiveness of prevention and treatment interventions to be measured. Clinicians would be able to match individuals with the most effective prevention and treatment protocols, which may include medications, psychotherapy, and integrative and complementary medicine treatments alone or in combination. Research may reveal populations at risk for comorbidities, subsequently enabling the development and testing of interventions to prevent these problems as well as effectively treat these conditions if they occur. Thus, another important goal of the DoD is to facilitate the development of more personalized treatments, that is, individually tailored interventions with measurable responses.

Treatments. Psychotherapies and pharmacological medications are widely used to treat PTSD. When evidence-based psychotherapy treatment for PTSD is provided, up to 60% of patients will respond successfully. However, individual differences play an important role in the selection of the appropriate intervention. Individuals who do not respond to one treatment may be reluctant to try alternative treatments, and preferences relative to the types of therapies available (e.g., pharmacotherapy, psychosocial therapy, and complementary and alternative medicine) may have a significant impact on overall outcome. The use of combined therapies holds promise to address urgent mental health needs. In addition, individuals with PTSD

may present with substance abuse because alcohol or controlled substances may at least temporarily alleviate symptoms. Therefore, treatment research conducted will examine ways to optimally treat comorbid conditions (e.g., integrative versus sequential treatments). TBI will be examined as a comorbid condition. Thus, another DoD goal will be to improve and optimize current psychotherapeutic treatment regimens by using adjunctive techniques to enhance effectiveness and shorten treatment time to provide more rapid relief. There are no medications developed specifically for the treatment of PTSD. The two medications approved for PTSD (the antidepressants sertraline and paroxetine) show, at best, modest efficacy. Many medications are used off label to treat PTSD symptoms and lack the scientific evidence that they are beneficial. Few treatment interventions target underlying biologic causes or mechanisms of the disease. Investment by the pharmaceutical industry in new medications for PTSD has declined in recent years. The DoD will pursue the development of therapeutics targeting biomarkers and mechanisms uncovered in the course of research as well as assess the utility of repurposed or "off-label" treatments. A well-studied example of this would be prazosin's ability to treat sleep disturbances in PTSD (prazosin is approved for treating hypertension). In addition, new partnerships (e.g., public-private collaborations) will be pursued to aid in the identification of biologically plausible pharmacological targets for the prevention and treatment of PTSD.

DoD Vision for Moving PTSD Treatment Research into Practice

The overall DoD research goals are to prevent PTSD or effectively treat the disorder. Individuals exposed to traumatic events would routinely participate in systematic evaluation on broad dimensions of risk with progressively intensive diagnostic evaluations. Results would be weighted/combined in an automated algorithm to determine risk for PTSD and associated comorbidities (especially substance related) and to inform care and follow-up. Evaluations would inform interventions targeted at mitigating negative psychological symptoms and consequences. Individuals seeking care for PTSD would undergo a thorough medical, psychiatric, and substance abuse history and assessment to yield a health risk profile ("biosignature") indicative of the underlying cause/type of impairment. The individual would then be matched to receive treatment known to target/address the specific underlying cause/type of his/her disorder. Throughout a course of treatment, effectiveness of any administered treatment(s) would be measured. Researchers would have knowledge of both fixed and modifiable systems, circuits, and molecules to focus treatment development and refinement studies. Any individual would thus receive treatment matched to his/her unique symptom profile, and clinicians would better monitor individuals' responses to treatments. Individualized and staged interventions would be planned to minimize severity of acute stress and prevent the development of PTSD. New interventions thus will move faster from discovery/development to use in clinical care based on the next years of scientific discovery articulated in this vision.

TBI: Biomarkers, Diagnosis, Mechanisms, and Treatment Research
TBI is a complex and heterogeneous injury. It can result in temporary symptoms or enduring disabilities, depending on the severity and location of the injury, the age at injury, and the number of injuries over time. Common disabilities resulting from TBI include difficulties with cognition, behavioral and mental health, communication, and sensory processing. Physical symptoms such as headaches and sleep disturbances are also observed following mTBI. Moderate and severe TBI also have been linked with long-term consequences such as increased risk for Alzheimer's-type dementia, symptoms of Parkinson's disease, and the decreased ability to maintain social relationships. Factors contributing to slow progress in TBI research and thus limiting advances in clinical care include imprecise diagnostic tools and criteria used to classify the severity and type of TBI; a poor understanding of the impact of co-occurring conditions; gaps in understanding of mechanisms underlying injury and recovery; uncertainty about the ability of preclinical models to reproduce the spectrum of injuries and co-occurring conditions; and a nascent understanding of ways to harness neuroplasticity to increase repair and recovery. Notably, a context that poses a unique challenge is the role of multiple mechanisms ("blast-plus") as compared to single mechanism injuries (motor vehicle accident and athletic concussions).

Diagnostic tools and definitions. Current definitions of TBI as well as the tools currently used to diagnose it are imprecise. The DoD and the CDC, in partnership with the Brain Trauma Foundation, have funded an effort to develop a clinically useful definition of mTBI/concussion. Current definitions lack strong evidence to support their clinical utility to detect injury and predict outcomes. There is a need for leveraging newer and emerging imaging modalities such as diffusion tensor imaging and exploring the role of functional imaging in TBI research.

Biomarkers for identification, management, and treatment effectiveness. Preliminary evidence supports the potential for use of serum (protein) biomarkers to detect mTBI/concussion. Animal studies have indicated that changes in protein expression in white blood cells may identify inflammation related to TBI. However, identification of sensitive and specific biomarkers requires a more precise classification system for TBI, similar to the systems used for spinal cord injury and cancer. Biomarkers may inform research and clinical investigation as well as the management of both acute and chronic stages of TBI. Of particular interest are biomarkers indicative of the potential neurodegenerative effects of TBI, such as chronic traumatic encephalopathy and dementia. In short, biomarkers to detect injury, predict short- and long-term outcomes, and monitor response to treatment are all needed. Research studies are currently under way to identify and test biomarkers, but none are currently ready for clinical use.

Mechanisms. Following mTBI, most patients show some degree of functional improvement over time. However, relatively little is known about the mechanisms that underlie recovery or about ways to harness neuroplasticity to optimize improvements. Research is needed to identify patterns of brain structure and function that are associated with either recovery or poor response to treatment. Given emerging evidence regarding the chronic effects of TBI, a better understanding of the relationship between neurotrauma and neurodegeneration is needed to develop effective medical and rehabilitation interventions. The nature of brain injuries incurred in the current military conflicts has highlighted the need to better understand the effects of repetitive brain trauma on neuropathology, neurological function, and mental health.

Preclinical modeling. While basic science is essential to improve diagnostics and treatments for TBI, the ability to model TBI in animals has been less successful. None of the treatments found to be effective in preclinical animal models has successfully progressed through a Phase 3 clinical trial for clinical use in humans. The paucity of human post-mortem brain tissue available for study has not allowed sufficient comparison with that of animals. The differences in mass, shape, and white/gray matter ratios between rodent and human brains make it difficult to reproduce the effects of TBI in a manner that physically and structurally scales from rodents to humans. Animal models rarely address the short- and long-term comorbidities and/or chronic effects associated with TBI nor do they clearly address the recovery/rehabilitation phase. Systems biology approaches that integrate animal and human findings with computational modeling of injury mechanisms and high performance computing have the potential to enable previously impossible levels of cross-correlation and analysis of research data. A coordinated military, veteran, and civilian brain donor registry and tissue banking system to make post-mortem tissue available for research purposes is critical for guiding the development and validation of animal models, especially for mTBI.

Treatments. More than 30 clinical trials of TBI pharmacological therapies have failed to produce a U.S. Food and Drug Administration-approved treatment for TBI. There is limited evidence of the effectiveness of nonpharmacological interventions, including rehabilitation treatments, due in part, to underpowered studies and the paucity of validated assessment tools that are sensitive enough to detect treatment effects. Therapies may need to be customized to an individual's injury, predisposing factors, and co-occurring conditions and involve a combination of pharmacological and nonpharmacological interventions.

Co-occurring conditions. Major challenges to mechanistic and treatment-related research on TBI include difficulties in separating the effects of PTSD and other comorbidities, such as sensory, endocrine, cognitive, behavioral, and sleep dysfunctions and substance abuse, from the CNS injury itself. In other words, the

symptoms and sequelae of TBI can overlap with many other disorders. The common approach to intervention—independently treating symptoms associated with each diagnosis—is known to be less than optimal and is, in many cases, ineffective. Therefore, each domain in which there is a deficit requires a targeted, integrated approach for therapy. Additionally, research is needed to identify effective models of treatment for persons with TBI who also have co-occurring conditions.

DoD Vision for Accelerating TBI Research to Improve Health Care and Outcomes

The overall DoD goal for TBI research is to identify evidenced-based therapies that are effective in maximizing short- and long-term health and function and community participation and reintegration for persons with TBI. Effective treatments are needed to address the range of injury types and severities, the presence of co-occurring conditions, and the realities of access to care. To achieve this goal, it is necessary to make advances in several key areas related to diagnosing and characterizing the injury, measuring treatment effects, and understanding the mechanisms underlying injury and recovery, including the relationship between neurotrauma and neurodegeneration. Specifically, a clinically relevant classification system for TBI is required across the spectrum of injury severities, age, and chronic conditions, including milder single and repetitive injuries. Validation and standardization of existing and emerging tools and biomarkers for TBI and associated comorbidities are needed including: diagnostic biomarkers to identify those who have sustained a TBI; prognostic biomarkers to predict who will fully recover and who will develop sequelae, including dementia; and pharmacodynamic biomarkers to monitor the biologic response to therapy. More sensitive, reliable, and efficient tools ("gold standards") are essential for evaluating the effectiveness of treatments for TBI. These are needed for all outcome domains including physical, cognitive, and psychosocial functioning and quality of life. In parallel with the foundational research described earlier, achieving the vision for TBI research requires concurrent investigation of existing promising and new treatments, including rehabilitation interventions. Ultimately, successful translation of TBI research will result in improved quality of life for those with TBI and their families.

DoD Suicide Prevention Research

Suicide prevention is a top DoD research priority, and it benefits from cross-agency, collaborative efforts to maximize the ability to address the problem effectively. Suicide is the tenth leading cause of death in the United States, claiming twice as many lives per year as homicide. When not specified otherwise, suicide is defined herein as including completed suicides, suicide attempts, and suicide ideation. Suicide attempts are up to 30 times more common than suicide deaths and are more frequent among younger persons. Having made a suicide

attempt is one of the most highly predictive factors for later suicide death. Individual characteristics, such as a history of childhood abuse and mental and/or substance use disorders, can interact with current or ongoing stressors (e.g., relationship disruptions, financial or social losses, and shameful experiences) to increase suicide risk. The suicide rate has been rising in recent years, both in civilian and military communities. Because individuals become suicidal for many different reasons, and not all individuals in suicidal crises will be seen in health care settings, multiple intervention approaches in multiple contexts are needed. Analyses to date indicate that no single factor has emerged as predictive of suicide in the military population. Some factors (such as repeated deployment) thought to be contributing to the increase in suicides in recent years have not been found to drive this increase (e.g., many suicides precede deployment). Almost half of the accidental and undetermined deaths investigated in the Army during 2006–2009 involved drugs or alcohol, and three-quarters of these deaths involved prescription drugs; however, the exact role of substance use in these deaths is not understood. Some studies have shown an association between suicide and TBI. However, the low base rate of suicide makes disentangling this challenging. Pre-existing factors may be a stronger contributor to suicide risk compared to TBI, Overall, factors leading to suicide are extremely complex and research is under way to better understand what role concussions may play.

Many individuals who die by suicide are seen in health care systems close to time of death. Evidence demonstrates that providing continuity of care through transitions (within a health care system and from military to civilian settings) is important. Other health care system improvements that reduce suicide risk include providing 24-hour crisis services, addressing poor treatment adherence and managing patients with comorbid substance use disorders, and providing regular training to frontline clinical staff on the management of suicide risk.
Factors that may help reduce suicide have been identified. For example, limiting access to lethal means significantly lowers suicide risk (e.g., restricting access to prescription drugs, limiting access to guns, using gun locks). Furthermore, treatments such as psychotherapies focused on mitigating suicidal thoughts among suicide attempters have been shown to reduce attempts by half in the 12 months following treatment. Small proof-of-concept studies show promise for fast-acting medications (e.g., ketamine) in reducing suicide ideation, but more research is needed. Longer-term research is needed to better understand the factors that build resilience and offer protection from suicidal behaviors and promote wellness and recovery. The DoD and NIMH jointly initiated Army STARRS to examine how psychosocial, biological, and genetic factors convey risk/resilience for suicide, as well as related conditions (e.g., mental health disorders and substance-related disorders). The Military Suicide Research Consortium was created by the DoD to develop and validate effective interventions to prevent suicide among active duty service members and veterans. It is a multidisciplinary collaborative consortium

on suicide prevention research, including VA and academic researchers. The Defense Suicide Prevention Office's Translation and Implementation of Evaluation and Research Studies (TIERS), which involve the DoD, military services, VA, and NIMH, translates knowledge accrued from evaluation and research studies into practical guidelines for military leaders, chaplains, and clinical and nonclinical support personnel, which will benefit Service members, veterans, and their families. A joint VA-DoD database of suicide history and health care information is under development to serve programmatic evaluation needs.

DoD Vision to Advance Suicide Prevention Research

The overall DoD goal for suicide prevention research is to achieve a significant reduction in attempted and completed suicides in military populations. The hope is that with new knowledge gained from research applied to practice, an individual who has made a suicide attempt or has suicidal thoughts would receive life saving care. Such an individual would be identified early either in their community or through their health care systems that would provide evidence-informed evaluations to include suicide screening and monitoring of stressors that might elevate an individual's risk. Once identified, patients would be matched to the appropriate level of immediate effective care and follow-up including safety planning throughout all levels of the quality care system. Malleable risk factors (e.g., reduced substance use, improved problem solving) that are identified could be targeted and help to avert reattempts. Prevention programs would exist that build resilience, reduce risk, and prevent the emergence of suicidal behaviors, and these programs would be implemented in diverse systems of care and populations based on emerging evidence.

Sharing PTSD, TBI, and Suicide Prevention Research Data

Access to study-level data for the purpose of secondary data analysis is important for research in general. Sharing of data allows researchers to increase the amount of data that can be combined or compared. Many smaller sized studies are able to involve only a modest number of participants; therefore the ability to share data when appropriate will increase the power for analyses and potentially accelerate research progress. In addition, large scale studies provide a platform for rich secondary data analyses when data sharing is accomplished. The FITBIR Informatics System has been established to provide a data repository for TBI clinical research. FITBIR was funded by the DoD and subsequently developed and managed by the NIH. Clinical data are entered into FITBIR utilizing the TBI CDEs, which were developed to allow greater comparability of TBI research data. Additionally, the TBI CDE project is developing data standards to allow expansion of FITBIR to preclinical work, enabling advancement of preclinical knowledge and improved modeling of TBI. This data repository decreases costs to the researcher, standardizes the collection of research data, and allows access to

researchers outside the original research studies to re-analyze and compare data across studies.

DoD Vision for Research Data Sharing

Research data sharing, ideally, would be collaborative and promote team science to more rapidly and effectively fill gaps in knowledge that will ultimately improve health care and outcomes. Research scientists and clinicians across the MHS and federal agencies would be able to submit and access data in a participatory manner in order to test new hypotheses, combine data sets for meta-analysis, and compare and contrast findings across disorders, the lifespan, and the continuum of care. Research data and protocols would be standardized to the greatest extent possible, and also aligned with clinical data to enable greater integration of research and clinical practice.

Conclusion

Scientific progress is incremental and takes time, but Service members and their family members need more effective treatments immediately, so our research mission is urgent. Research studies will plan for integration of findings into health care systems to address the goal of improving access to mental health services. The MHS will strive to have the embedded capability of evaluating the programs they are implementing, to determine their effectiveness in a specific setting, and to identify areas in which additional research is needed. This will be the MHS platform to integrate and embed emerging evidence-based practices in a "learning health care system," one in which health care providers, systems, and patients participate in the generation of knowledge on trends in health and illness, the identification of best practices for screening, assessment, and intervention, and the assessment of the impact of practice changes.

I am both pleased and proud to be here with you today to represent the men and women of the Military Health System, and I look forward to answering your questions.

Jonathan Woodson

Assistant Secretary of Defense (Health Affairs) & Director of TRICARE Management Activity

Dr. Jonathan Woodson is the Assistant Secretary of Defense for Health Affairs and Director, TRICARE Management Activity. In this role, he administers the more than $50 billion Military Health System (MHS) budget and serves as principal advisor to the Secretary of Defense for health issues. The MHS comprises over 133,000 military and civilian doctors, nurses, medical educators, researchers, healthcare providers, allied health professionals, and health administration personnel worldwide, providing our nation with an unequalled integrated healthcare delivery, expeditionary medical, educational, and research capability.

Dr. Woodson ensures the effective execution of the Department of Defense (DoD) medical mission. He oversees the development of medical policies, analyses, and recommendations to the Secretary of Defense and the Undersecretary for Personnel and Readiness, and issues guidance to DoD components on medical matters. He also serves as the principal advisor to the Undersecretary for Personnel and Readiness on matters of chemical, biological, radiological, and nuclear (CBRN) medical defense programs and deployment matters pertaining to force health.

Dr. Woodson co-chairs the Armed Services Biomedical Research Evaluation and Management Committee, which facilitates oversight of DoD biomedical research. In addition, Dr. Woodson exercises authority, direction, and control over the Uniformed Services University of the Health Sciences (USUHS); the Armed Forces Radiobiology Research Institute (AFRRI); the Defense Center of Excellence for Psychological Health and Traumatic Brain Injury (DCoE); the Armed Forces Institute of Pathology; and the Armed Services Blood Program Office.

As Director, TRICARE Management Activity, Dr. Woodson is responsible for managing all TRICARE health and medical resources, and supervising and administering TRICARE medical and dental programs, which serve more than 9.6 million beneficiaries. Dr. Woodson also oversees the TRICARE budget; information technology systems; contracting process; and directs TRICARE Regional Offices (TRO). In addition, he manages the Defense Health Program (DHP) and the DoD Unified Medical Program as TRICARE director.

Prior to his appointment by President Obama, Dr. Woodson served as Associate Dean for Diversity and Multicultural Affairs and Professor of Surgery at the Boston University School of Medicine (BUSM), and senior attending vascular surgeon at Boston Medical Center (BMC). Dr. Woodson holds the rank of brigadier general in the U.S. Army Reserve, and served as Assistant Surgeon General for Reserve Affairs, Force Structure and Mobilization in the Office of the Surgeon General, and as Deputy Commander of the Army Reserve Medical Command.

Dr. Woodson is a graduate of the City College of New York and the New York University School of Medicine. He received his postgraduate medical education at the Massachusetts General Hospital, Harvard Medical School and completed residency training in internal medicine, and general and vascular surgery. He is board certified in internal medicine, general surgery, vascular surgery and critical care surgery. He also holds a Master's Degree in Strategic Studies (concentration in strategic leadership) from the U.S. Army War College.

In 1992, he was awarded a research fellowship at the Association of American Medical Colleges Health Services Research Institute. He has authored/coauthored a number of publications and book chapters on vascular trauma and outcomes in vascular limb salvage surgery.

His prior military assignments include deployments to Saudi Arabia (Operation Desert Storm), Kosovo, Operation Enduring Freedom and Operation Iraqi Freedom. He has also served as a Senior Medical Officer with the National Disaster Management System, where he responded to the September 11th attack in New York City. Dr. Woodson's military awards and decorations include the Legion of Merit, the Bronze Star Medal, and the Meritorious Service Medal (with oak leaf cluster).

In 2007, he was named one of the top Vascular Surgeons in Boston and in 2008 was listed as one of the Top Surgeons in the U.S. He is the recipient of the 2009 Gold Humanism in Medicine Award from the Association of American Medical Colleges.

STATEMENT BY

PATRICIA D. HOROHO

THE SURGEON GENERAL

UNITED STATES ARMY

BEFORE THE

HOUSE COMMITTEE ON ARMED SERVICES

SUBCOMMITTEE ON MILITARY PERSONNEL

FIRST SESSION, 113TH CONGRESS

MENTAL HEALTH RESEARCH

APRIL 10, 2013

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HOUSE COMMITTEE ON ARMED SERVICES

Chairman Wilson, Ranking Member Davis and distinguished members of the subcommittee, thank you for the opportunity to appear before you to discuss the Army's research initiatives to improve Soldier readiness and resilience and highlight the incredible work of the dedicated men and women with whom I am honored to serve. On behalf of the over 150,000 dedicated Soldiers and civilians that make up Army Medicine, I extend our appreciation to Congress for the support faithfully given to military medicine, which provides the resources we need to deliver leading edge health services to our Warriors, Families and Retirees.

Strategic Overview: Invisible Wounds of War

The unprecedented length and persistent nature of conflict over the past eleven years have tested the capabilities and resilience of our Army. The longest period of war in our Nation's history has undeniably led to physical and mental wounds to the men and women serving in the Army – and to their Families. The majority of our Soldiers have maintained resilience during this period. However, the stresses of increased operational tempo are evident in the increased demand for Behavioral Health Services and high suicide rate. The Army is keenly aware of the unique stressors facing Soldiers and Families today and continues to address these issues on several fronts. Taking care of our own—mentally, emotionally, and physically—is the foundation of the Army's culture and ethos.

Traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD) have been characterized in the public as the signature wounds of Operation Enduring Freedom and Operation Iraqi Freedom. While physical injuries may be easier to see, "invisible wounds" such as TBI, PTSD, and depression take a significant toll on our service members. And yet, to the individuals who suffer from these wounds, and those who care for them, they are anything but invisible. The Army and Army Medicine are actively engaged in reducing stigma and upholding our collective responsibility to raise national awareness regarding traumatic brain injury and mental health conditions including PTSD. We anticipate the need for mental health services will only increase in the coming years as the Nation deals with the effects of more than a decade of conflict.

Behavioral health problems, traumatic brain injury, and suicide, while often described as "invisible wounds of war," are not unique to a theater of combat or to the military – they are National issues. Consistent with National and military health system goals, the Army seeks to further understand and improve the prevention, diagnosis and treatment of these conditions through clinical and scientific research - paving the way for improved health, function and quality of life for those with PTSD, TBI, and co-occurring conditions, and to reduce the incidence of suicide.

"Medicine is the only victor in War"

History is replete with examples of war serving as a catalyst for medical innovation and of battlefield medicine producing advances in civilian healthcare. Plastic surgery was a result of treating the horrors of mustard gas and facial wounds during World War I. The specialty of infectious diseases evolved from efforts to combat debilitating infections in the trenches during World War I. Blood management and utilization were greatly improved during World War II. Civilian life flight came from advances in helicopters and air ambulance doctrine started in Korea and honed in Vietnam. These wars have also led to tremendous advances in delivery of life-saving medicine on the battlefield. One of the unique features of these wars has been the intense attention on invisible wounds of war, and for the first time research has led directly to changes in how mental health services are delivered in the military.

A prominent example in the mental health arena is COL Albert J. Glass who served as a psychiatrist during World War II, the Korean War, and during the 1960s. He studied treatment of psychological trauma, forward treatment and the benefits of early assessment and ease of treatment. Following retirement, COL Glass wrote about preventive mental health care and noted "the more civilian psychiatry becomes oriented toward prevention, the more it has borrowed from the techniques of military psychiatry." He stressed the inclusion of patients in a non-cloistered area and noted that isolation from the community "often deepened a patient's psychological trauma." He and fellow colleagues changed the course of treatment for mental illness from isolation to that of inclusion with community centers replacing secluded sanitariums.

Medical research conducted by the U.S. Army continues to lead to advancements that benefit civilian medical practice worldwide.

Dealing with the Consequences of War

More than a decade of war has led to tremendous advances in knowledge and care of combat-related wounds, both physical and mental. The US Army Medical Research and Materiel Command (MRMC) is leading Army Medicine in scientific research. We have ongoing research focused on establishing more effective methods for diagnosis and treatment of the health-related consequences of war, including TBI, behavioral health care, PTSD, burn and other disfiguring injuries, chronic pain, and limb loss.

From 2001-2006, MRMC, predominantly through Army core funding, the Peer-Reviewed Medical Research Program and Congressional Special Interest earmarks, funded modest investments in psychological health (PH), traumatic brain injury, and suicide research totaling $83M. Key studies that achieved National visibility included the Walter Reed Army Institute of Research (WRAIR) Land Combat Study, Mental Health Advisory Team research in Iraq and Afghanistan, and the 20-year longitudinal Millennium Cohort Study. These efforts led to greater awareness of the scope of the problem with particularly important findings related to stigma and barriers to care. This research led directly to policy changes, including the post-deployment health re-assessment (PDHRA), revision of combat stress control doctrine and treatment on the battlefield, and changes in health care delivery to reduce barriers. TBI research during this period focused mainly in characterizing the importance of this condition, developing blood biomarkers, researching neuroprotection strategies, and identifying a prototype screening tool that was ultimately added to the PDHA in 2008.

As the impact of the "invisible wounds" of the war became increasingly evident, Congress significantly increased funding for critical research. Since 2007, the total investment in Psychological Health alone is approximately $716 million, supporting more than 400 research studies. The majority of these funds were from Congressional Special Interest (CSI) augmented by Core Defense Health Program (DHP) and Core Army funds. Of these research studies, approximately 60% support PTSD research

($427M, 257 studies), 17% support suicide prevention research ($123M, 36 studies), 10% support resilience research ($75M, 39 studies), 8% support Family related research ($55M, 37 studies), 4% support military substance abuse ($27M, 30 studies), and 1% support research to prevent violence within the military ($10M, 4 studies).

The increase in TBI research funding has been equally significant. Since 2007, the investment in TBI research has totaled $710 million and supported more than 500 research studies, with the majority of the funding directed at prevention, screening, diagnosis, and treatment. The majority of these funds were from CSI augmented by Core DHP and Core Army funds. Of the total TBI research studies, 26% support basic science and epidemiology Foundational Science ($135M, 131 studies), 31% support prevention and screening ($211M, 160 studies), 29% support clinical treatment ($253M, 149 studies), 12% support follow-up care ($70M, 59 studies), and 1% support service research $5M, 6 studies) and 1% on post recovery ($35M, 5 studies).

The Army is approaching the peaks of knowledge and deliverables from FY07 and FY08 PH/TBI research. From the initial 2007 and 2008 investment, approximately 124 studies have closed out and another approximately 250 studies are scheduled to be closed out by the end of calendar year 2014. Although the average time to translate research into clinical practice is typically more than 16 years, results from the initial studies funded in 2007 that are already informing the way we care for Servicemembers as well as new lines of research. Examples include validation and refinement of screening tools that are now used throughout the deployment cycle and primary care clinics, enhanced treatment efforts in primary care, and validation of new treatments such as the use of a blood pressure medication called Prazosin for nightmares associated with PTSD,

The past decade of research has guided health policy, clinical practice guidelines, preventions and treatment interventions. Multiple programs have been implemented in theater and post-deployment to enhance resiliency, address combat operational stress reactions and behavioral health concerns. However, early identification and treatment of PTSD and TBI remain two of the most challenging areas of wartime medicine. With

timely screening and the right treatment most Servicemembers and Veterans will go on to live productive, fulfilling lives. As a Nation, this is an opportunity for us to lead the way in breaking the silence – to encourage those who suffer behavioral health issue to ask for help. We have learned that combat stress and PTSD resulting from deployment are treatable and curable with proper care; and the majority of Servicemembers return to productive and engaging lives.

I would like to highlight a few policies and programs that are impacting health care of our Soldiers today which were guided by medical research efforts.

In the area of traumatic brain injury, research findings directly affected policy and changed the way the Military Acute Concussion Evaluation (MACE) is used and administered in the deployed environment. For example, the latest version of the MACE, released in 2012, now includes additional word lists to test memory as well as a component to test for balance deficits. Key neuro-imaging indications were incorporated within the concussion management algorithms from research published in the New England Journal of Medicine and three Magnetic Resonance Imaging (MRI) machines are currently in use in Afghanistan to advance TBI science. Commanders throughout Afghanistan have implemented a mandatory TBI screening and rest policy while medical providers and Concussion Care Centers facilitate provide proper treatment and recovery, resulting in a 98% return to duty rate.

Army Medicine collaborates with TBI experts to regularly update TBI clinical guidelines that reflect the latest scientific research and best practices. We have created a system to review and analyze the large number of research projects to identify promising findings that can be quickly translated into actionable policy or clinical practice.

The immediate goal in TBI diagnostics has been to identify the unique biological effects of TBI and leverage that knowledge to deliver more effective objective diagnostic tools to provide information on the presence and severity of brain injury. There is currently no objective diagnostic test to detect mild TBI. In the past 5 years over sixty different technologies have been evaluated to meet this challenge.

We are working on a capability for medics in austere combat environments to administer a simple test to detect TBI. The Biomarker Assessment for Neurotrauma Diagnosis and Improved Triage System (BANDITS) program is developing a blood test for brain cell damage, which may aid in the clinical assessment of patients with TBI. BANDITS has completed pilot and feasibility studies and has launched its pivotal trial which will enroll up to 2000 patients with mild, moderate and severe TBI. This capability has applications beyond the military and could be used to detect concussions in civilian sports environments.

Additionally, discovery efforts are underway to identify markers that can provide feedback on the effectiveness of treatments. Some markers may be able to perform multiple functions. A pivotal trial is now underway to evaluate new technology that uses quantitative electroencephalography as another potential diagnostic tool. Studies are also looking at smooth pursuit eye tracking in assessment of attention, vision and motor planning networks within the brain. One problem with TBI measures is that they may also show changes for other reasons, and studies are carefully assessing potential confounders such as sleep deprivation, age, stress, and attention deficit hyperactivity disorder.

Similar to our approach to concussive injuries, Army Medicine harvested research findings to inform the identification and treatment of combat stress and PTSD.

The ongoing examination of in-theater behavioral health issues led to fundamental changes in behavioral health care delivery, and provided valuable information to senior military leaders. The Mental Health Advisory Team (MHAT) is an Army supported mental health advisory team that deployed to Iraq and Afghanistan to assess the behavioral health of deployed service members, the quality of and access to BH care, and to recommend changes to improve the BH and BH services to our deployed service members. To date, eleven MHATs have been conducted in Iraq and Afghanistan since the beginning of OIF1.

Results from MHATs have led to numerous evidence-based recommendations that have impacted policy (e.g. dwell-time and deployment length), improved distribution of

mental health resources and services throughout theater, impacted the number of mental health personnel in theater, and modified the doctrine of the Combat and Operational Stress Control (COSC). WRAIR researchers also conducted systematic validation research (randomized trials) of post-deployment training modules that led to Army-wide implementation of Battlemind Training (now part of Comprehensive Soldier Fitness Resilience Training) across the deployment cycle.

A recently completed trial of the medication Prazosin for nightmares associated with combat-related PTSD in active duty Soldiers returned from Iraq and Afghanistan, supports the recently revised DoD/VA Clinical Practice Guideline (CPG) that recommends adjunctive treatment with Prazosin for nightmares.

DHP supported research also contributed to the new PTSD definition in the upcoming 5th edition of the American Psychiatric Association's Diagnostic and Statistic Manual of Mental Disorders (DSM-V).

Research has informed the development of new CPGs, to include the VA/DoD PTSD CPGs. Research results are being evaluated by the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) and other agencies for promulgation across the Department of Defense and Veterans Affairs. Within the next one to two years, the DoD expects to have further research supporting specific prevention and treatment interventions for PTSD and suicide. In particular, studies underway are focused on delivering PTSD treatment in an accelerated timeline so that the time it takes to complete treatment is reduced from 10-12 weeks to two weeks.

The true "costs" of mental health issues are the loss of productivity, decreased quality of life, and the strain on professional and personal relationships. Increasing resiliency decreases this cost burden. Some of the research is focused on optimizing currently existing PTSD treatments to increase efficiency and accessibility; investigators are examining the use of virtual reality technology to enhance therapy effectiveness. This PTSD treatment research is being done by numerous investigators at government organizations (e.g., VA Medical Centers, Uniformed Services University of the Health

Sciences), as well as in collaboration with leading academic centers, and private industry both nationally and internationally.

While we have made significant gains in the treatment and management of BH diagnoses such as PTSD, we still face challenges. Non-visible injuries continue to carry a stigma, especially among young Soldiers. The key to eliminating the stigma of seeking care for BH issues is engaged, involved leadership at every level. We have embedded behavioral health personnel within operational units across the Army to facilitate all of our efforts to reduce stigma and improve assessment and treatment.

The Embedded Behavioral Health program is a multidisciplinary behavioral health care model that provides community behavioral healthcare to Soldiers in close proximity to their units and in coordination with their unit leaders. Utilization of this model has demonstrated statistically significant reductions in: (1) inpatient behavioral health admissions; (2) off-post referrals; (3) high risk behaviors; and (4) number of non-deployable Soldiers for behavioral health reasons. Leaders have a single trusted behavioral health point of contact and subject matter expert for questions regarding the behavioral health of their Soldiers. Embedded team members know the unit and are known by the unit, knocking down access barriers and stigma commonly associated with behavioral healthcare in the military setting. Currently, 26 Brigade Combat Teams and 8 other Brigade Sized Units are supported by Embedded Behavioral Health Teams. Expansion of Embedded Behavioral Health teams to all operational units is anticipated no later than FY16.

Army Medicine has developed the Behavioral Health Data Portal (BHDP), a web based application, to track patient outcomes, patient satisfaction, and risk factors. The BHDP was rapidly deployed and trained at 31 Military Treatment Facilities by the end of last year. It provides improved patient tracking within behavioral health clinics, provides real-time information regarding Soldier's behavioral health readiness status, and enhances provider communication with Commanders to ensure optimal, coordinated behavioral health care. This portal will improve surveillance and our ability to assess program and treatment efficacy.

Suicide Research

Last year the Army lost 183 Soldiers to suicide. These tragic losses affect all those left behind, including fellow Soldiers, families, and communities. The strain on our people after years of persistent conflict has also manifested itself through high-risk behaviors, including acts of violence, excessive use of alcohol, drug abuse and reckless driving. Our mission extends far beyond suicide prevention, and we are actively involved in ensuring the highest quality care for Soldiers and their Families – 365 days a year.

In June 2013, the Army will enter its fifth year of the Army Study to Assess Risk and Resilience in Service members (Army STARRS) partnership with the National Institute of Mental Health (NIMH). This study represents the largest study of mental health, psychological resilience, suicide risk, suicide-related behaviors, and suicide deaths in military personnel ever conducted. The goal is to identify factors that put a Soldier at risk for suicide, and factors that provide resilience, at specific points of Army service and over time. This information will then be used to develop evidence-based, targeted intervention strategies to decrease the frequency of suicides in the Army.

During the initial years of Army STARRS, researchers analyzed information from nearly 40 Army and Department of Defense datasets, spanning more than a billion data points, on all 1.6 million Soldiers who served on active duty from 2004-2009. In addition, the team is collecting data from volunteer Soldiers from every component of the Force (Active Army and those Army National Guard and Army Reserve Soldiers on active duty) who are in all phases of Army Service (Soldiers in initial entry training, Soldiers before and after deployment, Soldiers in theater, and Soldiers assigned to installations worldwide). Extensive information is collected through surveys and psychological evaluations, blood samples, and through Army and DoD administrative records.

To date approximately 112,000 Soldiers have voluntarily participated in Army STARRS and approximately 52,000 have given blood samples. Researchers will analyze these samples to look at biological risk associated with a history of mental

illness and these samples could be used as a baseline for future studies. The size of these cohorts is unprecedented in military research; this grand scale will help our understanding of suicide risk and protective factors and the development of mental health disorders. The data will complement other survey and neurocognitive data to give researchers a more complete understanding of risk and resilience. Preliminary findings include analyses in the areas of deployments, enlistment waivers, unit combat deaths, unit suicides, marriage, private housing, age and education, rank, years of service, military occupational specialties, exposure to traumatic events, head/neck/blast injury, prescription drug abuse, mental health disorders and treatment, and suicide attempts. Researchers are using these findings to develop tools to help identify subsets of Soldiers who may be at elevated risk for suicidal behaviors. Army STARRS is currently working with the Army on analogous approaches to targeting prevention and treatment interventions for Soldiers with particularly elevated suicide risk.

In addition to Army STARRS, MRMC established the Military Suicide Research Consortium involving partnerships with leading suicide researchers that is focused on specific interventions to reduce suicides. Examples include the development and validation of a suicide assessment tool, validation of a brief cognitive behavioral therapy intervention, enhancement of follow-up care through smartphone apps or text messaging, and packaging of medications in blister packs rather than pill bottles.

Accelerating Progress through Collaboration

The Army is proud to contribute to the efforts of the Departments of Defense, Veterans Affairs, Health and Human Services, and Education, to develop the National Research Action Plan (NRAP) in response to the White House Executive Order released on August 31, 2012 on "Improving Access to Mental Health Services for Veterans, Service Members, and Military Families." Without question, improved data sharing between agencies, academic and industry researchers will accelerate progress and reduce redundant efforts without compromising privacy. Making better use of electronic health records will allow us to gain insight into the risk and mitigation of PTSD, TBI, and related injuries.

The DHP Research, Development, Test and Evaluation (RDTE) program has always involved DoD and VA collaboration. DoD currently provides a substantial portion of the research funding, from all sources, that supports VA scientists. In the past year, DoD provided more than $30.5 million to VA researchers for 351 projects. DoD currently funds VA scientists to investigate several high-priority topics, including: PTSD, alcohol abuse, resilience to mitigate combat stress and post-deployment reintegration problems, mental health of female Veterans (including military sexual assault), treatment of TBI and spinal cord injuries, treatment for amputations and improved prosthetics, visual and hearing impairments, rehabilitation, telemedicine, and illnesses in Veterans of the 1990-91 Gulf War and Veterans of OIF and OEF. VA scientists frequently partner with DoD scientists, who serve in a supporting role as co-investigators. Approximately 80% of the DHP RDTE research efforts underway have VA involvement through investigator participation.

More recently, the DoD and VA have been collaborating through large consortia and joint leveraging of infrastructure and resources. There are several large DoD funded consortia to address PTSD, suicide, and associated issues. In 2012, the DoD and VA partnered to synergistically fund and manage two large joint consortia focused on developing biomarkers for preventing, detecting, and more effectively treating PTSD, TBI and its chronic effects as well as associated co-occurring issues.

Preventing, detecting, and treating brain injuries is not only a military concern but also affects millions of families across the country to include those involved in competitive sports. Leveraging mutual interests with our key partners and stakeholders will advance efforts for military and civilian communities. In March 2013, the National Football League, General Electric, and Under Armour launched an unprecedented $60M research and innovation effort to accelerate brain injury detection and prevention. These corporations recognize the Army's subject matter expertise and will include them on medical advisory panels that will help guide clinical research efforts to ensure research efforts are not duplicated.

The Road Ahead

Military Medicine is at an important crossroad. We need to continue making deliberate, resource-informed decisions to ensure we meet the needs and challenges of today while preparing for tomorrow. We owe it to this generation of Soldiers and Families to help them deal with the consequence of war, long after the last Soldier departs Afghanistan. Our commitment to support Wounded Warriors and their Families must never waiver, and our programs of support must be built and sustained for the long road ahead - as the young Soldiers of today mature into our aging heroes of the future.

I'd like to leave you today with a story which illustrates the miracles which are possible from the investment in research and medical innovation.

Paul "Rob" Roberts joined the Army in 2003. On June 2, 2009, during his deployment to Afghanistan, his unit was performing a routine combat patrol when his vehicle was hit with an improvised explosive device (IED). The impact of the IED destroyed the vehicle and killed the driver, gunner, and interpreter. Staff Sergeant Roberts was the only survivor.

He sustained severe injuries from the explosion including third degree burns to his wrists and legs, second degree burns to his arms and face, and traumatic brain injury. He was evacuated to Bagram Air Force Base, and then eventually moved to the Army burn center in San Antonio, Texas.

Due to the tremendous research investments made in combat trauma, psychological health, and TBI, SSG Roberts recovered from both his visible and invisible wounds. He was medically retired and successfully transitioned from military to civilian life. Following retirement, SSG(R) Roberts chose to continue his service to our Nation by assuming a position at the Federal Bureau of Investigation. His survival from his horrific injuries and ability to transition to civilian life is a direct result of the fruit borne by years of medical research.

In closing, a strong, decisive Army will be -- as it always has been -- the strength of our Nation. Behavioral Healthcare and resiliency are important factors in the readiness

of the Army. I am proud of Army Medicine's capable and compassionate team, evidence based practices and far-reaching programs which are key pillars of our commitment to a ready and resilient Army family.

In partnership with the Department of Defense, my colleagues on the panel today, the Department of Veterans Affairs, our civilian partners and the Congress, we will be prepared for tomorrow's challenges. Thank you again for the opportunity to testify before the committee and for your steadfast support to our Soldiers, Civilians, Families and Veterans. The Army Medicine team is serving to heal - and truly honored to serve them.

Lieutenant General Patricia D. Horoho

The Surgeon General and Commanding General of the United States Army Medical CommandLieutenant General Patricia D. Horoho assumed command of the U.S. Army Medical Command on December 5, 2011 and was sworn in as the 43rd Army Surgeon General on December 07, 2011. Her previous positions include Deputy Surgeon General, Office of The Surgeon General, Falls Church, VA, from 2010 to 2011; 23rd Chief of the U.S. Army Nurse Corps, from 2008 to 2011; Commander, Western Regional Medical Command, Fort Lewis, Washington, from 2008 to 2010; Commander, Madigan Army Medical Center, Tacoma, Washington, from 2008 to 2009; Commander, Walter Reed Health Care System, Washington D.C., from 2007 to 2008; and Commander, DeWitt Health Care Network, Fort Belvoir, Virginia, from 2004 to 2006.

Lieutenant General Horoho earned her Bachelor of Science in Nursing degree from the University of North Carolina at Chapel Hill in 1982. She received her Master of Science degree as a Clinical Trauma Nurse Specialist from the University of Pittsburgh. She is a resident graduate of the Army's Command and General Staff College and the Industrial College of the Armed Forces, where she earned a second Master of Science degree in National Resource Strategy. Other military assignments include Staff Nurse on a multi-service specialty ward, Staff and Head Nurse of a Level III emergency department, Evans Army Community Hospital, Fort Carson, Colorado; Nurse Counselor, 1st Recruiting Brigade (Northeast) with duty at Harrisburg and Pittsburgh Recruiting Battalions; Head Nurse of a 22-bed emergency department, Womack Army Medical Center, Fort Bragg, North Carolina; Chief Nurse and Hospital Commander of a 500-bed field hospital, 249th General Hospital, Fort Gordon, Georgia; Assistant Branch Chief, Army Nurse Corps Branch, United States Total Army Personnel Command, Alexandria, Virginia; Assistant Deputy for Healthcare Management Policy in the Office of the Assistant Secretary of the Army (Manpower and Reserve Affairs), Pentagon, Washington, D.C.; Deputy Commander for Nursing and Commander of the DeWitt Health Care Network, Fort Belvoir, Virginia; and Deputy Commander for Nursing, Walter Reed Army Medical Center and North Atlantic Regional Medical Command, Washington, D.C. In 2011, Lieutenant General Horoho deployed with I Corps, as the Special Assistant to the Commander, International Security Assistance Force Joint Command, Kabul Afghanistan.

Recognitions include being selected in 1993 by "The Great 100" as one of the top one hundred nurses in the State of North Carolina. In the same year, she was also selected as Fort Bragg's Supervisor of the Year. She deployed to Haiti with the Army's first Health Facility Assessment Team. In 1998, she co-authored a chapter on training field hospitals that was published by the U.S. Army Reserve Command Surgeon. Lieutenant General Horoho was honored on December 3, 2001, by Time Life Publications for her actions at the Pentagon on September 11, 2001. On September 14, 2002, she was among 15 nurses selected by the American Red Cross and Nursing Spectrum to receive national recognition as a "Nurse

Hero." In 2007, she was honored as a University of Pittsburgh Legacy Laureate. In April 2009, she was selected as the USO's "Woman of the Year," and in May 2009, she became an affiliate faculty with Pacific Lutheran University School of Nursing, Tacoma, Washington. In May 2010, the Uniformed Services University of Health Sciences appointed her as Distinguished Professor in the Graduate School of Nursing. In 2011, University of North Carolina School of Nursing selected her as the Alumna of the Year. On February 24, 2012, she was recognized by the University of Pittsburgh as a Distinguished Alumna Fellow. Lieutenant General Horoho was awarded the Doctor of Public Service in Nursing Honoris Causa from University of Pittsburgh, and this year she was recognized as a Fellow of the American Academy of Nursing. Presently she serves as a member of the Uniformed Services University Board of Regents.

Lieutenant General Horoho's awards and decorations include the Distinguished Service Medal, Legion of Merit (2 OLC), the Bronze Star Medal, Meritorious Service Medal (6 OLC), Army Commendation Medal (3 OLC), Army Achievement Medal (1 OLC), Armed Forces Expeditionary Medal, Afghanistan Campaign Medal and various service and unit awards. She served as the Head Nurse of Womack's Emergency Department when the hospital was awarded the Superior Unit Citation during the Pope AFB Crash in 1994. She is also authorized to wear the DA Staff Badge and is the recipient of the Order of Military Medical Merit Medallion.

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STATEMENT OF

VICE ADMIRAL MATTHEW L. NATHAN, MC, USN

SURGEON GENERAL OF THE NAVY

BEFORE THE

SUBCOMMITTEE ON MILITARY PERSONNEL

OF THE

HOUSE ARMED SERVICES COMMITTEE

SUBJECT:

MENTAL HEALTH RESEARCH

APRIL 10, 2013

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THE HOUSE ARMED SERVICES COMMITTEE

Chairman Wilson, Ranking Member Davis, distinguished Members of the Subcommittee, thank you for the opportunity to appear before you today to discuss mental health research, including our progress, opportunities and challenges. We are grateful for your leadership and support in this area as it has positively impacted our ability to care for our service members and their families. All of us in military medicine are dedicated to ensuring that the resources you have provided us translate into effective treatment modalities and advances in caring for our Sailors and Marines. Within Navy Medicine, our priority is to develop efficient frameworks to quickly move demonstrated proven research and innovations to our clinicians as they promote, protect and improve the health of those entrusted to their care.

Strategic Priorities and Resources

Navy Medicine Research, Development, Testing and Evaluation (RDT&E) is foundational to our mission of force health protection. Cutting-edge RDT&E programs bolster both our current and future capabilities and help sustain a culture of excellence. Recognizing how important it is to keep pace with emerging requirements and leverage opportunities in these areas, I established a new flag officer-led Headquarters code for research and development, Deputy Chief for Research and Development. This strategy-driven realignment targets improved policy development, assessment, oversight and resource management in our RDT&E portfolio.

Our 2013 Navy Medicine Charted Course reflects strategic goals of (1) Readiness; (2) Value; and (3) Jointness. These key priorities are fully synchronized with our RDT&E efforts, particularly those focused on psychological health, traumatic brain injury and suicide prevention. All of us recognize the impact on our force and families brought about by 12 years of war and the increased operational tempo. In response to these challenges, we continue to invest in programs of support, treatment and research which are focused on building resiliency, navigating

operational stress and fostering psychological health. Navy Medicine's psychological health programs support the prevention, diagnosis, mitigation, treatment, and rehabilitation of post-traumatic stress disorder (PTSD) and other mental health conditions, including the seamless transition of service members throughout the recovery and reintegration process. Our efforts have targeted ensuring appropriate staffing, meeting access standards, identifying recommended and standardized evidence-based practices, reducing stigma and barriers to care and making sound investments in research. Within the context of our Psychological Health and Traumatic Brain Injury (PH-TBI) portfolio, we fund a broad variety of programs and projects, all falling under one of five priorities: Access to Care; Quality of Care; Resilience; Surveillance and Screening and Transition of Care

Our Clinical Investigations Programs (CIPs) are the core of the Navy Medicine PH-TBI translational research efforts. CIPs result in actionable intelligence for our providers on resilience building, stress reduction, prevention efforts, and psychological treatment interventions. These findings are disseminated via policies and clinical practice guidelines. Several of our military treatment facilities (MTFs) are actively engaged in PTSD and TBI clinical investigations studies. Over the last ten years, 39 human subject research projects have been completed, with 34 currently active.

Progress and Evaluation

Our priority remains translating our investments into advancements in caring for our service members and their families. Collectively, military medicine has done this exceptionally well in combat casualty care as evidenced by the unprecedented battlefield survival rates in our recent conflicts. We have leveraged research, advances in point of injury treatment, evacuation and clinical practices throughout the continuum of care to save lives. Our commitment remains to realize the same level of progress and success in caring for our personnel with PTSD, TBI and other related injuries. All of us must continue to undertake these efforts with a sense of urgency since it is our obligation to those entrusted to our care. We are making progress and I will briefly highlight some of our efforts:

- The *Traumatic Brain Injury and Related Disorders (TBIRD) Mobile Assessment Unit (MAU)* contains two fully equipped neuropsychological labs with computer technology. The MAU is capable of extending neuropsychological assessment services and providing surge-related services to bases where there is an established need. Most recently deployed to Naval Hospital Camp Lejeune, the TBIRD MAU has decreased wait time for neuropsychological evaluation (from three months to approximately two weeks for initial evaluation), and reduced the number of referrals to the community.

- The *Behavioral Health Needs Assessment Survey (BHNAS)* was initiated in 2007 to evaluate the mental health of deployed Individual Augmentee Sailors, including medical providers. BHNAS data are used to identify high-risk missions, develop counter-stress interventions that target specific missions and locations, direct research in operational stress, and provide in-theater estimates of the mental health need. The BHNAS is administrated by Naval Health Research Center (NHRC) for implementation by the Navy Mobile Care Teams (MCTs). The Navy MCT travels extensively throughout Afghanistan, regularly "outside the wire," providing training, consultation, focus groups, and unit-specific surveillance using the BHNAS. NHRC verifies, analyzes, and evaluates the BHNAS data and prepares reports promulgating findings and recommendations to Navy and Navy Medicine leadership to inform enterprise-wide policy and program development. Over 8,400 surveys have been completed to-date, with over 96% of the data being collected during deployment.

- *Impact of Marine Suicide on Family Survivors* is examining the post-suicide adjustment and needs of Marine spouses and families. A portion of the study includes interviews with spouses to determine, if in retrospect, they may have seen signs, symptoms, or signals that their Marine spouse was at risk for self-harm.

- *Psychological Health Pathways (PHP)* is an initiative managed by the Naval Center for Combat and Operational Stress Control (NCCOSC) to assess the treatment of PTSD and improve the psychological care of patients with PTSD and other disorders. PHP uses a standard assessment process to collect patient demographics, outcome measures, and treatment reviews, which inform treatment planning and progress, and assist in programmatic evaluation, resource allocation, clinic management, and population health questions. It provides real-time, evidence-informed data to improve the care provided to service members. Over 3,000 service members have participated in the PHP program, providing data that has enabled clinics to modify treatment to target symptoms that were not responding to prior treatment methods. For example, using PHP data at Naval Medical Center San Diego (NMCSD), we identified previously unknown significant sleep and depression symptoms. The providers were then able to implement changes to their programs to address these issues.

- *A Head-to-Head Comparison of Virtual Reality Treatment for Post-traumatic Stress Disorder:* This study compares Virtual Reality Exposure Therapy (VRET) to Augmented Exposure Therapy (AET). Thus far, 61 patients have completed treatment and multiple providers have been trained to deliver the therapy, impacting the availability of evidenced based care for service members.

- *Combat Stress Burden in Marine Infantry Personnel (Marine Resiliency Study; MRS)* documents the prevalence of PTSD and related conditions in combat-deployed Marines, along with the causes and clinical course of psychological disorders. Detailed analyses of biological, psychosocial, and environmental risk for post-traumatic stress (PTS) among ground combat forces is provided. As a result of this project's findings, it has garnered an endorsement by the I MEF Commanding General as a tool for maintaining visibility on emerging health concerns in combat deployers. Currently, the Marine Resiliency Study is completing analyses of the associations between TBI and PTSD. Longitudinal data indicates that, after controlling for other deployment factors such as combat intensity, deployment-related TBI generates (on average) a 27% increase in PTSD symptom severity.

In addition, NCCOSC-facilitated studies have been completed or are currently underway in several key areas. These include: (1) Effects of Antidepressants on Neuropsychological Function Related to Combat Performance; (2) Attention Retraining for Post-Traumatic Stress Patients; and (3) Military Detention Operational Prevention for Stress (MD-OPS).

NHRC has supported a variety of translational research projects related to PTSD and TBI. Of particular interest are NHRC findings (through BHNAS data) that leadership style and unit cohesion serve as protective factors in the development of PTSD after a traumatic event. These

findings have been briefed to Navy leadership, and have helped create a culture in which the prevention of PTSD is considered a leadership issue, as well as a clinical issue. NHRC is also attempting to ascertain the impact of neurofeedback therapy in helping resident PTSD patients at the Overcoming Adversity & Stress Injury Support (OASIS) clinic at NMCSD. Preliminary results suggest that biofeedback is an effective adjunct during PTSD treatment to lower anxiety and irritability during sessions. Work continues to assess how this translates to brain activity and longer term outcomes. NMCSD has also collaborated with several leading alternative medicine institutions on PTSD and related symptoms research, including research on complementary medicine interventions for active duty personnel who have been exposed to combat.

NHRC serves as the Department of Defense (DoD) Center for Deployment Health Research responsible for the Millennium Cohort Study (MILCO), the largest long-term health study in U.S. military history. The MILCO study began in 2001 and will continue through 2022, with a participation goal of 200,000 service members and 10,000 military family members. More than 50 percent of the participants have been deployed in support of the wars in Iraq and Afghanistan. Their input will enable researchers to evaluate data from before, during, and long after their deployments. Some of the areas we are analyzing include PTSD, TBI, depression, alcohol misuse, and respiratory illnesses.

Our Naval Medical Research Center (NMRC) laboratory has a robust program combining clinical work, operational assessment, and laboratory models characterizing the effects of repeated blast exposure, including linkages to PTSD and chronic traumatic encephalopathy. Some of these studies are designed to parallel the human studies research conducted with USMC high-risk populations (Breacher). Significantly, a single Breacher study in 2008 has grown into a program that includes seven separate multi-institutional studies. These studies make up a

platform for test and evaluation of emerging, field-able technologies in the assessment of exposure to blast and commensurate biological effects. In addition, Naval Hospital Camp Pendleton, Naval Hospital Camp Lejeune and Navy Medicine Operational Training Center are participating in DoD clinical research studies on the use of hyperbaric oxygen for symptoms following mild TBI, or post-concussion syndrome, in military personnel.

Our work continues to demonstrate promise and we see progress in several key areas including:

- Identifying new therapies and strengthening the evidence for existing prevention and treatment interventions.
- Utilizing surveillance practices to enhance communication, coordination, and detection.
- Integrating innovative technologies and alternative therapies with treatment and prevention efforts (e.g., telemedicine services).
- Developing and validating risk and resilience screening tools to guide interventions and mitigate negative behavioral health outcomes following traumatic exposure(s).
- Providing clinical and operational leaders information and strategies to facilitate early detection as well as improve outcomes after traumatic exposure(s).
- Capitalizing on data signals and surveillance outcomes to optimize effective decision-making and guide future mental health operations.

Careful monitoring and assessment is inherent in our on-going evaluation process. We are applying critical reviews through each phase and milestone to help ensure that our funded projects meet the intended objectives, and provide the potential for long-term value to our clinicians and patients. These assessments, which include internal evaluations, peer reviews and larger third-party evaluations, help us evaluate the efficacy of our investments and reduce potential redundancies.

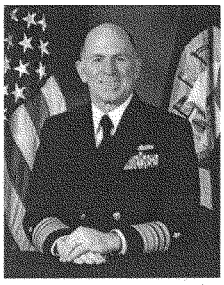
Sound partnerships and collaborations are critical to our efforts in deriving best value from our research efforts in mental health, traumatic brain injury and suicide prevention. Within Navy Medicine, we are working in close collaboration with the Army, Air Force, DoD and the Centers of Excellence. We recognize that we must continue to work collaboratively with our

Department of Veterans Affairs colleagues, other federal agencies and leading academic and private institutions in addressing some of the most challenging issues facing our returning service members. There is no doubt that the complex problems of delivering care to a growing beneficiaries population in a resource-constrained environment demands that we leverage our partnerships, deploy best clinical and business practices, and make full use of rapidly accelerating technologies.

Way Forward

Our strategic priorities of Readiness, Value and Jointness will guide the way forward for mental health research funding, collaboration, dissemination and application. Our efforts must continue to support our mission of force health protection, provide value in quality and outcomes, and support our collaborative efforts. Collectively, our investments must build on existing research, capitalize on the synergy of coordinated studies and trials, and transition our efforts from "the bench to the bedside". The challenging work that Navy Medicine researchers are performing has a direct impact on the treatment we are able to provide our service members now and will be instrumental in shaping our future. Maintaining our mission readiness, meeting the needs of our beneficiaries, and deriving best value from our research investments will require careful planning, sharp execution and good stewardship of our RDT&E resources. We are committed to finding solutions to challenging problems and providing significant innovations and discoveries to enhance clinical diagnostics, therapies and procedures to improve the outcomes of our injured Sailors and Marines.

On behalf of the men and women of Navy Medicine, I want to thank the Committee for your tremendous support, confidence and leadership. It has been my pleasure to testify before you today and I look forward to your questions.



VADM Matthew L. Nathan
Vice Admiral Nathan is the 37th surgeon general of the Navy and chief of the Navy's Bureau of Medicine and Surgery.

Nathan received his Bachelors of Science from Georgia Tech and his M.D. from The Medical College of Georgia in 1981. He completed Internal Medicine specialty training in 1984 at the University of South Florida before serving as the Internal Medicine Dept Head at Naval Hospital Guantanamo Bay, Cuba. In 1985 Nathan transferred to Naval Hospital, Groton, Connecticut as leader of the Medical Mobilization Amphibious Surgical Support Team. In 1987, Nathan transferred to Naval Medical Center San Diego as Head, Division of Internal Medicine with additional duty to the Marine Corps, 1st Marine Division.

In 1990 he served as a Department Head, Naval Hospital Beaufort, South Carolina before reporting to Naval Clinics Command, London, U.K. where he participated in military-to-military engagements with post-Soviet Eastern European countries. In 1995, he was assigned as specialist assignment officer at the Bureau of Naval Personnel, providing guidance to over 1,500 U.S. Navy Medical Corps officers. In 1998 he accepted a seat at the Joint Industrial College of the Armed Forces located in Washington, D.C., graduating in 1999 with a Masters in "Resourcing the National Strategy." Nathan went on to serve as the Fleet Surgeon, Forward Deployed Naval Forces, Commander, U.S. 7th Fleet, aboard the flagship USS Blue Ridge (LCC 19), out of Yokosuka, Japan. In 2001, he transferred as Deputy Commander, Navy Medical Center Portsmouth, Va.

In 2004 Nathan assumed command of Naval Hospital Pensacola with additional oversight of 12 clinics in 4 states where he oversaw Navy medical relief efforts following hurricanes Ivan, Dennis, and Katrina. Despite all facilities receiving crippling blows; his command still garnered the TRICARE/DOD award for "highest patient satisfaction in a medium sized facility". In June 2006, he transferred as the Fleet Surgeon to the commander, U.S. Fleet Forces Command, instrumental in organizing the Fleet Health Domain integration with the Fleet Readiness Enterprise while providing medical global force management. In 2007, Nathan was assigned as Commander, Naval Medical Center Portsmouth and Navy Medicine Region East with command of over 18,000 personnel and an operating budget exceeding $1.2 billion.

Nathan also served as Commander, Walter Reed National Military Medical Center and Navy Medicine, National Capital Area where he was the Navy component commander to the largest military medical integration and construction project in DOD history.

Nathan is board certified and holds Fellow status in the American College of Physicians and the American College of Healthcare Executives. He also holds an appointment as Clinical Professor of Medicine at the Uniformed Services University of the Health Sciences. He is a recipient of the American Hospital Association "Excellence in Leadership" award for the Federal Sector.

Nathan's personal awards include the Distinguished Service Medal (1); Legion of Merit (5); Meritorious Service Medal (2); Navy Commendation Medal, and Navy Achievement Medal (2).

COMMANDER RUSSELL B. CARR
MEDICAL CORPS, UNITED STATES NAVY
SERVICE CHIEF OF ADULT BEHAVIORAL HEALTH CLINIC
WALTER REED NATIONAL MILITARY MEDICAL CENTER

Commander Russell Carr is the Service Chief of the Adult Behavioral Health Clinic at Walter Reed National Military Medical Center and Assistant Professor of the Department of Psychiatry at the Uniformed Services University of the Health Sciences.

Commander Carr is a native of Tennessee and received his Bachelor of Arts degree with Highest Honors in Russian Language and Literature from the University of North Carolina at Chapel Hill in 1995. He then returned to Tennessee and received his Doctor of Medicine from the University of Tennessee at Memphis in 1999. He completed an internship in psychiatry in 2000 at Naval Medical Center Portsmouth, VA. He then sought orders to the fleet and was transferred to USS SEATTLE (AOE-3) as the Medical Department Head and sole General Medical Officer on board from 2000-2002. During that tour, he deployed to the Persian Gulf with the JFK BATTLE GROUP in support of OPERATION ENDURING FREEDOM. He then transferred to Branch Medical Clinic Gaeta, Italy as a General Medical Officer for three years.

In 2005, he entered residency in psychiatry at the National Capital Consortium in Washington, DC. In 2007, he was named a Laughlin Fellow of the American College of Psychiatrists, an award given to the top eight psychiatry residents in the country each year. He also began training in adult psychoanalysis, which is additional training beyond psychiatry residency done through civilian institutes. In 2008, he completed his residency in psychiatry, and became a staff psychiatrist at the National Naval Medical Center Bethesda, MD.

In July 2008, Commander Carr deployed as an Individual Augmentee in support of OPEATION IRAQI FREEDOM for six months. He was assigned to the U. S. Army's 528th MEDICAL DETACHMENT, COMBAT STRESS CONTROL, which was already deployed to Mosul, Iraq. He served as a member of the unit's Prevention Team on FOB Q-WEST, Iraq, where he treated service members both on the base and on remote Combat Outposts. Upon his return to National Naval Medical Center, he served as the Medical Director of the Inpatient Psychiatric Ward. He was then selected to be the Department Head of the medical center's Psychological Health and Traumatic Brain Injury (PH-TBI) Department, a position which also managed the hospital's PH-TBI funding, reporting to the National Capital Region's PH-TBI Coordinator.

In 2010, Carr was selected to be the Integrated Service Chief for the Adult Behavioral Health Clinics at both National Naval Medical Center and Walter Reed Army Medical Center. He oversaw the integration of these two clinics as part of the largest military medical integration in history.

Dr. Carr is board certified in Psychiatry and is a Diplomate of the American Board of Psychiatry and Neurology. In 2013, he has graduated from psychoanalytic training at The Institute of Contemporary Psychotherapy and Psychoanalysis in Washington, DC, and has become the only active duty military psychiatrist or psychologist who has completed training in psychoanalysis. He has published numerous peer-reviewed articles and book chapters on combat trauma and suicide, speaks nationally on these topics, and is sought internationally for consultation on difficult to treat combat-related PTSD.

Commander Carr is a qualified Surface Warfare Medical Department Officer. His personal awards include the Meritorious Service Medal; the Navy and Marine Corps Commendation Medal (2); the Army Achievement Medal, as well as various unit awards.

Updated: April 2013

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE SUBCOMMITTEE ON MILITARY PERSONNEL

COMMITTEE ON ARMED SERVICES

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: MENTAL HEALTH TRANSLATIONAL RESEARCH

STATEMENT OF: LIEUTENANT GENERAL (DR.) THOMAS W. TRAVIS
THE SURGEON GENERAL
UNITED STATES AIR FORCE

APRIL 10, 2013

NOT FOR PUBLICATION UNTIL RELEASED
BY THE COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

Mister Chairman, Ranking Member Davis, and distinguished members of the Committee, thank you for providing this forum to address mental health research, a crucial area not only for the military but for the nation. As the Air Force Medical Service (AFMS) prepares for the future, medical research is a critical component of our strategic goals of "Readiness, Better Health, Better Care, and Best Value." The AFMS has made meaningful progress toward translating mental health research into clinical practice and improving behavioral health outcomes, paramount to taking care of our troops returning from deployment and to ensuring better health and quality of life for our Airmen wherever they serve.

The psychological well-being of our Airmen and their families is of utmost concern, given the more than 10 years of sustained conflict and the fact that most of our Airmen have deployed, many witnessing serious injury and death. Fortunately, the rates of Post-Traumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI) in Airmen have remained relatively low, but we have a responsibility to address these issues and to find ways to mitigate them in the future.

The AFMS is involved in research at both the strategic Department of Defense (DoD) level and at the Air Force operational level. It is vital that we continue to partner with the other Services. We have developed and embraced strategic partnerships with the Defense Medical Research and Development Program (DMRDP) and the Congressionally Directed Medical Research Program, both led by the United States Army Medical Research and Materiel Command. We leverage joint funds to support research in Mental Health that addresses joint capability gaps. Working with the Joint Program Committee, Air Force researchers identify research needs and gaps and acquire funding from the DMRDP, to contribute to and build upon

existing knowledge, seeking to answer research questions that will lead to clinical practice improvements.

While the Medical Research Materiel Command structure and the Defense Centers for Excellence in Psychological Health and Traumatic Brain Injury (DCoE) have primary responsibility in the strategic oversight of these areas of research for the DoD, our Air Force research teams focus their efforts on specific operational Air Force specific issues where needed.

The AFMS has invested targeted core research and development funds into Mental Health research, most of which is being conducted at the 59th Medical Wing at Lackland Air Force Base, Texas, and the 711th Human Performance Wing at Wright-Patterson Air Force Base, Ohio. The Air Force (AF) also receives congressionally directed psychological health and family advocacy funding. Some of these resources are directed to operational research studies targeted at improving the delivery of mental health and family advocacy services, and providing outcome and effectiveness evaluations of these services. We use these studies to shape mental health policy and clinical care. They identify key risk factors for psychological health problems and family violence, test innovative ways to deliver prevention and treatment services, and examine the fidelity and effectiveness of prevention and intervention services delivered to our beneficiaries. Sometimes there are fundamental research questions that must be answered before procedures are ready for clinical practice. These require applied research and will build upon generalizable knowledge and will be building blocks for further work affecting clinical care.

I would like to highlight a few of our research successes that have translated into practice. We are studying the Remotely Piloted Aircraft mission and how this may be affecting our pilots and intelligence operators. Investigators assessed the main sources of occupational stress affecting performance, prevalence of suicidal ideation, distress, PTSD, and high risk health

behaviors. As a result of this study, we are embedding psychologists in remotely piloted aircraft units to provide early intervention and care. Additionally, work shift schedules have changed to align with the recommendations of the study. A second translational research study on longitudinal assessment of the symptoms of TBI and PTSD resulted in the development of an early assessment tool for TBI. This tool is now in use in clinical practice by deployed neuropsychologists as a standard of care.

A third study, conducted in our Security Forces community, is designed to gain an evidence-based understanding of the interaction of behavioral and relationship health vulnerabilities throughout the deployment cycle. It will help target the development of specific prevention strategies and products. The results of this study are very promising -- it has already provided useful feedback to leadership, and shows evidence that may lead to the development of tools and resources to support Air Force Security Forces couples. When our relationships are healthier, we boost readiness.

We are closely following our deployed Airmen to understand the impact of war on psychological health to mitigate future battlefield mental health stressors. We have studies in place to examine secondary mental health effects when moving brain injured patients, best practices for psychiatric evacuees, and two studies examining stresses in our Pararescue Operators that may result in improved clinical practice guidelines.

The treatment of PTSD not only benefits from evidence-based clinical practice guidelines, but also years of scientific investigation into best treatment practices in the area of medication and psychotherapeutic techniques. Each graduating AF psychologist and social work trainee has received specific education in one or more of these modalities assuring they are ready to meet the needs for treatment of our wounded warriors. To date, more than 500 AF mental

health providers have been trained on these evidence-based treatments and all of our mental health provider residency training programs have fully integrated evidence-based treatment protocols into the curriculums.

However, training is only the first step. Recognizing the need to examine how and to what extent trained providers are using these treatments, the AF has collaborated with researchers at the Pennsylvania State University to examine provider fidelity to treatment protocols and outcomes for patients who have received these treatments by an AF mental health provider. We expect that findings from this study will be available in 2014, and will be used to identify strengths and gaps in training and the treatment protocols across the AF.

We are of course also concerned about the trend toward increased rates of suicide in our force. The AF has had an evidence-based suicide prevention program built around 11 elements of community and command involvement in place since 1997. The overlapping 11 elements can be grouped into three broad categories: leadership and community; education; and protections for those under investigation. Fortunately we have been able to maintain our rate of active duty suicide below the DoD average and age-adjusted civilian rates; however we strive to make continuous improvements in our program.

The AF joined with researchers from the University of Rochester in 2004 and 2010 to evaluate the effectiveness of the Air Force Suicide Prevention Program. The investigators concluded the program was successful and that the key to the long-term effectiveness of the program is the extent to which the 11 Elements are fully implemented. In years when installations more fully implemented the program, AF suicides rates have been lower. The AF continues to partner with the University of Rochester to study demographic and risk factors in suicide to inform the Air Force Suicide Prevention Program. We partnered with RAND to

explore Airmen's use of social media and the internet to improve our understanding of this rapidly expanding means of communication to inform our outreach efforts.

In our messages about seeking mental health care, to reduce stigma we often quote research showing that seeking mental health care doesn't negatively affect careers. That study is being repeated in cooperation with a Uniformed Services University of the Health Sciences researcher. Along with the older study, this will support our message to Airmen that early help-seeking is in the best interest of the Airman as well as the larger AF.

To provide lower-stigma access to behavioral health services, the AF has made significant contributions in research of the delivery of behavioral health services in Primary Care clinics for both the DoD and civilian communities. Research on our Behavioral Health Optimization Program (termed "BHOP") has demonstrated improvement in reported symptoms, cost effectiveness, and primary care provider and patient satisfaction. BHOP uses brief/evidenced- based interventions that efficiently meet the patient's care needs. The research demonstrating effectiveness has supported the rollout of this service at every medical treatment center in the AF and helped disseminate the practice, to justify bringing similar services throughout the DoD.

With the help of national experts, we published a clinician's guide to managing suicidal behavior in 2002. The guide helped us improve the uniformity in practice in handling individuals at risk for suicide and provided a valuable resource for clinicians. Based on the latest 10 years of scientific suicidology literature and organizational knowledge of best practices in suicide prevention, we are updating the "The Air Force Guide for Suicide Risk". In its final draft, this document will identify state-of-the-art knowledge and best practices for the clinical management of suicidal ideation and behaviors to improve clinical assessment and treatment of

at-risk patients. It adds resources for the cognitive behavioral treatment of suicidal patients not included in the original 2002 version. The updated guide, expected in the next two month, will make additional contributions to the training of AF mental health personnel, will increase the quality of care to suicidal patients, and will provide a resource in the consultation to leaders.

Uncontrolled stress may also result in domestic violence. Seeking to reduce recurrent episodes of spouse abuse, the Air Force Family Advocacy Program has collaborated with the Army Family Advocacy Program and researchers at Kansas State University and Northern Illinois University to develop and test an assessment measure for risk of spouse abuse recidivism. Final data collection is complete, and results will be released this fall. This study will inform DoD-wide policy changes on the assessment of spouse physical abuse allegations and improve safety planning for couples across the DoD.

Sometimes military members try to control stress with alcohol. Binge drinking is a serious, sometimes life-threatening problem, particularly in younger service members. In collaboration with experts on the use of social norm strategies in changing targeted health behaviors, we are pilot-testing the strategy for reducing the incidence of underage and binge drinking incidents. Results are expected in September. Preliminary results have indicated that altering a group's perception of what patterns of alcohol use are "normal or acceptable" may reduce incidents. Once complete, the study will help us improve substance abuse prevention efforts at base level.

In summary, the AF has been developing and implementing timely and operationally-focused mental health research while teaming with our sister services and the Department of Veterans Affairs (VA) to integrate VA and DoD research policies and processes. Members of our mental health team have participated in the DoD/VA Integrated Mental Health Strategies

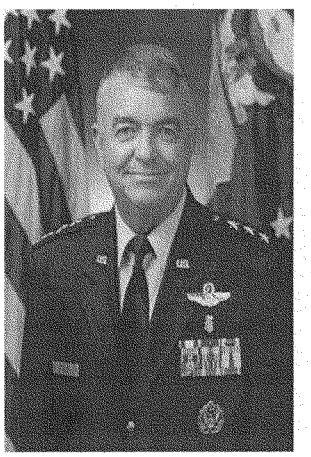
Workgroup that charged the rapid translation of mental health research into practice. This workgroup is scheduled to complete its recommendations by the end of this calendar year. We anticipate even better coordination of efforts and focusing of research initiatives with the realization of the National Research Action Plan outlined in the President's Executive Order of August 2012. Both large-scale innovative research, and more operationally focused research and program evaluation studies will continue to be integral as we seek to improve the quality of prevention and intervention services offered to our beneficiaries.

Our ability to successfully execute our missions of the future largely depends on effective research. These mental health research programs discussed today will help us to prepare for tomorrow's challenges, while addressing the long-term issues experienced by our returning warriors. Thank you for your recognition of this critical need and for your support in our endeavors.

BIOGRAPHY

UNITEDSTATESAIRFORCE

LIEUTENANT GENERAL (DR.) THOMAS W. TRAVIS



Lt. Gen. (Dr.) Thomas W. Travis is the Surgeon General of the Air Force, Headquarters U.S. Air Force, Washington, D.C. General Travis serves as functional manager of the U.S. Air Force Medical Service. In this capacity, he advises the Secretary of the Air Force and Air Force Chief of Staff, as well as the Assistant Secretary of Defense for Health Affairs on matters pertaining to the medical aspects of the air expeditionary force and the health of Air Force people. General Travis has authority to commit resources worldwide for the Air Force Medical Service, to make decisions affecting the delivery of medical services, and to develop plans, programs and procedures to support worldwide medical service missions. He exercises direction, guidance and technical management of more than 42,800 people assigned to 75 medical facilities worldwide.

General Travis entered the Air Force in 1976 as a distinguished graduate of the ROTC program at Virginia Polytechnic Institute and State University. He was awarded his pilot wings in 1978 and served as an F-4 pilot and aircraft commander. The general completed his medical degree from the Uniformed Services University of the Health Sciences School of Medicine, where he was the top Air Force graduate, and in 1987 he became a flight surgeon. For more than three years, General Travis was Chief of Medical Operations for the Human Systems Program Office at Brooks Air Force Base, Texas. He later served as the Director of Operational Health Support and Chief of Aerospace Medicine Division for the Air Force Medical Operations Agency in Washington, D.C.

Prior to his current assignment, Gen Travis served as Deputy Surgeon General, Headquarters U.S. Air Force, Washington, D.C. The general has commanded the U.S. Air Force School of Aerospace Medicine; 311th Human Systems Wing at Brooks AFB; Malcolm Grow Medical Center and 79th Medical Wing, Andrews AFB, Md.; and the 59th Medical Wing, Wilford Hall Medical Center, Lackland AFB, Texas. He also served as the Command Surgeon, Headquarters Air Force District of Washington, and Command Surgeon, Headquarters Air Combat Command, Langley AFB, Va. He is board certified in aerospace medicine. A command pilot and chief flight surgeon, he has more than 1,800 flying hours and is one of the Air Force's few pilot-physicians. He has flown the F-4, F-15 and F-16 as mission pilot and, the Royal Air Force Hawk as the senior medical officer and pilot.

EDUCATION

1976 Distinguished graduate, Bachelor of Science degree in biology, Virginia Polytechnic Institute and State University, Blacksburg

1980 Master of Science degree in physiology, Virginia Polytechnic Institute and State University, Blacksburg
1986 Doctor of Medicine degree, Uniformed Services University of the Health Sciences School of Medicine, Bethesda, Md.
1991 Master of Science degree in public health, University of Texas Health Science Center, San Antonio, Texas
1996 Air War College, by correspondence
1999 Distinguished graduate, Master of Science degree in national resource strategy, Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, D.C.
2000 Medical Capstone, Walter Reed Army Medical Center, Washington, D.C.
2003 Federal Health Care Executive Course, Interagency Institute, George Washington University, Washington, D.C.
2005 Capstone, Fort Lesley J. McNair, Washington, D.C

ASSIGNMENTS
1. April 1977 - March 1978, student, undergraduate pilot training, Williams AFB, Ariz.
2. May 1978 - August 1978, student, fighter lead-in training, Holloman AFB, N.M.
3. August 1978 - February 1979, student, F-4 Replacement Training Unit, MacDill AFB, Fla.
4. February 1979 - June 1982, F-4 aircraft commander, 334th Tactical Fighter Squadron, Seymour Johnson Air Force Base, N.C.
5. August 1982 - May 1986, medical student, Uniformed Services University of the Health Sciences School of Medicine, Bethesda, Md.
6. July 1986 - June 1987, internship, Andrews AFB, Md.
7. July 1987 - July 1990, F-15 pilot physician, Langley AFB, Va.
8. August 1990 - June 1992, resident in aerospace medicine, Brooks AFB, Texas
9. July 1992 - April 1996, Chief, Medical Operations, Human Systems Program Office, Brooks AFB, Texas
10. April 1996 - June 1998, senior medical officer,pilot, Royal Air Force School of Aviation Medicine, Farnborough, England
11. July 1998 - June 1999, student, National Defense University, Industrial College of the Armed Forces, National Defense University, Fort Lesley J. McNair, Washington, D.C.
12. July 1999 - July 2001, Director, Operational Health Support, and Chief, Aerospace Medicine Division, Air Force Medical Operations Agency, Washington, D.C.
13. July 2001 - February 2003, Commander, U.S. Air Force School of Aerospace Medicine, Brooks AFB, Texas
14. February 2003 - September 2005, Commander, 311th Human Systems Wing, Brooks City-Base, Texas
15. September 2005 - May 2006, Commander, 89th Medical Group, Andrews AFB, Md.
16. May 2006 - August 2006, Command Surgeon, Headquarters Air Force District of Washington, Bolling AFB, D.C., and Commander, 79th Medical Wing, Andrews AFB, Md.
17. September 2006 - August 2007, Command Surgeon, Headquarters Air Combat Command, Langley AFB, Va.
18. August 2007 - November 2010, Commander, 59th Medical Wing, Lackland AFB, Texas
19. November 2010 - July 2012, Deputy Surgeon General, Office of the Surgeon General, Headquarters U.S. Air Force, Washington, D.C.
20. July 2012 - present, Surgeon General, Office of the Surgeon General, Headquarters U.S. Air Force, Washington, D.C.

FLIGHT INFORMATION
Rating: Command pilot and chief flight surgeon
Hours: More than 1,800
Aircraft flown: F-4, F-15, F-16 and Royal Air Force Hawk

MAJOR AWARDS AND DECORATIONS
Distinguished Service Medal
Legion of Merit with oak leaf cluster
Meritorious Service Medal with four oak leaf clusters
Aerial Achievement Medal

Air Force Commendation Medal
Joint Service Achievement Medal
Combat Readiness Medal
Air Force Recognition Ribbon

OTHER ACHIEVEMENTS
1994 Julian E. Ward Memorial Award, Aerospace Medical Association
1994 Unger Literary Award, Society of U.S. Air Force Flight Surgeons
1995 Paul W. Myers Award for outstanding contributions to Air Force medicine, Air Force Association
2003 Stewart Lecturer, Royal Aeronautical Society
2007 Marie Marvingt Award, French Society of Aerospace Medicine
2007 George E. Schafer Award, Society of USAF Flight Surgeons
2008 John D. Chase Award for Physician Executive Excellence, Association of Military Surgeons of the United States

PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS
Academician, International Academy of Aviation and Space Medicine
Member and former President, Society of U.S. Air Force Flight Surgeons
Member and former President, International Association of Military Flight Surgeon Pilots
Fellow, Aerospace Medical Association
Fellow and former Aerospace Medicine Regent, American College of Preventive Medicine
Life member, Association of Military Surgeons of the United States
Order of the Daedalians
Alpha Omega Alpha Honor Medical Society

EFFECTIVE DATES OF PROMOTION
Second Lieutenant June 2, 1976
First Lieutenant Dec. 2, 1978
Captain Feb. 25, 1982
Major Feb. 25, 1988
Lieutenant Colonel Feb. 25, 1994
Colonel May 31, 1998
Brigadier General Sept. 1, 2004
Major General June 2, 2007
Lieutenant General July 13, 2012

(Current as of July 2012)

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

April 10, 2013

RESPONSE TO QUESTION SUBMITTED BY MRS. NOEM

Commander CARR. While the relationship between provider and patient is probably the most important factor in the treatment of psychological health issues, it is also true that a tranquil, non-threatening environment is a vital aspect of psychotherapy, perhaps particularly for PTSD. There are two outstanding programs that serve as examples of the type of calm, peaceful environment that is important for PTSD care. One is the NICoE, or the National Intrepid Center of Excellence, located in Bethesda on the same campus as Walter Reed National Military Medical Center. NICoE has been developed as a place for innovative assessment and treatment for service members who have not responded to standard treatments for TBI and psychological health concerns. It has a beautiful architecture and a soothing environment that creates a unique experience for wounded warriors who are treated there. The second program is called OASIS, or Overcoming Adversity and Stress Injury Support, which is located at Naval Medical Center San Diego. OASIS offers a comprehensive program of evidence-based treatments for the mind and body. It also has beautiful oceanfront views that are integral to its peaceful treatment environment. [See page 17.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

April 10, 2013

QUESTIONS SUBMITTED BY MS. SHEA-PORTER

Ms. SHEA-PORTER. 1) In your testimony you've noted new drugs that can help with PTSD. I'm interested in what progress you've made using canine therapy for PTSD or TBI. Please tell me about your research and results using canine therapy for treatment or mitigation of PTSD or TBI symptoms.

Dr. WOODSON. At this time, the DOD has no results to provide from canine studies of therapy for treatment or mitigation of PTSD or TBI symptoms. We included a request for studies to evaluate the role of service animals in PTSD recovery in a recent Program Announcement and received some research submissions in response. However, review of those submissions is not complete.

Ms. SHEA-PORTER. 2) In your testimony you've noted new drugs that can help with PTSD. I'm interested in what progress you've made using canine therapy for PTSD or TBI. Please tell me about your research and results using canine therapy for treatment or mitigation of PTSD or TBI symptoms.

General HOROHO. The Army supports complementary integrative medicine in appropriate circumstances and is open to alternative therapies. Canine assisted therapy for PTSD is an emerging area of alternative therapy. While some Service Members who received dogs from sources outside the Army have reported that the dogs have helped mitigate their symptoms, the medical benefit of canine assisted therapy for PTSD or TBI symptoms has not been validated by any formal studies.

Neither USAMEDCOM nor USAMRMC has any currently funded studies involving canine therapy for treatment or mitigation of PTSD or TBI symptoms; however, the Army has an interest in pursuing such a study. USAMRMC included a request for studies to evaluate the role of service animals in PTSD recovery in a recent Program Announcement. Some research proposals have been received, they are currently in the review process.

Ms. SHEA-PORTER. 3) In your testimony you've noted new drugs that can help with PTSD. I'm interested in what progress you've made using canine therapy for PTSD or TBI. Please tell me about your research and results using canine therapy for treatment or mitigation of PTSD or TBI symptoms.

Admiral NATHAN. Therapy dogs are used in a variety of Navy Medicine settings to help reduce anxiety, lower emotional reactivity, and provide a sense of security to our patients.

While Animal Assisted Therapy (AAT) remains experimental (i.e., more research is required), it has been shown to be effective in helping to treat a number of psychological disorders exhibited by many types of patients. These include hospitalized psychiatric patients, children with developmental disorders, patients with substance abuse problems, and victims of trauma. Therapy dogs have frequently been used overseas to help service members cope with the stressors of living in a deployed environment. They are also used in several of our facilities to help patients cope with the challenges associated with their medical condition. There is substantial anecdotal data suggesting that therapy dogs can be beneficial to service members with PTSD.

At the National Intrepid Center of Excellence (NICoE), therapy dogs have proven to be an extremely useful part of the therapy regimen. One reason for this is therapy dogs help facilitate positive social interactions between service member-trainers and the public. With the dogs at their side, service members can begin to rebuild their sense of trust in others and their sense of self-worth. NICoE utilizes a contracted service, Warrior Canine Connection (WCC), to teach service members with PTSD and TBI how these dogs can be used to help manage their symptoms. Additionally, in collaboration with both the Uniformed Services University of the Health Sciences (USUHS) and NICoE's Research Directorate, WCC is striving to gain scientifically-based evidence to demonstrate the benefits of the warrior-canine bond in reducing the symptoms of TBI and PTSD. They are also exploring the bio-mechanisms triggered during this human-animal interaction, which may correlate with the observed reduction in symptoms.

Ms. SHEA-PORTER. 4) In your testimony you've noted new drugs that can help with PTSD. I'm interested in what progress you've made using canine therapy for PTSD or TBI. Please tell me about your research and results using canine therapy for treatment or mitigation of PTSD or TBI symptoms.

General TRAVIS. Research has demonstrated that the use of canine therapy is beneficial in the support of people with either physical or mental health diagnoses. Canine-assisted therapies can reduce anxiety [Barker and Dawson (1998)][1] and complement other therapies for Post-Traumatic Stress Disorder (PTSD) like Prolonged Exposure treatment [Lefkowitz, et al, 2005].[2] While there is a research project in canine therapy approved through Walter Reed National Medical Center, the Air Force does not have any mental health research specifically addressing canine therapy. However, with the support of Womack Army Medical Center, Pope Air Force Base (AFB) has implemented a service dog training program. Pope AFB's program began June 2012 as a complementary treatment intervention for complex PTSD/Traumatic Brain Injury cases and expects to expand to include a total of 8 service animals within the next several months. Although Pope AFB's canine program is not research, reports are that those service members in the program typically show a decrease in suicidal thoughts, an increased sense of safety, independence, motivation and self-efficacy.

Ms. SHEA-PORTER. 5) In your testimony you've noted new drugs that can help with PTSD. I'm interested in what progress you've made using canine therapy for PTSD or TBI. Please tell me about your research and results using canine therapy for treatment or mitigation of PTSD or TBI symptoms.

Commander CARR. [The information was not available at the time of printing.]

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[1] Barker, S. B., & Dawson, K. S. (1998). The effects of animal-assisted therapy on anxiety ratings of hospitalized psychiatric patients. Psychiatric Services, 49(6), 797–802.

[2] Lefkowitz, C., Prout, M., Bleiberg, J., Paharia, I., & Debiak, D. (2005). Animal-assisted prolonged exposure: A treatment for survivors of sexual assault suffering posttraumatic stress disorder. Society and Animals, 13(4), 275–296.