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ENSURING MEDICAL READINESS IN THE FUTURE

HEARING

BEFORE THE

SUBCOMMITTEE ON MILITARY PERSONNEL

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

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ENSURING MEDICAL READINESS IN THE FUTURE

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON MILITARY PERSONNEL,
Washington, DC, Friday, February 26, 2016.

The subcommittee met, pursuant to call, at 9:28 a.m., in room 2212, Rayburn House Office Building, Hon. Joseph J. Heck (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. JOSEPH J. HECK, A REPRESENTATIVE FROM NEVADA, CHAIRMAN, SUBCOMMITTEE ON MILITARY PERSONNEL

Dr. HECK. I will go ahead and call this subcommittee meeting of the Military Personnel Subcommittee to order.

I want to welcome everyone to the hearing of the Military Personnel Subcommittee to receive views on how best to ensure our future military medical readiness. This hearing is part of the committee's ongoing project to comprehensively review the current state of the Military Health System and military health care and, based on this information, identify areas that need improvement.

Our purpose today is to discuss the top priority of the Military Health System: to ensure the medical readiness of our military forces, while also ensuring a ready medical force prepared to deploy in support of combat operations.

Over the past 14 years of conflict, the services have worked tirelessly to improve medical readiness, ensuring both service members and medical providers are able to deploy and accomplish their missions. The medical readiness rates for each of the services have seen double-digit growth, as commanders and healthcare providers work together to identify and eliminate barriers to deployability.

Combat medicine has also seen extraordinary advances, resulting in service member survival rates that were once thought unachievable. In many areas, the standards of care have been redefined as advances in areas ranging from transfusion medicine to casualty transport care reshape combat medicine. These crucial advances have not only benefited the military but civilian medicine as well.

Many of these advances were made possible by the tireless efforts of military practitioners. Even in peacetime, military healthcare providers have the complex job of maintaining the medical readiness of service members at home stations while also manning, equipping, and deploying medical units with medical personnel who are trained in both military skills and specialized medical skills needed for wartime medicine.

The hard-fought advances in combat care over the past 14 years must be preserved. The medical specialties needed during war are

not limited to trauma; however, during periods of limited deployment, trauma skills can quickly degrade, which is why we must do everything possible to maintain proficiency in both trauma and emergency medicine. It is crucial that military trauma teams have the proper patient volume and case complexity during times of limited deployment so that they can maintain the skills needed in combat.

We will hear today from two panels, the first panel consisting of the Joint Staff Surgeon and service Deputy Surgeons General who can provide valuable insights regarding service-wide initiatives, and the second panel comprised of practitioners who can provide perspectives on the current challenges facing military emergency medicine and trauma practitioners.

I look forward to hearing from our panels about the current efforts underway by the services to ensure we maintain high service member readiness and provider readiness during periods of limited deployment. In addition, I am interested to hear how the services ensure medical providers maintain their specialties, particularly in areas where patient volume is limited. Finally, I look forward to hearing the challenges facing practitioners as they look for innovative ways to maintain proficiency during periods of limited deployment.

Before I introduce our panel, let me offer the ranking member, Mrs. Davis, an opportunity to make her opening remarks.

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

Mrs. DAVIS. Thank you, Mr. Chairman. I also want to welcome our witnesses from both of our panels this morning.

This hearing should afford us the opportunity to hear a variety of perspectives on medical readiness. And, as you all know very, very well, nothing that we have to tell you, medical readiness is the foundation for which the military services' medical systems are built, not just the readiness of service members who are trained and proficient but also the readiness of the providers who ensure those service members are always fit to perform their mission.

So much of the discussion on military readiness has been focused on trauma specialties in combat and how to maintain the skills the medical community has gained over the last 15 years of persistent conflict. I am interested to follow up on the discussion in your written statements about the development of the essential medical capabilities, as well as how each of the services maintains visibility over provider readiness to ensure that we have the proper number of trained providers when needed, and how you manage the trauma specialties, trying to track that. And I think, for all of us who are not immersed in this in the way that you are every single day, understanding how that really occurs has got to be important as well.

I also want to acknowledge and thank the chairman for mentioning the contribution to civilian medicine that our armed services have made and the medical providers have made to our country. Staggering and incalculable, and I appreciate that greatly.

Thank you, Mr. Chairman, and I look forward to the hearing.

Dr. HECK. Thank you, Mrs. Davis.

We are joined again today by two outstanding panels. We will give each witness the opportunity to present his or her testimony and each member an opportunity to question the witnesses.

I would respectfully remind the witnesses to summarize to the greatest extent possible the highpoints of your written testimony in 5 minutes. The lighting system will be green. At 1 minute remaining, it will turn yellow. When it turns red, I ask you to quickly try to summarize and finish up your testimony so we can move on through.

Let me welcome our first panel: Major General Joseph Caravalho, Joint Staff Surgeon, Office of the Chairman of the Joint Chiefs of Staff; Major General Dorothy Hogg, Deputy Surgeon General, United States Air Force; Brigadier General Robert Tenhet, Deputy Surgeon General, United States Army; and Rear Admiral Terry Moulton, Deputy Surgeon General, the United States Navy.

I ask unanimous consent that non-subcommittee members be allowed to participate in today's hearing after all subcommittee members have had an opportunity to ask questions. Without objection, non-subcommittee members will be recognized at the appropriate time for 5 minutes.

With that, Major General Caravalho, you are recognized for 5 minutes.

STATEMENT OF MG JOSEPH CARAVALHO, USA, JOINT STAFF SURGEON GENERAL, U.S. DEPARTMENT OF DEFENSE

General CARAVALHO. Thank you, Chairman Heck, Ranking Member Davis, and distinguished members of the subcommittee. I am pleased to be seated alongside my colleagues, and I am especially grateful for the opportunity to discuss medical readiness with you today.

My written testimony has been submitted for the record. Today, I would like to highlight three points in my oral testimony.

However, as this is my first opportunity to meet with this committee in my capacity as the Joint Staff Surgeon, I would like to first take a moment to tell you about my role. Essentially, I have the responsibility to provide the Chairman of the Joint Chiefs of Staff and other senior leaders with the best military medical advice in support of the joint force.

In my role as the facilitator for global medical synchronization, I work with other Joint Staff directorates to service Surgeons General and the Assistant Secretary of Defense for Health Affairs to meet the Chairman's intent in delivering health services to the combatant commanders and the joint force.

Now, first of all, I would like to say I am extremely proud of the accomplishments to date of the joint medical force across the full spectrum of military operations. And with the Chairman's vision of future security environments, my first point is military medicine must be better aligned to continually demonstrate its readiness posture to the Department's senior leaders.

It is my observation the joint force expects military medicine to be more than interoperable and, at times, more than joint. I believe whenever and wherever feasible, while remaining cognizant of service responsibilities, to best support the joint force, the services' medical forces must be interchangeably aligned.

The Chairman's recently published Joint Concept for Health Services moves us in that direction. Now, this document describes in broad terms the Chairman's vision for what the future joint force will need from military medicine to support globally integrated operations.

To this end, the services have begun work on establishing core medical specialty requirements that will aid in creating a more interchangeable joint medical force. Readiness metrics will then reflect each medical specialty's ability to function across the full spectrum of military operations.

Next, I have also observed an increasing number of requests for medical support to smaller, more widely dispersed ground forces, and I expect this trend to continue. With this, my second point is the medical community must adapt to new paradigms of health service support. To meet this challenge, we have already begun work towards a formalized and disciplined review to develop new organizations, training, policies, and doctrine.

My third point is I view military medical centers, hospitals, and clinics as our home stations' front lines of care. They provide ready warfighters and medical forces alike, while delivering quality health care to our valued beneficiaries. Then, both during and following deployments, they offer continued high-quality care for those in need.

Now, these platforms should not be compared directly to civilian healthcare facilities, as we are focused primarily on readiness.

In conclusion, military medicine has but one mission, and that is to support the joint force with globally integrated health services. We will not lose focus on the world-class health care our service members and families deserve, but it will be performed in support of our primary mission of medical readiness.

From home station to operational deployments to evacuation and post-deployment settings, I feel strongly the military medical team across all the services will remain relevant, adaptive, and highly valued members of the joint force.

Thank you for the opportunity to address the committee and for your enduring support of our service members and their families.

[The prepared statement of General Caravalho can be found in the Appendix on page 39.]

STATEMENT OF MAJ GEN DOROTHY HOGG, USAF, DEPUTY SURGEON GENERAL, UNITED STATES AIR FORCE

General HOGG. Chairman Heck, Ranking Member Davis, and distinguished members of the committee, thank you for the opportunity to come before you today to discuss the future of Air Force medical readiness.

Fielding ready medics is the key to providing world-class health care at home and in the deployed environment. Let me illustrate this point.

Last week, Craig Joint Theater Hospital in Afghanistan admitted a NATO [North Atlantic Treaty Organization] patient suffering from adult respiratory distress syndrome. The patient ultimately needed extracorporeal membrane oxygenation, or ECMO, and aeromedical evacuation to Landstuhl Regional Medical Center in Germany.

While awaiting evacuation, the patient's oxygen levels decreased rapidly, leading to a life-threatening irregular heart rate, resulting in advanced cardiac life support and kidney dialysis. Craig's critical care medical team jumped into action to stabilize the patient and prep him for immediate evacuation.

The complexities of this emergency illustrate the medical readiness skills required of our medics in managing not only trauma patients but nontrauma patients as well. This level of readiness is achieved through caring for complex patients with similar disease etiologies in our Military Health System.

Every Air Force military treatment facility is a medical readiness platform aligned with an operational wing that directly enhances the medical readiness of warfighters and their families. The care we provide our beneficiaries enables us to sustain the readiness of our medical force. And our readiness is directly related to the volume, diversity, and acuity of our patient population.

The Air Force Medical Service has a broad portfolio of readiness training programs to prepare individual medical specialists and deployable medical teams for reliable performance across the full range of military operations. The readiness portfolio spans care provided within our MTFs [military treatment facilities] to specialized advanced trauma training delivered in our civilian Level I trauma partnership platforms.

Our Readiness Skills Verification Program establishes baseline skills required in a deployed environment. These skills are identified by senior clinical consultants and enlisted functional area managers based on combatant commanders' requirements and are updated with lessons learned and emerging medical evidence.

In tandem, the Sustained Medical and Readiness Trained, or SMART, program expands training opportunities for skills requiring a higher volume and complexity of hands-on care than normally seen in our smaller military treatment facilities, utilizing local training affiliations or regional currency sites, such as the University Medical Center in Las Vegas, Nevada.

For well over a decade, we have also had cadres of physicians, nurses, and technicians embedded in our Centers for Sustainment of Trauma and Readiness Skills, known as C–STARS, located in Baltimore, Cincinnati, and St. Louis. Hundreds of our medics have received elite trauma and critical care training and remain prepared to deploy anytime, anywhere.

Similarly, Air Force graduate medical education programs develop the knowledge, skills, and attitudes of highly qualified medical personnel while supporting the Air Force Medical Service missions. These training programs deliver health care to our military members and other beneficiaries, ensures the competency and currency of medical personnel, and contributes to the readiness of medical airmen.

The Air Force Medical Service is committed to preserving the medical skills obtained in the last 15 years of conflict and will continue to meet the evolving requirements of combatant commanders. With your support, we will continue to provide trusted and reliable health services to our airmen and their families for years to come.

Thank you, and I look forward to your questions.

[The prepared statement of General Hogg can be found in the Appendix on page 46.]

STATEMENT OF BG ROBERT TENHET, USA, DEPUTY SURGEON GENERAL, UNITED STATES ARMY

General TENHET. Chairman Heck, Ranking Member Davis, and distinguished members of the subcommittee, thank you for this opportunity to provide the Army perspective on ensuring medical readiness now and into the future.

Today's uncertain global environment continues to place high demands on the Army. Over the past year, the Army deployed over 190,000 soldiers to more than 140 countries around the world in support of various operations. Readiness is the Army's number one priority.

And, as Ranking Member Davis mentioned earlier, our trained and ready medical force contributed to the highest survivability rate in the history of warfare despite the increasing severity of battle injuries. These advances in combat casualty care are primarily due to the integrated system of health that currently extends from the battlefield through Landstuhl Regional Medical Center in Germany to our in-patient hospitals in the United States.

Today, we are faced with the question of how to sustain the competency of our medical force, which has performed so well in the past 14-plus years. During the second panel, you will hear from two combat-tested Army physicians, Lieutenant Colonel Bob Mabry, an emergency medical physician and certified pre-hospital physician specialist, and Lieutenant Colonel Jean-Claude D'Alleyrand, an Army trauma orthopedic surgeon, who will discuss challenges in pre-hospital care as well as maintaining surgical skills.

However, we must not focus exclusively on the sustainment of combat trauma, surgery, and burn capabilities. Our Army and soldiers must be prepared for a multitude of contingency missions: to engage in conventional conflict against large armies and smaller, as mentioned by our Joint Surgeon; defend the homeland; and respond to a wide range of crises, ranging from peacekeeping to disaster relief and humanitarian assistance.

The Army must maintain a broad range of medical capabilities to support this full range of military requirements. The 2014 deployment of 2,500 personnel to support Operation United Assistance in Liberia demonstrated the value of non-trauma-related medical specialities. Some argue these examples are not part of our mission set for ready and relevant medical support, but, invariably, when the task is unique and difficult, the Nation leans on its military.

To ensure the readiness of the entire medical team for this broad range of missions, we must maintain and sustain our medical centers, hospitals, and clinics as our readiness and training platforms. This system ensures our medical force is trained, ready, and relevant to provide primary and specialty care in the myriad settings and conditions faced around the world.

We must continue to develop innovative partnerships with the VA [Department of Veterans Affairs], civilian hospitals, and other organizations to ensure our entire medical team continues to be ex-

posed to a varied and complex mix of patients. This is essential to train, challenge, and to hone the skills of our entire medical team.

In addition, we must continue to train the next generation of the Army Medicine team through our graduate medical education programs. These programs are vital to our ability to recruit and retain highly skilled medical providers. Most importantly, these programs are the primary means of transferring knowledge from this generation of military providers to the next.

While our system has proven to be very successful over the last 14 years, we must continue to improve and evolve it to meet the challenging needs of our Nation's Army. Since the beginning of our Nation's history, when we send our Nation's sons and daughters into harm's way, they need to know that the Army Medicine is there, relevant, and ready.

I am committed to ensuring we maintain and improve the readiness of our medical force. I look forward to working with Congress in this endeavor. And I want to thank my partners in the DOD [Department of Defense], my colleagues here on the panel, and Congress for your continued support.

[The prepared statement of General Tenhet can be found in the Appendix on page 59.]

STATEMENT OF RADM TERRY J. MOULTON, USN, DEPUTY SURGEON GENERAL, UNITED STATES NAVY

Admiral MOULTON. Good morning, Chairman Heck, Ranking Member Davis, distinguished members of the committee. Thank you for providing me the opportunity to share some perspectives on Navy Medicine and our most important strategic priority, medical readiness. We are grateful to the committee for your leadership and strong support of military medicine.

Force health protection is the bedrock of Navy Medicine. It is what we do and why we exist. And this mission spans the full spectrum of health care, from optimizing the health and fitness of the force, to maintaining robust disease surveillance and prevention programs, to saving lives on the battlefield.

And on any given day, Navy Medicine is underway and operating forward with the fleet and the Marine forces around the globe. We operate in all warfare domains, in all environments, and must also deliver important specialized capabilities to the warfighters. Our personnel, whether an independent duty corpsman, a flight surgeon, an undersea medical officer serving aboard a submarine, a ship, or squadron, or a fleet Marine force corpsman in the field with a Marine unit, must be trained and equipped to execute their specific mission.

Our readiness posture also requires us to be capable of meeting critical surge requirements in support of contingencies and combat operations. And Navy Medicine's expedition medical capabilities are important as we provide that care through all the echelons of care, from the battlefield to the bedside of our military treatment facilities.

This is clearly evident as Navy Medicine continues to sustain unparalleled levels of mission success, competency, and professionalism while providing world-class trauma care and expeditionary

force health protection to U.S. and coalition forces in southern Afghanistan.

It also enables us to support humanitarian assistance and disaster response missions since our hospital ships have the capability to provide relief in the wake of catastrophic events like tsunamis and earthquakes. And our global health engagement strategy requires us to be ready to support these diverse missions around the globe.

I cannot overstate the importance of our military treatment facilities in ensuring readiness of our personnel. The ability to deliver the full range of medical capabilities to the operational commander is highly dependent on the training and clinical currency of our personnel. And our MTFs are critical to providing these skills and competencies and must remain foundational to meeting our current and future operational requirements.

Navy Medicine also continues to leverage our strategic partnerships with leading civilian trauma centers so our personnel can hone and sustain their skills, including the Navy Trauma Center at LA [Los Angeles] and USC [University of Southern California] Medical Center. And this program has trained over 2,800 of our deploying medical personnel since 2002 and continues to enhance their combat trauma skills and medical readiness.

And it is also important to recognize that our GME programs, graduate medical education programs, at our medical centers and our family medicine teaching hospitals support readiness by providing trained physicians to meet our operational requirements. And these programs rely on our MTFs having access to robust beneficiary populations and support our case number and complexity.

The services, along with the Joint Staff and DOD, are working to identify, define, categorize, and prioritize essential medical capabilities, or EMCs. These refer to those health services that are required to deliver comprehensive health care in support of globally integrated operations and will provide the framework for maintaining the medical ready force.

In the last 15 years of war, I have seen unprecedented advances in military medicine, and this progress was the result of a highly trained and well-equipped force dedicated to rapidly deploying the most effective lifesaving skills and techniques. And all of us in military medicine are committed to ensuring the lessons learned are sustained and effectively implemented throughout the MHS [Military Health System], and we are committed to continuous improvement. And these efforts require rigorous ongoing assessment of our capabilities, identification of gaps, and implementation of sound solutions. And all of us recognize that there is hard work ahead for that, to maintain medical readiness moving forward.

Again, thank you for your support, and I look forward to your questions.

[The prepared statement of Admiral Moulton can be found in the Appendix on page 68.]

Dr. HECK. Thank you all for your testimony.

We will begin the 5-minute round of questioning by members.

A recent study of military medical staff concluded that the military seems to understaff operationally required specialties and overstaffs specialties more towards providing beneficiary care.

So I would ask, how do the services balance maintaining that mix of having the docs needed or the entire healthcare spectrum needed to take care of military beneficiaries or to maintain their combat skills? And I would guess that part of the EMCs is going to help define that.

For instance, you know, you look at certain facilities and there seems to be an abundance of OB–GYN [obstetrics and gynecology] and pediatrics, understanding that in humanitarian care we have to be prepared to provide those things, but not necessarily the level or the number of specialists or specialties required to provide combat casualty care.

So that would be my first question.

And to follow on to that, when we try to maintain the level of training of, let's say, our teams that are going to provide combat casualty care, I think, General, you mentioned your SMART program, and I appreciate the shout-out to University Medical Center, my former place of employment.

But how do we ensure that the entire team—the anesthesiologist, the medic, the nurse, everybody—is trained, as opposed to just rotating out the trauma surgeon to a Level I trauma center?

So whoever wants to tackle it first, we can just go down the line.

General HOGG. Yes, sir, I will take that.

So we need to maintain the readiness not only of our Active Duty members but of our families also. And the OB–GYN and the pediatric care that we provide help us to maintain that family readiness so that when that Active Duty member is deployed they have confidence that their family will be taken care of. And, also, those specialties will provide some military medical readiness due to complications that might occur during those episodes of care.

The ability to get the whole team trained can be challenging at times. Most of the specialty care that we get within the Air Force Medical Service, we rely on our civilian partners to help achieve that. And it is at their mercy whether they want us to come into their facility. There is nothing compelling them, per se, to partner with us.

We do have some challenges with our technicians, our technical specialties, getting them into the civilian facilities, because they are not equivalent. The civilian community doesn't really understand their equivalencies. Once we get them in the door, they are all on board and usually ask us, do you have more?

And so we try by getting in the physician and the nurse, and then, once we get them into our partnerships, we tag along a technician. And once they see the capabilities of our technicians, usually that helps.

Dr. HECK. Anybody else want to add?

General TENHET. I will add to General Hogg's comments here.

In a deployed setting, trauma care takes up about 15 percent of the numbers we see in theater, so 85 percent of those are disease/non-battle injury. In any given camp or FOB [forward operating base], you may have upwards of 30 percent females. So just with the OB–GYN, I mean, gynecologists in theater is not a misnomer.

So, of the evacuations used in the wonderful Strat Air [Strategic Airlift] that the Air Force has, 80 percent of our evacs [evacuations] are disease/non-battle injury as well. So to sustain just within the

trauma system itself, we have to look across the entire spectrum of medicine.

And as you talked about the—or asked the question on the OR [operating room] piece, we estimate it takes up to 80 staff members to support 1 OR. So it becomes a convoluted system to try and train to standard using the team approach and collective training.

So our forward surgical teams you are probably familiar with, we do take them into team training, collective training down at Ryder in Miami. And we are looking to expand that across the U.S. and maybe even globally as we go into the interwar years.

Admiral MOULTON. Sir, I would just comment to your first question, you know, about maintaining the balance, how do we ensure that we are meeting our operational requirements and then the peacetime care as well, for us, there are priorities for distribution of our resources.

First of all, we are going to support the operational requirements. That is 100 percent staffing. And then we would look to our overseas activities, which are forward-deployed. And then, lastly, is our MTFs. And then they are augmented by civilians and contractors to maintain that skill and to build that credibility before deploying again.

And then the second question, back to the entire team, rather than just the trauma surgeons or surgeons in general, you know, we are moving back to a platform readiness. And for the last 15 years, we have been doing a lot of individual augmentations, so now, moving back to platform readiness, we can train the whole unit. You will know where you are assigned, and you will know what the training requirements are for that platform, and then you will train as a team before deployment.

Dr. HECK. Okay. Thank you all. My time has expired.

Mrs. Davis.

Mrs. DAVIS. Thank you, Mr. Chairman.

And I wanted to go back just to the EMCs, the essential medical capabilities, for a second. Obviously, you have been working on it very hard, I think, but when do you expect to complete them? And how long will it take to implement across the individual force?

General HOGG. Yes, ma'am. So the Air Force Medical Service supports the development of the EMCs, and we have been actively engaged in defining what those are.

The timeframe, we will have the beginnings of some essential medical capabilities, I believe, in October of this year. And then the implementation, right now I really don't—we haven't got the timeline for that.

General CARAVALHO. Ma'am, if I may say that the EMCs are primarily going to describe what is already being done by the services now, except that they are using the civilian healthcare model of are you board-certified, are you credentialed, licensed, and privileged. The EMCs is going to put it—I believe is going to be very helpful because it will put it into the DOD reporting system style so that now senior leaders can say are my medics ready, just like are my submariners ready and are my aviators ready.

Mrs. DAVIS. Uh-huh.

General CARAVALHO. I will speak—I think it will speak to—it won't be too high-level, it won't be strategic, in that "take care of

patients," of which everything falls within. And it won't be too tactical, to say what do our ophthalmologists do and what do our cardiologists do. It is going to be along the lines of providing hospitalization, providing patient movement, something along those lines, under which, then the essential task list will be generated by the services and the primary skills, attributes that everyone will need.

And I believe each provider will then be able to say, regardless of my specialty as an NCO [noncommissioned officer] or as an officer, what do I bring to this fight. So I may not be a general surgeon, but I will be asked to be a surgeon; what are the skills I will need to be a surgeon in any realm that I am asked to participate, whether major combat operations, humanitarian assistance, or what have you.

I think that is how that is going to play out. I think we will start to be, as was mentioned, start to be able to codify that in a Department's reporting system later this year.

Mrs. DAVIS. Uh-huh. Do you think, I mean, you have pretty much described this right now, I think, that—do you see a major impact on training requirements then? Is that really going to——

General CARAVALHO. I think we are going to—we are not going to create a new system. I think we already, I think the services already know proficiency and currency using the peer review, the systems that civilian healthcare industry uses. We are just going to codify it and report it so that the senior leaders know that, no matter what I ask you to do, fight tonight, sustain operation, are you able to do—are you able to fight. I am hoping then that, whether they ask for Army or Navy or Air Force, no matter what the Chairman is looking for, it won't matter because we are using the same codified skill sets.

Mrs. DAVIS. Uh-huh.

General CARAVALHO. And if we are truly interchangeable and one service is short a surgeon, for instance, using EMCs, we can look to another service and say, okay, you have met the standard, can you come in and fill, as opposed to it must be all Army or all Navy or all Air Force every time there is a requirement.

Mrs. DAVIS. Yeah.

Could you all respond? I mean, does that make a real difference?

General TENHET. So when we get into the KSAs [knowledge, skills, and abilities]—so you build the EMCs, that is the overarching codification of this. And we are looking at 10, primarily, at this point in time. We haven't solidified that yet, but that is where I think we are going to go with this. It, oh, by the way, mirrors into the joint concept of health support, so that is process and progress in that model.

But concomitant with the EMC is the knowledge, skills, and abilities that we are aligning across the services. And that gets into both the operational and down to the tactical level of the individual. So, within that construct, it is going to be a scorecard, just like the infantry uses in their unit status reporting; are they green, amber, or red. We are going to apply that to medicine.

Mrs. DAVIS. Yeah. But is this going to be on an individual basis then? Will you know whether one specific physician is ready?

General TENHET. Absolutely. Absolutely.

General HOGG. Yes, ma'am.

Mrs. DAVIS. And is that true, that you don't know today?

General HOGG. No, ma'am, we do know today. In the Air Force Medical Service, we have, I mentioned in my oral statement about the Readiness Skills Verification Program. Every medic in the Air Force Medical Service has a readiness skills verification checklist, if you will, that identifies the skills that are necessary for them to be competent in wartime scenarios or over the full range of military operations.

That is looked at on a regular basis. Some of the training is knowledge-based, some of the training is didactic, and some of the training is hands-on. And they are required to complete those skills, depending on the timeline, in order to stay current.

Mrs. DAVIS. Uh-huh. But in terms of, once this is operational, I understand it is not new to the system, but there is added value to it.

General CARAVALHO. Yes, ma'am. If I may give an example of where we are short now, if you have a general surgeon who goes on to a fellowship and does plastic surgery and now she is practicing as a plastic surgeon for 10 years, when we deploy her, we will need her as a general surgeon, and she may never have been in someone's belly operating for 10 or 15 years. We track her as a competent, board-certified, credentialed, privileged plastic surgeon, and we lose sight of the general surgery part.

EMCs will say, no matter where you are, when you deploy, have you met the skills and attributes we are looking for in a deployed setting.

Mrs. DAVIS. Okay. Great.

And for our specialty nurses, just a yes or no, is it going to be the same?

General HOGG. Yes, ma'am, it is the same.

Mrs. DAVIS. Okay. Thank you.

Dr. HECK. Mr. O'Rourke.

Mr. O'ROURKE. Thank you.

Not sure to whom I should address this question, but I am interested in the IDES, or the Integrated Disability Evaluation System, that is supposed to ensure that a wounded or disabled service member is either reintroduced back into Active Duty or the appropriate Reserve Component or is able to seamlessly transition out into VA medical care. And, following the flowchart the Department of Defense has published, it looks like that process should take about 295 days.

So I guess my first question is: Are we, in fact, returning service members to Active Duty status in that time or helping them to separate in that time with a VA disability rating, or are we at some other mark either above or below 295?

General HOGG. Yes, sir. In the Air Force system, IDES system, it is a collaborative process between DOD and VA, and parts of those process are owned by those two entities.

In the part that the Air Force owns, the Air Force Medical Service owns, we are doing actually very well with getting members through, but the total process still is a little bit over the 295 days.

Mr. O'ROURKE. Do you know what it is for the Air Force?

General HOGG. No, sir. I would have to get back to you with that.

Mr. O'ROURKE. Okay, for the record.

And for anyone else, if anyone has a specific number, I would love to hear it now. If not, we would just request that as a followup question for the record.

[The information referred to can be found in the Appendix on page 109.]

Mr. O'ROURKE. General Tenhet, did you want to add to that?

General TENHET. I was just going to mention we are at 291. However, you know, the Army's injuries, we have had some complex issues that keep that number around that window there.

Working with the VA, we have improved that significantly in the last 4 to 5 years. And some of that has been from the pressure from Congress to work more collaboratively together. And also it is being able to share the documentation through Legacy Viewer, et cetera. Any and all medical interaction is now documented and shared across both the VA and DOD.

Mr. O'ROURKE. That gets to a followup question I would like to ask you, which is, I don't know how to gauge whether 295 is a lot of time or the appropriate amount of time, but there are certainly several stages, dozens of stages actually, in this process, some of which the service member has the opportunity to appeal a decision or make some other decision on his or her part, and then decisions that are made by the Department of Defense, decisions that are made by the VA.

Do you see any obvious opportunities to further streamline this process, gain greater efficiencies, and ensure that the service member returns to duty or is able to transition out effectively and be in the care, again effectively, of the VA so that nothing is dropped?

General TENHET. There is always room for improvement, as a learning organization. The medicine peace of that window is actually a very small piece. It is mostly administrative. And I think all the services, medically, are meeting their mark. I think the coordination with the VA and working with our G–1 [Deputy Chief of Staff of the Army] through the administrative piece of this, we can always continue to tighten that piece up.

But it is back on the soldier. Fifty percent of those just 2 years ago were being returned to service. We are down to about 40 percent, again, because of the remaining complex issues that we have.

But the ability to work with the VA, the warm handoff, and also implementing the case management structure into this has really enhanced the program.

Mr. O'ROURKE. I have another question that may, because of limited time for you to answer, be appropriate to get for the record or to have an offline conversation. But in terms of that warm handoff, anecdotally, in talking to veterans in El Paso who served at Fort Bliss and were treated at William Beaumont Army Medical Center, they talk about excellent care at the military treatment facility, especially when it comes to mental health. They then say that regimen of care which was so expertly executed at William Beaumont, once I transitioned to the VA, it was very hard to see a psychiatrist or a psychologist or even a social worker to continue that care.

So I understand the goal. It is not happening. I would love—and there is not time for you to respond right now, but I would love to get your thoughts, either in writing or offline, about how we can

do a better job and what role specifically the Army or Department of Defense could play in extending that care if somebody is already in treatment.

Mr. O'ROURKE. With that, I will yield back to the Chair.

Dr. HECK. Mr. Knight.

Mr. KNIGHT. Thank you, Mr. Chair.

I just have some basic questions.

You know, in California, we have opened another medical school out there because of the deficiency for surgeons and doctors that we have in California and across the country. Are we finding that in Army and Navy and Air Force Medicine, that we are not getting enough applicants, that we are not having enough surgeons and doctors?

General HOGG. No, sir. We staff to our requirements, and so we typically have plenty of applicants to attend our military medical programs.

Admiral MOULTON. And for the Navy, I would say, as well, that our recruiting efforts have been very successful over the last several years. So we are not facing any shortages there.

General TENHET. Same for the Army, sir.

I think our challenge is the retention piece of this. Especially as the wars start to wane, especially in the trauma medicine arena, the retention portion of this becomes more challenging as we go forward.

Mr. KNIGHT. Okay.

And as we have been at war now for 15 years, and for some purposes for the last 25 years, we have seen readiness be the number one goal. And I think that should always be the number one goal in the military, is readiness.

But as our young men and women have gone into theater two, three, four, five times, we have started to see an awful lot of things that maybe we dealt with in other wars, maybe in Vietnam and Korea and World War II, but they are very prevalent today. We have renamed these things. I think in World War II we named it "shell shock," and today we have "PTSD" [post-traumatic stress disorder] and "traumatic brain" and things like that. They are all an effect of seeing something that normal people don't ever want to see, and that affects someone.

How are we treating that differently today than maybe we did 15 or 20 years ago?

General HOGG. Yes, sir. I think that the biggest way that we are treating that differently is recognizing that it does exist and that it does have an effect on our members coming back from being exposed to those kinds of circumstances.

We certainly have increased our mental health care, and we continually look to practice evidence-based medicine in relationship to PTSD and TBI [traumatic brain injury]. And we continue to care for those individuals coming back.

General TENHET. I will just add to the comments. I think just admitting that we do have these problems, Congress supporting the efforts—$184 million in the last 15 years in research. We are working with the NCAA [National Collegiate Athletic Association], the NFL [National Football League], with their programs, making tre-

mendous strides there. I think it is 450 research programs ongoing right now just in our Medical Research and Materiel Command.

Mr. KNIGHT. Admiral.

Admiral MOULTON. I was just going to also talk about the partnerships that we have had, reaching out to UCLA [University of California at Los Angeles] and our NICoE [National Intrepid Center of Excellence] and really approaching it across the system vice in isolated areas. So I think we are making good strides in that.

Mr. KNIGHT. And just in my last minute here, recently I have sat down with some folks that are working on new and innovative ways of treating our folks on the battlefield. Some of them are these bandages where you can see if they are actually healing or if it is not healing and things of that nature and under-the-skin type of treatments that we can check and we can monitor if it is working or if it is not working or if the skin is healing or not healing.

Have we seen that because we have been at war in the last 15 years more? Or is that just because we are getting more and more advanced in the medical field?

General HOGG. I will take that one too.

It is both. It is both. I think that as you are exposed to situations and you deliver care, you are always thinking about, could I do this better and, if so, how could I do that better? So our research programs are helping us to look at those specific care issues and figure out how could we do it better to improve the survivability of our warfighters downrange.

So I think it is both. It is technology is advancing and we are able to capitalize on that. But the care that we are providing downrange and the kinds of things that we are seeing causes us to look inside and go, could we do that better?

Mr. KNIGHT. Thank you, General.

And I yield back.

Dr. HECK. Dr. Wenstrup.

Dr. WENSTRUP. Thank you, Mr. Chairman.

I appreciate you all being here today.

I want to talk a little bit about some of the process of implementing the things that we want to see as far as keeping the skill levels up and credentialing that, et cetera. And, as we know, so much of our military medicine is in the Reserve Component and so not quite as captive an audience to check all these boxes, if you will.

And, for example, I spent time with CCATT [Critical Care Air Transport Team] in Cincinnati, and I thank the Air Force for letting an Army guy go in there and participate in that. But great training, pre-deployment training, and you really have to qualify to be able to go and serve on that mission. And I think, when I was there, everyone was Active Duty. They could be reservists, as well, to come into that scenario.

But, by and large, too—so I served a year in Iraq at a CSH [combat support hospital]. And in the OR, I was the only one there for a year, and you had others rotating in 90 days. For some, it was been there, done that; you know, not the first time; they got it. For a young surgeon coming in, it was like, holy cow, I have never seen anything like this, I have never done anything like this.

And even in the Reserve Component, as you mentioned, General, we have general surgeons that may be doing plastics, but you know what? At that time, that didn't matter, you are going to do this.

And so how do we get the Reserve Component, in particular, to be able to check all these boxes, make sure that they are ready? And do we have enough surgeons to fill that void?

Anyone.

General HOGG. In the Air Force Medical Service, the training that we provide is opened up to the total force. So the Reserves and the Guard can attend C–STARS, they can attend SMART. They have the same requirements that we have, as far as our Readiness Skills Verification Program, to maintain competencies and currency.

The professional medics in the Reserve, the physicians, the nurses, a little less concerning as far as competency, because oftentimes they are practicing in their specialties. Where we have a challenge is with our enlisted medics, because oftentimes they are not practicing within their specialty. And so they have a very robust program to, during their annual trainings and whatnots, to try to get them up to speed.

Dr. WENSTRUP. Thank you.

General CARAVALHO. Sir, the intent, I believe, for the EMCs is going to be across all components. We shouldn't have an Active Duty standard and a Reserve Component standard. But I acknowledge that it is going to be difficult on your battle assembly to get after some of these things.

So we may face an individual who doesn't have the right clinical mix, acuity, caseload to meet an EMC-type standard. I am hoping that across the board we are going to say, if you can't get it clinically, what are the reasonable facsimiles that you can then show your proficiency and currency? Online training, modeling; partnering, strategic partnering, with civilian or VA entities.

I think if we do this correctly, when you mobilize the reservists, you must institute time. And we have done this with this war. We have learned that you have to provide some time to kind of get their mind into a—you are going to see not just a gunshot wound, not just a knife wound, but you are going to see blast injury, head injury and a gunshot wound and a knife wound at the same time—and a burn.

So that is number one. So the Miami's [Ryder Trauma Center], the Cincinnati trainings of the world before you deploy is going to be critical.

The second thing is there has to be a critical mass of expertise resident when the individuals show up. In other words, we have been successful, I believe, with one burn center in San Antonio rather than a burn center at every facility to ensure everyone has burn center skills. And you rotate staff through there, that that one person, whether it is a nurse, a tech, or doc, can say, this is the burn standard, everybody get on board.

And I think we are going to have to use those types of creative skills to ensure that folks who may not be ready will get ready. Because we know, on the back end, they want to be ready. So when they are willing, it doesn't take long for them to get on board.

Dr. WENSTRUP. So maybe that can be their AT [annual training]?

General CARAVALHO. Yes, sir. Yes, sir.

Dr. WENSTRUP. Thank you. I yield back.

Dr. HECK. Mr. Zinke.

Mr. ZINKE. Thank you, Mr. Chairman. I appreciate you allowing me to talk before the committee.

My background is SEALs [Sea, Air and Land teams]. And I have seen the evolution of casualty care, which has been impressive. I still remain a little concerned about the acquisition part. I don't think we are as fast as the private sector is at getting new techniques to the front. But my question really is about the training.

In looking back at my career, with explosive breaching and TBI, and looking at what has happened in the NFL and all of a sudden an awareness of concussions over a period of time, I remember as a SEAL going into facilities, and we would do 400 explosive breaches in a day and then do it continuously.

What are we doing to examine our training regimen based on what we know today to make sure that we aren't creating, you know, situations, you know, like long-term concussion damage, TBI, in our training regimen? Are we looking at it actively? Do we need to put more resources in it? What can we do to make sure that it is being done?

Because oftentimes, you know, what I call the meat-eaters, the frontline guys, don't pay a lot of attention to the support folks, and I want to make sure that they do. And what do we need to do to make sure that happens?

Admiral.

Admiral MOULTON. Sir, I would have to take that. I am not familiar with that enough to talk intelligently about it.

[The information referred to can be found in the Appendix on page 109.]

General TENHET. You have to look at the force structure piece of this, as well. So, as we are looking at medicine and ensuring we sustain skills as we go forward, the interwar years, the innovation that comes from some of that, applying this, we are not going to have the capability—this is just Bob Tenhet speaking about the future, where I see it going—we are not going to have that capability at our smaller facilities to have the high-complex, high-acuity-type patients going into those facilities.

And we have already taken steps just at Fort Sill, Knox, and Jackson in removing our surgeons and using the surrounding capabilities there in the community areas and actually moving those surgeons to higher-acuity platforms, our health readiness platforms. We are going to have to see more of that as we go forward to ensure that we have the training capability. And I will tell you, it is even a challenge at some of the places we are moving them to look at high-complexity, high-acuity cases as well.

So I think the sharing agreements, working with the civilian populace and, I mentioned earlier, even looking at international programs, we may have to go there. Because the Miami's, there are only so many of those that exist out there. So you are looking at individual skills, and you are also looking at the collective skills training.

Mr. ZINKE. Yeah. I guess my point is that, you know, there are a lot of preventative things that we should be doing up front rather

than waiting until it is an acute problem. And especially with explosive breach, I assume it is getting very similar to going into a boxing match. So I just want to make sure we get ahead of it so we don't have the problems long term.

General.

General HOGG. Yes, sir. With the recent collaboration that we have with the sports industry and the academy, I feel that we will definitely start to see some of those changes coming out of those studies that will inform us on how to better prepare and to prevent these kinds of injuries.

General CARAVALHO. Sir, in my experience with you carnivores, I agree that generally they don't like to listen to medical, and our approach has been "it is easy to be hard but hard to be smart."

What I am excited about readiness nowadays is that we are following some of the soft truths that they are talking about, that you can't recreate someone overnight, so how do you keep someone in the fight for the duration of his or her career and then offer a full life after that career.

So we are getting smarter in our training. The warfighters are bringing us in, on board, to help them understand how to do it right. And we are focusing, as well, on how do we prevent illness and how do we promote wellness so that you are survivable, agile, and resilient during your time in the military.

Mr. ZINKE. Well, certainly, if we can do anything to promote some interest and move in that direction, you know, let us know.

General CARAVALHO. Yes, sir.

Mr. ZINKE. And thank you.

Thank you, Mr. Chairman.

Dr. HECK. Ms. Speier.

Ms. SPEIER. Thank you, Mr. Chairman.

And thank you all for being here.

I would like to follow up on the questions that Congressman Zinke just offered up. There is a wealth of information about chronic traumatic encephalopathy [CTE]. It not the NFL that is researching it. The NFL is trying to sweep it under the rug. Boston University has now, I think, examined the brains of, I don't know, maybe 100 persons who were in the—some in the military but most in sports.

There is a Dr. Omalu, who is the coroner who first kind of identified CTE, that is doing research now with a physician at USC on PET [positron emission tomography] scans of persons who are alive. And they have just done a number of PET scans on veterans, and each PET scan they did showed CTE. One of the problems is it is not just the concussions; it is the subconcussive hits that individuals receive.

And I really think it is incumbent on us to start to do a much better job of identifying it and promoting research in this area as it relates to those who serve in the military. And I am kind of surprised and a little bit stunned that you haven't already undertaken this.

I was told by someone very recently that SEALs now are actually wearing a monitor to determine how many—I don't know if they are concussions or just hits that they receive. Could someone speak to that?

General CARAVALHO. Ma'am, in one of my last jobs in the medical research community, we were working with DARPA [Defense Advanced Research Projects Agency], and there were blast gauges and different types of devices that one could place across their body and on their helmet that would look at the—it was an accelerometer to get a sense if there was a rapid deceleration. And that would then codify how many events you had.

Knowing that our troopers in general don't want to say, "Coach, take me out," so they will not complain of these hits, that is number one.

Number two is IED [improvised explosive device]-related TBI probably represents less than 20 percent of all TBI that at least the Army has seen. So most of it is just in normal training, whether it is combatives or parachute jumping or just normal Army training.

I think you are right that longitudinally we need to understand these concussive and subconcussive events and its effect over time. And the military is also looking at doing pathologic studies of CT. I cannot speak to PET scanning or pre-mortem studies as you described. But we have a keen interest in that in the Department, and we certainly want to partner with any academic center in getting after this. We don't care who finds out what the answer is; we want to get after the answer.

Ms. SPEIER. All right. Thank you.

I yield back.

Dr. HECK. Well, I want to thank you all for your testimony here today. Again, the purpose for this hearing is that, as we undertake the reformation of the military healthcare system, we want to make sure that we keep readiness first and foremost in our minds and that we don't impede, one, the readiness of our military medical providers, but certainly that we don't hinder the medical readiness of our troops. So, again, we thank you very much.

Mrs. DAVIS. May I ask a clarification——

Dr. HECK. Certainly, Mrs. Davis.

Mrs. DAVIS. Thank you.

Thank you all, again, for being here.

I wanted to clarify a little bit, because we were talking about moving physicians into civilian facilities and back and forth, and I understand how it important that is. We also know that a number of our military providers also moonlight for training.

But if we are doing that—and, as I understand it, you are basically managing that within individual services. Is that correct? So don't we need a more centralized way to manage that and to be able to identify the different skill sets that you are using where you have a lot of movement of those providers, of those physicians?

General HOGG. Yes, ma'am. I think as we define those essential military capabilities, we will be able to partner with our other services where we are co-located to utilize those civilian facilities.

The providers that we send there, not all of them are there full-time all the time. Some are there as their primary duty in that civilian facility, but many of them, again, go back and forth. So they provide outpatient care in the MTF, the military treatment facility, but then provide the specialty care, because it is not available in the MTF, in the civilian facility.

But I do believe that as we define what those essential medical capabilities are, we will find opportunities where we could collaborate in that area, as well.

Mrs. DAVIS. Uh-huh.

Admiral MOULTON. Ma'am, I would also add, we are doing that in what we call multiservice markets, where we are working together in a multihospital system or multiclinic system where there are larger populations so we can bring in those kind of cases for us. And then are we adequately staffing, or what is that number of providers that ought to be in that area so that they get the amount of workload for their training.

And then we look at more partnerships with the VA or more partnerships with the private sector. So we are doing some of that.

Mrs. DAVIS. Okay. Well, that is good. I am glad. Sometimes it seems as if, maybe culture, what have you—that there are obstacles to doing that. And if that is the ideal—and, again, looking to all of you, is that ideal, is that much better, that there is that information-sharing so that we know that someone is at the proficiency level required? And if it is in the Army but you don't know it in the Navy, it is not going to do all of us any good, right?

Okay. Great. I am glad that is at least improving. Thank you very much.

Thank you, Chairman.

Dr. HECK. Again, I thank the first panel for your participation today.

And if we can now, we will just swap out panels and continue to move forward.

I would now like to welcome our second distinguished panel. We heard from the, I think, 30,000-foot view. Now we are going to bring it down to a little bit more tactical and operational.

With us this morning is Colonel Linda Lawrence, Special Assistant to the Air Force Surgeon General for Trusted Care Transformation, Office of the Air Force Surgeon General, but also past president of the American College of Emergency Physicians; Lieutenant Colonel Promotable Robert Mabry, who is here as a Robert Wood Johnson Health Policy Fellow with the U.S. House Committee on Energy and Commerce but has a long and distinguished past, beginning as an SF [Special Forces] medic; and Lieutenant Colonel Jean-Claude D'Alleyrand, Chief of Orthopaedic Traumatology Service at the Walter Reed National Military Medical Center.

I appreciate all of you taking the time to be with us this morning.

Colonel Lawrence, you are recognized for 5 minutes for your opening statement.

STATEMENT OF COL LINDA LAWRENCE, M.D., USAF, SPECIAL ASSISTANT TO THE AIR FORCE SURGEON GENERAL FOR TRUSTED CARE TRANSFORMATION, OFFICE OF THE AIR FORCE SURGEON GENERAL, UNITED STATES AIR FORCE

Colonel LAWRENCE. Thank you.

Chairman Heck, Ranking Member Davis, and distinguished members of the committee, thank you for the opportunity to come before you today to discuss the future of Air Force Medical Service readiness.

I am a residency-trained emergency medicine physician with over 23 years of Active Duty service in a variety of positions, such as academics, clinical leadership, 5 years as the Air Force Surgeon General Emergency Medicine Consultant, and in multiple command assignments, including command positions in the deployed environment.

As an emergency physician, you learn early it takes more than your own individual skills to be successful. I like to look at medical readiness from a tiered approach. The basics are individual skills, which we assess through our Readiness Skills Verification Program. For an emergency physician, these involve many procedural skills common for resuscitation of patients, both medical and surgical, which ideally includes a daily practice environment that provides access to sick and critically ill patients.

The next tier would be how we come together as teams, for which in emergency physician we have multiple deployable unit type codes that are found throughout the echelons of care. Just as any sports team of all-star athletes cannot be a winning team unless they practice together, the same analogy applies for our medical teams. On our deployable teams, we need to have skills around a common set of standards or guidelines which drive processes, where every member of the team knows their role as well as the role of others.

We begin to build that capability or teamwork skills through processes in our day-to-day work in our MTFs. Many think we need to see the same type of patients—for example, trauma patients—to build those skills. That is not true. We build them every time we come together as a team to perform a procedure, respond to a complication or resuscitation. Even actions of coordination of care in handoff become critical skills.

The best care can quickly be compromised by a lack of shared processes, poor communication and teamwork. Every day in our MTFs, we are constantly improving our processes, handoffs, and practicing the art of good communication and teamwork. Every patient engagement sustains the readiness of the medical force and an environment that promotes continuous learning and improvement.

Our commitment to trusted care is based on a set of principles which promote high reliability and safety. These principles not only improve the care we deliver to our patients but also improve the processes and skills we bring to the deployed environment.

Beyond our daily roles in our MTFs, we need the opportunity to challenge and assess our individual and team skills, which is provided through platforms like C–STARS and simulation. Through these training modalities, we can replicate some of the unique demands of the operational environment, reinforce the use of combat care clinical practice guidelines, and assess our performance as individuals and teams. This type of training is invaluable, and, while it takes us away from supporting the 24/7 mission at our military treatment facilities we work in, it is the price of readiness.

Finally, readiness is more than combat support. It includes global health engagement and the day-to-day work to maintain a medically ready force and ready medics. Every day, we support medical readiness in the care we deliver to our beneficiaries.

I am grateful for your support and the opportunity to speak with you today and look forward to your questions.

[The prepared statement of Colonel Lawrence can be found in the Appendix on page 78.]

Dr. HECK. Thank you.

Lieutenant Colonel Mabry.

STATEMENT OF LTC ROBERT L. MABRY, M.D., USA, ROBERT WOOD JOHNSON HEALTH POLICY FELLOW, U.S. HOUSE COMMITTEE ON ENERGY AND COMMERCE

Colonel MABRY. Chairman Heck, Ranking Member Davis, distinguished members of the subcommittee, thank you for the opportunity to discuss battlefield medical readiness with you today.

After nearly 15 years of war, the Military Health System has made tremendous advances. Today, if you are wounded in battle and arrive alive to a combat hospital, survival is virtually assured.

Combat casualty care, however, does not begin at the hospital. It begins in the field at the point of injury and continues through the evacuation chain. Our research shows that up to one in four battlefield deaths are potentially survivable. However, the vast majority of these bleed to death before they even make it to a doctor. Care delivered on the battlefield outside of the hospital is the first and key link in the chain of survival and is the next frontier for making any significant advances in combat casualty care.

I believe we face five challenges to improving battlefield survival.

First and most importantly is ownership. Army Medicine trains and equips the medical force, but line commanders execute healthcare delivery on the battlefield. We must determine who is responsible for improving battlefield care delivery. The axiom, "When everybody is responsible, no one is responsible," applies.

Second, data and metrics. We can't improve what we don't measure. We continue to know very little about what happens to casualties before they arrive to the hospital.

Third, expertise. We have very few clinical experts focused on care outside the hospital. Out of about 4,500 Army physicians, there are only 4 board-certified specialists in this field.

Fourth, research and development. Our R&D efforts are focused on developing lifesaving drugs and devices, yet very little research is done on the delivery system or, in other words, how do you get the right care to the right patient at the right time.

Finally, culture. Our organizational culture is centered on caring for military beneficiaries in our fixed facilities. This is our biggest mission, yet it is our wartime mission that makes us unique and justifies our cost to the Nation.

I would like to highlight these challenges by briefly telling the story of the simple tourniquet. The most effective thing a soldier can do to save another soldier's life on the battlefield is to stop bleeding.

The strap-and-buckle tourniquet was first issued during the Civil War, then again in World War I, World War II, Korea, and Vietnam. In 1993, I deployed to Mogadishu, Somalia, as a Special Forces medic in one of the most well-equipped, well-trained units in the world with a strap-and-buckle tourniquet. We went to war

in Iraq and Afghanistan with essentially the same tourniquet that was issued during the Civil War.

There is only one problem with the strap-and-buckle tourniquet: It doesn't work.

In 1945, Dr. Luther Wolff, an incredibly experienced Army surgeon who cared for thousands of patients fighting across Europe, wrote an article in the Army Medical Department Journal describing how the strap-and-buckle tourniquet was ineffective and should be removed from the inventory. That was in 1945.

Yet it remained in the inventory. Death rates from extremity hemorrhage in Korea and Vietnam ranged from 7 to 9 percent. That means that 7,000 sons, fathers, husbands, brothers lost their lives because they did not have an effective tourniquet. In the initial phase of Iraq and Afghanistan, our death rates from extremity hemorrhage were the same as the Korean war.

In 2003, a Special Forces medic invented the combat applications tourniquet. This new tourniquet worked well and was widely adopted by U.S. forces, driving down deaths from extremity injury to virtually nothing.

Meanwhile, the strap-and-buckle tourniquet, first issued during the Civil War, noted not to work during World War II, was finally removed from the DOD inventory in 2008.

How did this happen? How did the most advanced military in the world miss this? More so, how do we prevent something like this from happening again? Ownership, data, expertise, research, culture.

Thank you again for the opportunity to speak today. I look forward to your questions.

[The prepared statement of Colonel Mabry can be found in the Appendix on page 83.]

Dr. HECK. Thank you.

Lieutenant Colonel D'Alleyrand.

STATEMENT OF LTC JEAN–CLAUDE G. D'ALLEYRAND, M.D., USA, CHIEF, ORTHOPAEDIC TRAUMATOLOGY SERVICE, WALTER REED NATIONAL MILITARY MEDICAL CENTER

Colonel D'ALLEYRAND. Chairman Heck, Ranking Member Davis, and distinguished members of the subcommittee, thank you for the opportunity to speak today.

During past conflicts, there have been delays in our ability to provide optimal care for our wounded, particularly when there have been many years since the previous conflict. These interwar years are typically associated with the decline in the funding and infrastructure of our trauma and rehabilitative systems as well as a lack of training for our trauma surgeons. Senior surgeons with experience in combat injuries may no longer be in the military by the time the next conflict arises, and those that remain have most likely been struggling to maintain their skills in the peacetime environment.

In order to adequately care for wounded warriors, trauma surgeons need two different skill sets. They need to be able to treat conventional trauma, such as the injuries seen in the civilian sector, and they also need to be able to treat combat-related trauma.

Conventional trauma proficiency can be maintained with adequate exposure to civilian trauma by allowing surgeons and military hospitals to treat civilian patients and by facilitating the continuing medical education of trauma specialists. Combat-related trauma skills, however, can't be sustained during peacetime because injuries from explosions or machine guns are, thankfully, almost nonexistent in our society.

Therefore, our focus should not be on the sustainment of these skills but, rather, on retention, specifically the retention of those providers who have the firsthand experience treating combat casualties, including not only the surgeons but also the wound care nurses, therapists, prosthetists, and the other specialists who form the chain between the point of injury and the final return to function.

It has been only 3 years since the casualty flow slowed to a trickle, and, already, many, if not most, of the providers that I worked with during the peak of the war are gone. At this rate, there will be very few of us remaining when the next conflict comes around.

I ask now that each of you think about what you would do if your spouse or child were gravely injured in a traffic accident. Without exception, each of you would do your research and you would take them to the best surgeons that you could find. Our combat-wounded can't choose; they go where we send them. So it is our responsibility to send them to the best trauma specialist that we can.

But without aggressively maintaining their skills, who knows how many patients our specialists can optimally treat? Maybe 80 percent? Maybe? But 80 percent is a B-minus. And is a B-minus really the best that we can do for the young men and women that we send into harm's way to preserve our way of life? No. Our combat-wounded deserve A-plus trauma specialists, and we are morally obligated to provide them.

To do so, we need to maximize our trauma specialists' experience and education and to retain those who have already been through the steep learning curve that we all face when we first learn to care for combat-wounded.

Ladies and gentlemen, on behalf of my trauma colleagues and the wounded warriors who we serve, I thank you for your time and continued support.

[The prepared statement of Colonel D'Alleyrand can be found in the Appendix on page 99.]

Dr. HECK. I thank you all for your testimony, and I think it is great as a follow-on to the first panel.

You know, we all understand that it is the small amount of care that we provide that is truly trauma care within the military, and, as was mentioned, 85 percent is disease and non-battle injury, which we would expect that most physicians or healthcare providers would be able to take care of through their daily practice and be competent in.

That is why I tend to focus more on that other 15 percent, where we potentially see the degradation of skills during the interwar years. And my greatest concern, as has been expressed by this panel, is how do we make sure that the lessons learned over the last 15 years of war don't get lost or we don't lose those providers

who have gained that knowledge as we make sure we are ready for the hopefully-never-to-come next war.

And part of that answer has been, well, we rotate folks out to different programs, whether it is C–STARS or down at Miami-Dade or a university medical center. But I still have the concern that that is not adequately preparing the team in order to respond and be ready to perform.

So, as those who, you know, have worked where the rubber really meets the road, how do you address this issue? How would you propose we ensure that the entire team, from the trauma surgeon to the anesthesiologist to the trauma nurse to the x-ray tech to the phlebotomist, all know how to operate as a team in the stressful situation of the trauma activation, whether it is at a FST [forward surgical team] or a combat support hospital, soon to be a field hospital? How would you address that problem that I am fearful we will see over the next decade?

Colonel LAWRENCE. I think it comes back to do we maintain robust medical ecosystems in our large military treatment facilities. And with that, what I am trying to say is we must maintain hospitals that have a diverse patient population that is sick, that is complex.

And I hear you, Chairman Heck, that I agree, we need to see trauma, but, you know, if I put a chest tube in for a trauma patient or I put a chest tube in for a congestive heart failure patient, my team gets the same experience, and that procedure is a procedure.

And so, in order to maintain some of the lessons learned and have the best, we need to maintain GME [graduate medical education] hospitals. And sometimes there has been challenges. Well, that costs too. If we ever consider removing GME, I believe that will be the death knell to our robust hospitals maintaining those lessons learned, bringing up the next generation of researchers and training our own.

I saw the opportunity when I was the Chief of Emergency Medicine down at Wilford Hall. The research we did was in collaboration with NIH [National Institutes of Health] and others, and we taught that to our residents, and we were able to teach them the lessons learned. But not only did the residents get it, all the staff would get it.

And so I encourage that we look at those platforms and we looked at USUHS, our Uniformed Services University, and how do we strengthen with our academic partners in the outside as well.

Dr. HECK. You know, Colonel Mabry, you alluded to the issues of care from the point of injury to the receiving facility. And so, while it may be easier to address some of the training needs within a fixed facility because a team is a team regardless of the procedure or how the procedure is being performed, how would you address the concerns? Because, you know, having the 68 Whiskey [combat medic] respond on post to some medical emergency isn't the same as responding to a battlefield casualty.

Colonel MABRY. Sir, thank you for the question.

So what you are getting at, Dr. Heck, is one of the quintessential challenges of military medicine, which is how do you train providers to deal with horrifically injured combat casualties when you

don't see horrifically injured combat casualties on a day-to-day basis.

So some of that is going to be simulation. Some of that is going to be taking care of sick patients with other conditions like Colonel Lawrence has described. But you have to have that exposure.

And so one of the challenges with our medics is, under the current regimen, the first time they are going to see a seriously injured casualty is when they are on the battlefield. And it may be dark, they may be being shot at, and it may be their best friend.

So I think we have to figure out ways to expose our medics to critically ill patients before that time. One of the bright spots is the Critical Care Flight Paramedic Program, which we have instituted. That requires medics to gain a civilian paramedic credential and hands-on critical care training in the hospital to be critical care paramedics like you would see in a traditional air ambulance system in the United States. By virtue of that training, they are required to do hands-on patient care and they are required to see sick patients in the hospital.

So it is going to be some mix of simulation, some mix of, if you have a civilian credential, you, like some of the doctors do, can moonlight as an EMT [emergency medical technician]. But just seeing casualties every day and seeing patients every day and doing that thinking out in the field with another medic on the ambulance is very valuable even when you deal with sick trauma patients.

Dr. HECK. And then, Colonel D'Alleyrand, as an orthopedist, do you believe that being able to take an orthopedic surgeon out of a fixed facility, let's say has not previously deployed, and then all of a sudden throwing them into an FST, how are we going to assure that that orthopedist is prepared to function as an FST member in a situation similar to the pre-hospital care provider that they never may have been put into previously?

Colonel D'ALLEYRAND. Well, I think that is a very difficult question to answer. The majority of, let's put it this way: There are roughly 130 to 150 orthopods within the Army. Maybe six of us, seven of us are trauma specialists. So the person that you are going to deploy is a total joint surgeon, a sport surgeon, and there really is no effective way to transfer an entire body of knowledge, a career's worth of knowledge to that person.

I think that if you retain senior personnel and if these people go through their residency programs with senior trauma surgeons who have been there and done that and have had those experiences, then you can bring them up along the way with these life lessons so it becomes part of what they know about orthopedists. Because the military orthopedist programs have somewhat of a deployment-related slant in some part of its DNA [deoxyribonucleic acid] regardless of how isolated you are from the war.

So I think that, you know, that is a key cornerstone. And I think on a systems level, which Dr. Mabry can speak at length about, about having a Joint Trauma System that establishes good clinical practice guidelines and establishes dogma, that they can at least have an algorithm that may be not the perfect substitute for being a traumatologist at Walter Reed but at least can give them a path towards doing the right thing at the right time.

Dr. HECK. Okay. Thank you.

My time has more than expired. Mrs. Davis.

Mrs. DAVIS. Thank you, Mr. Chairman.

Again, thank you all very much for being here.

I am going to ask you to do something that is kind of difficult. Could you respond to what you heard earlier in terms, particularly, of exactly what you just said, Colonel, the systems-level organization that is going to give us what is required? You know, kind of getting at that question, what is it going to take in order to try and be sure that the skill sets that are going all the way through the nurse specialties, all of the people that are involved in trauma, so that we really maximize what I understand. We actually have 80 trauma surgeons that are certified in this way across the services? I am not sure if that is correct.

But you heard, and I tried to ask this question, I am not sure if I asked it so artfully, but should we be doing more in terms of that more central organization so that we actually do get the best use of the, you know, exceptionally well-qualified people that we have, knowing that they are not getting the exposure either in the future?

Colonel D'ALLEYRAND. I think it is beneficial to look at it at three different levels, the tactical, at the strategic level.

So myself, as a surgeon, there are certain skill sets that I need to have to handle the very broad range of injuries that come back from theater, be it from the upper limits of survivability in terms of multi-extremity amputee, blast wound, open pelvic injuries, to things that more resemble what you would take off the highway. And those sort of ebb and flow over the years.

So there are things that can be done for me as an individual, be it working at a civilian trauma center, and making it easier for me to continue my own education and ongoing training, which, currently, I mostly subsidize myself. That only makes me as one member of the team proficient. Everyone around me, the x-ray techs, scrub techs, ICU [intensive care unit] nurses, et cetera, basically go from a civilian setting straight into a war setting with no training, if I am the only one who is trained.

So I think making key hospitals that might be expected to see war casualties, making them trauma centers during peacetime or throughout even in and out of conflict, that makes the whole team more efficiently trained.

But then, finally, on the system level, which, again, is Dr. Mabry's wheelhouse, I think that is going to be an overriding entity that can at least help establish the evidence-based guidelines to help guide our practice.

Mrs. DAVIS. Uh-huh.

Dr. Mabry.

Colonel MABRY. So one of the biggest challenges we have, ma'am, is that, unlike the warfighter, when we are home, we are providing health care in our fixed facilities day-to-day. The warfighter is going to the range and training. And so we are doing our civilian beneficiary mission, for the most part, whereas the infantry soldier and the special forces soldier are out training, preparing for the next war.

So we have to figure out how to kind of thread the needle where we can maintain our healthcare benefit but, at the same time, go

to war ready and prepared for the next set of conflicts or next war without a learning period, a learning curve, which is traditionally what happens.

Mrs. DAVIS. Uh-huh. But the systems piece, though, in terms of who organizes, who has the oversight to be sure that things are moving properly. You mention, I thought that was, you can't approve what you don't measure.

Colonel MABRY. Yes, ma'am.

Mrs. DAVIS. So to the extent that there is—whether it is the DHA [Defense Health Agency]—where does that system organization lie? Is it there today? Is it being utilized the way that it should? Is it covering, you know, all aspects of research and development, or at least aware of it?

Colonel MABRY. Yeah, so there is a challenge where there is some lack of interconnectivity. So, in other words, during the start of this war, a lot of talented surgeons recognized we needed a trauma system. We went to war initially in 2001 without a trauma system. And so it took about 4 years to build the trauma system. That became the Joint Trauma System, the Joint Theater Trauma System, where we had senior trauma surgeons deployed in conference and advising and coaching, developing clinical practice guidelines, which, really, you can trace the improvement to our battlefield casualty outcomes to two things; that is one of them.

And so the Joint Trauma System is currently the repository for the system, but that is only in one command. It is only in CENTCOM's [Central Command's] AOR [area of responsibility]. And it is uncertain whether we will continue to have the Joint Trauma System as the conflict winds down.

Mrs. DAVIS. Uh-huh.

Yes, Colonel Lawrence.

Colonel LAWRENCE. I would like to expand on what Dr. Mabry——

Mrs. DAVIS. I am sorry, my time is up. Should we go ahead——

Dr. HECK. There are just a few of us here, so we can go further.

Mrs. DAVIS. Okay.

Colonel LAWRENCE. Dr. Mabry is correct, that is a very important part. And the Joint Theater Trauma System, it encompasses more than the surgeons. And how are we going to preserve that? There are discussions, I am told, at the senior level with our MHS senior leaders, and they are discussing that.

I think, to get back, what you are hearing is there needs to be a value placed on readiness. And my concern and I have been in for almost 24 years of Active Duty is, as the conflicts decline, we are going back to measuring health care competitive with the civilian sector, and we are going to lose that quotient of readiness.

And in the healthcare system today, we are shifting away, too, from looking at productivity to looking at value and value-based care. And I believe that is what we are getting at. It is, how do we preserve outcomes not just on the battlefield but in our MTFs as well? And if we look at the value equation, which is health and care over cost, where do you put readiness? I would argue readiness needs to be up on the top with health and care.

And if we design the system that is going to allow that because all of us have talked and we heard the panel earlier—about the

need for our people to spend time away. I mentioned that, that, you know, you will never get everything in our Military Health System, so we need a synergistic system that is going to allow us to spend some time at the C–STARS and SMART platforms. But where do you put that if you are going to measure our productivity on what we do in the MTFs?

So, as we build that system that has sustained and endured as, hopefully, the need for conflict declines, we need to say, where is that value equation?

Mrs. DAVIS. Yeah. Okay. Thank you.

Dr. HECK. Dr. Wenstrup.

Dr. WENSTRUP. Thank you, Mr. Chairman.

It is a pleasure to have you all here today.

You know, a friend of mine is an Air Force trauma surgeon, a reservist. You may know Dr. Joe Hannigman. And we went to high school together. But he shares the thought, there was multiple deployments, and at first he used to say, "I am going to try and get you everything here that you would get at home." Now he comes home and says, "I am going to try to get you everything here at home that I would get one of our troops in theater," and that is how far we have come in the last 10 to 15 years. And I don't think there has been any greater privilege for me, in my lifetime, as to be any part of that and to take care of our troops.

One of the things that I read in my friend Dr. D'Alleyrand's testimony, what Hippocrates said, "War is the only proper school for surgeons." And I think there is a lot to be said for that. It is how do we capture all this knowledge and maintain it and share it. And I think we all recognize the dilemma; it is where do we go from here.

First, I would like to ask Colonel D'Alleyrand, I think you take the opportunity every chance you get when I have seen you at Walter Reed, with the residents in particular: this is what you do here, but this is not what you would do downrange. Because it is a different set of circumstances, right? You talk about fungal infections, you talk about open wounds, you don't put a rod in here, and this and that.

So how much of an opportunity do you get to carry that over and try to make sure that it is sustained in a resident, a new doctor coming up?

Colonel D'ALLEYRAND. We do have a it is called the Combat Extremity Surgery Course, and it is a joint course that we run with the Navy as well. And so that is taught a couple times a year, typically with upper-level residents or general orthopods who are looking at an upcoming deployment.

It is difficult, though. It is a 2-day course, and we teach a lot of, sort of, doctrine and, sort of, hard-fought lessons, but, I mean, how good can you be at anything in 2 days if you have never really been exposed to it?

So it is difficult to communicate that body of knowledge to anyone, even—you know, I trained at Shock Trauma in Baltimore. I thought I had seen, you know, the worst energy injuries that you could have, and it wasn't even remotely in the ballpark of what we are seeing at Walter Reed.

So I don't think there is any way to truly prepare them, but I think having senior faculty who have had multiple deployments, who have had those hard-won life lessons that don't always work out well when you are operating in a tent in the middle of the night, having those guys around, especially during the interwar periods, to impart that knowledge is the best thing you can get to some sort of corporate memory.

Dr. WENSTRUP. And to that point that you have made, there are opportunities to take those that have left wearing the uniform to be part of the teaching process, those that have actually served in combat. I think maybe we need to take a look at that.

I really would love all of you to weigh in, because we are talking about different ideas of military just providing trauma services, like at SAMMC [San Antonio Military Medical Center], and then also moonlighting. Is there a hybrid out there? I think we need some guidance in how can we help you here to fulfill that role.

Colonel MABRY. Sir, I will take a stab at that.

So I was at the Staff College doing a research paper, and I came across a book where they were addressing some of the same concerns following World War II. And they were talking about bonuses for physicians. And then there was a paragraph in there that talked about the way to keep physicians in the military is to give them meaningful work. And so, if you have the surgeons who are doing the kind of surgery they like to do on a high-volume basis, what they find meaningful, then that is going to help with retention.

With regard to training in civilian centers, I guess I would say, if you crash your car and you have to have your spleen removed, do you want a surgeon that is familiar, proficient, or expert in removal of the spleen?

And so I think our challenge is how to have on the—toward the expert spectrum, you know, when we go to the next conflict. Because, usually, again, there is a learning curve for the first couple of years, and our challenge this time is to go to war next time without a learning curve.

Dr. WENSTRUP. Colonel.

Colonel LAWRENCE. And I would say that learning curve is going to constantly be there. Because, as we have seen the advances that we have had in these last 15 years, I think that is what we are all talking about. How do we preserve that mindset and how do we preserve the system that allows us to continue to advance?

And so, again, I will go back to the extreme importance, you have heard, of GME and not just graduate medical education but our nurse training programs, our technician training programs. We need to keep that. And that is where we can pass some of these lessons learned.

But we need money to continue research. And we need to look at where can we partner with academic institutions and professional organizations to take these lessons learned and continue to grow. How do we sustain the Joint Theater Trauma System? I mean, if we tuck that away in a closet and pull it out, it is not going to be any good, all right? But if we continue—there is a partnership right now with the American College of Surgeons and the

MHS. And they are talking about looking at similar partnership right now with the American College of Emergency Physicians.

So, you know, when we start to bring in the professional organizations, we don't only help our military, we are going to translate those lessons learned into society and vice versa. We are going to keep that learning cycle going, and we are going to continue those partnerships.

So those partnerships, though, cost money. Research costs money. And time away from our clinical practices to engage costs time.

But that is what I find when I talk to physicians, particularly emergency physicians. Anything they can do which shows value of them and that opportunity to go out there and continue to partner with their colleagues and learn and make the entire system better, that is going to keep them in the suits.

Dr. WENSTRUP. Thank you.

I yield back.

Dr. HECK. Dr. D'Alleyrand, when was the last time that you deployed?

Colonel D'ALLEYRAND. I just got back 2 months ago from a deployment to East Africa.

Dr. HECK. Okay. So, you know, as one of the handful of, you know, orthopedic traumatologists within the Military Health System, now that you are at Walter Reed, which does not receive civilian trauma, how do you envision the ability to maintain, just on a personal basis, your trauma-level skills that you have developed over the past several deployments?

Colonel D'ALLEYRAND. It is a problem that I have been struggling with for a number of years now. So I do a number of things in order to maintain what I consider to be an acceptable level of proficiency. I spend two of my weekends a month moonlighting at local trauma centers. I pay my own way to go to trauma courses. I teach at trauma courses. I basically do everything that I can just to try to maintain a certain level. Is it enough? I wish it were more, frankly. It is what it is.

And, you know, certainly, in the deployed setting, those are always difficult questions because it is always a different experience. I was at a couple different places in Afghanistan, and it is very different if you are operating in a rocket-proof Role 3 facility compared to operating in flip-flops in a tent that has, you know, helicopter prop wash knocking the tent around. And Africa was very different entirely.

So I definitely have used my trauma skill set specifically for blast wounds, et cetera, on deployment, but deployment also lots of times is where you have intense degradation of your skill set as well, long periods of just disuse and waiting for something to happen, too.

Dr. HECK. So, in your opinion, if Walter Reed was integrated into the civilian EMS [emergency medical system] system as a receiving facility for civilian trauma, similar to Madigan or Brooke, would that help you and others like you be able to maintain your skills to a higher level?

Colonel D'ALLEYRAND. I think without question. If you look at any job, any skill that you can think of, a musician, a professional

athlete, et cetera, you would never consider being excellent in that field by dabbling in that field. You know, the weekend athlete is, by definition, a weekend athlete.

So, as I said earlier, and it is obviously common sense, if I were to work full time at a civilian trauma center and be given the opportunity to do sabbaticals and rotate at other facilities where there are regional experts in certain techniques, that would make me, you know, ideally suited for my profession, but I would still only be one piece in the big machine. And by opening the doors to key facilities, Walter Reed being one of them, as difficult an undertaking as that may be, that at least gets the entire hospital ready for some measure of trauma.

It is not going to necessarily be ready for blast wound, open pelvis, fungus-infested—the stuff we were seeing when Helmand province was really going off in the winter of 2011, 2010 to 2011. But a facility that is used to seeing high-energy constant flow of trauma is going to be the best-suited that we could have for that situation.

Dr. HECK. I appreciate that.

And I just want to go back to something that both Colonel Mabry and then Colonel Lawrence alluded to, which is, you know, the cost of readiness. And I agree that we cannot compare the military healthcare system to the civilian healthcare system, because you have a unique role and mission to fulfill that the civilian sector does not have.

And, Colonel Mabry, you said it. You know, when you are back or the medics are back from deployment, they are doing their job in beneficiary care and not necessarily getting the ability to go train like the 11 Bravo [infantryman] does, where their only job is really to train for the next war.

And I appreciate what you said, Colonel Lawrence, about our move toward value-based care and where do we put readiness into that equation. You know, earlier this week, we had a briefing from DHA on how they are trying to look at, you know, increasing efficiencies and capability in the military healthcare system by increasing hours, increasing throughput.

So the balance that we have to come up with is, how does that impact the ability for the military healthcare provider to be able to go do those other things that they need to do to be able to execute their military mission?

And so I have always said and will continue to say that military healthcare readiness comes with a cost, and we have to be ready to assume that cost if we want to be prepared to go to war both with a ready medical force and a medically ready combat force.

So I appreciate you folks being here.

Mrs. Davis.

Mrs. DAVIS. Thank you, Mr. Chairman.

And just really quickly, and going back to you, Colonel Mabry, on the ownership issue that you mentioned, is that in conflict in any way with jointness?

Colonel MABRY. No, ma'am. It is just unique to the battlefield. So, you know——

Mrs. DAVIS. And we do jointness on the battlefield. I guess I am wondering as we move to nothing on the battlefield.

Colonel MABRY. The point being is, outside of the hospital, outside of the combat support hospital, it is the operational commander who owns that real estate. It is the operational commander who owns the medics, the battalion medical officers, the critical care flight paramedics, the flight nurses. They work for the combat commander. But yet we defer medical expertise to the medical departments. But they don't have ownership of those assets.

And so there is a friction point there, in that we are responsible for developing the doctrine and the training but the line commander is responsible for the execution. So who owns battlefield medicine is kind of one of our quintessential challenges. And so who is then able to organize the data, the training, the research to feed back into the system to improve care?

And, during this war, it has taken a lot of very strong personalities over a decade to get to those systems in place——

Mrs. DAVIS. But you want the institution to be there to do that.

Colonel MABRY. So how does the institution do that is going to be a big challenge.

Mrs. DAVIS. What do you think?

Colonel MABRY. I think we need to have a senior person in charge of it. So, in the Army Medical Department, we have a brigadier general that is in charge of veterinary medicine, the Veterinary Corps. I think combat casualty care would equally benefit from senior leadership. Whether that is a line officer or a medical officer, I think that would have to be worked out.

Mrs. DAVIS. Uh-huh.

Is there any disagreement with that?

Colonel Lawrence, do you think that is—what would you say?

Colonel LAWRENCE. I would say one of the things that we need to realize is it is not either/or. And sometimes we look at in-garrison health care, what we deliver in our MTFs, and our training and currency that we need there, to what do we need in a deployed environment; and, oh, that is our medical readiness training, and that is over here. And we need to say, how is it all one part of the system?

Mrs. DAVIS. Right.

Colonel LAWRENCE. And I think, you know, there are different—I can't speak to the Army. I can speak to the Air Force. We respond to the line, you know. And when I was a hospital commander, I worked for a wing commander, a line commander, but they did understand the importance of our training.

And so getting back to how do we take and have that system, which is I think what you are saying. We need to stop looking at readiness is a price over here we pay and health care is over here, but how are they merged together, and how do we look at that delivery benefit to have it so that there is a training piece in there that you do in your day-to-day but there is also a training piece that you are not going to get there, and how do you explain that to the mission commander.

Mrs. DAVIS. Uh-huh.

Colonel, did you just want to add anything to that?

Colonel D'ALLEYRAND. I have nothing substantial to add.

Mrs. DAVIS. Okay.

Colonel D'ALLEYRAND. I think there is definitely precedent for——

Mrs. DAVIS. Thank you. I feel like we have asked the same question many different ways, but we really feel a responsibility to help and get this right.

Colonel MABRY. Ma'am, in the pre-hospital setting, I can point to one Army unit that has done this exceptionally well. That is the 75th Ranger Regiment. When General McChrystal was the Ranger regimental commander, he added battlefield medicine or tactical combat casualty care as one of his big four command priorities.

And, since then, the Ranger regimental commander has owned that casualty response system, and they have detailed documentation on what happens to every Ranger casualty. They are very well-trained. Their line leaders, their squad leaders, platoon sergeants, first sergeants are trained in the tactical medical system. And they have been able to demonstrate a remarkable survival rate and exceptional care to all of their Ranger casualties because of the commander's ownership of the system.

Mrs. DAVIS. All right. Great. Thank you very much. And I am sure that even when we look internationally to our partners, our allies, the kind of exchanges that go on, maybe that is another area to look at more in terms of getting that kind of experience.

Thank you very much.

Dr. HECK. Well, again, I want to thank you all, both the first and the second panel, for taking the time to spend with us this morning to provide us with your views on how we can help maintain military medical readiness. It is most instructive. And, certainly, the comments you have made will help inform this subcommittee's decisions as we move forward.

Again, I appreciate everybody's participation.

There being no further business, the subcommittee stands adjourned.

[Whereupon, at 11:15 a.m., the subcommittee was adjourned.]

A P P E N D I X

February 26, 2016

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

FEBRUARY 26, 2016

HOUSE ARMED SERVICES COMMITTEE, MILITARY PERSONNEL SUBCOMMITTEE

STATEMENT OF

MAJOR GENERAL JOSEPH CARAVALHO, JR., US ARMY

JOINT STAFF SURGEON

OFFICE OF THE JOINT STAFF SURGEON / THE JOINT STAFF

BEFORE THE MILITARY PERSONNEL SUBCOMMITTEE

ON ENSURING MEDICAL READINESS FOR THE FUTURE

26 February 2016

HOUSE ARMED SERVICES COMMITTEE, MILITARY PERSONNEL SUBCOMMITTEE

Chairman Heck, Congresswoman Davis, and members of the Subcommittee, thank you for this opportunity to provide the Joint Staff perspective on medical readiness.

The Joint Force performed magnificently for well over a decade of major combat operations in Iraq and Afghanistan, as well as in numerous other military operations across the globe. As has been well publicized, survival rates among battle-injured warfighters have far surpassed that seen in any previous conflict in US history.

Many of the conflicts' military medical lessons learned have already been incorporated into civilian care: Early use of tourniquets and blood products in the field are just two examples of widely accepted changes in civilian clinical practice.

In the recent past, the Congressionally-mandated Military Compensation and Retirement Modernization Commission asked the Department of Defense to ensure its medical force is prepared and ready to perform at a high level immediately upon its next called to action. I am certain Military Medicine's incredible successes these past 14 years across the spectrum of military operations will continue well into the future, despite new and evolving medical requirements in complex security environments. However—to the Commission's point—I also believe the Department will more clearly view its medical readiness posture when Military Medicine makes full use of the enterprise-wide reporting system.

Joint Concept for Health Services

The Chairman of the Joint Chiefs of Staff recently approved publication of the Joint Concept for Health Services, under which all healthcare-related operations are aligned. This document describes in broad terms the Chairman's vision for what the future Joint Force will need from the medical enterprise to support Globally Integrated Operations in uncertain and complicated future security environments. It encompasses the global employment of joint

operational health services and the idea of interoperable Service capabilities guided by common standards and procedures, with the ability to tailor support to meet a wide variety of operational and strategic requirements. It incorporates the utilization of global health networks and partnerships. Finally, it establishes a joint healthcare perspective to guide Combatant Commands, Services, Defense Health Agency, and Joint Staff to achieve unity of effort for joint health service operations.

The Joint Concept transition plan uses the proven Joint Capabilities Integration and Development System (JCIDS) to identify critical operational gaps, validate requirements and initiate disciplined approaches to both materiel and non-materiel solutions. This includes the Capabilities Based Assessments currently underway, such as for bio-surveillance. The JCIDS process also affords the Military Health System opportunities to formally and comprehensively assess existing capabilities developed during the expediency of recent military operations—such as the Joint Trauma System—to ensure they will meet the needs of future globally integrated operations.

Individual Readiness of the Medical Force

By virtue of civilian healthcare industry standards used to monitor and document competency among licensed independent practitioners, many of the hospital-based healthcare providers have been presumed to be fully trained to operate in any deployed operational setting. Specifically, medical credentialing offices use prime-source verification, peer-reviews and supervisor endorsements to validate and document healthcare providers' certifications, currency and proficiency to practice medicine independently.

First of all, this presumption can be mistaken, not only because of the wide spectrum of military operations that one could be asked to support, but also because a provider may be

functioning well, but wholly outside of his or her prescribed deployment specialty. An example of the latter is a trained general surgeon who practices solely in his or her secondary specialty of plastic surgery. Secondly, while absolutely acceptable throughout the civilian healthcare arena, the provider credentialing process resides outside the Department's established reporting system.

The Department recently directed the Services to identify, define and establish a list of joint essential medical capabilities required in operational settings that could be used to assess medical readiness. I have actively participated in this ongoing endeavor.

Once the essential capabilities are approved, the Services will collaborate further to define individual skillsets that would be required across the spectrum of joint military operations, as well as the metrics against which their individual readiness can be assessed, monitored and reported. The Services will report medical readiness in a transparent joint enterprise-wide fashion. The Department will report medical readiness regularly to the Deputy Secretary of Defense and Vice Chairman of the Joint Chiefs of Staff.

Although within the Service lanes of responsibilities, I see these initiatives as important in providing globally integrated health services to the deployed Joint Force.

Increasing Demand for Small-Capacity Joint Medical Forces

As envisioned by the Chairman's Capstone Concept for Joint Operations: Joint Force 2020, we have seen changes recently in the number and size of medical forces requested for employment across the globe. Combatant Command requests reflect the specific military operations being undertaken within their respective areas of responsibility, but, in general, I am seeing an increasing number of validated medical force requests to support smaller, more dispersed units operating across great expanses of land. These tailored medical forces will

require more planning and employment flexibility for operational support as part of the overall Global Force Management effort.

These multiple small-teams have already begun to stress the Joint Force's ability to provide health services for deployed forces and mission partners. In particular, the Joint Force is faced with an increasing demand for individually responsive medical nodes, although the capacity needed at each contingency site remains minimal. I expect this trend to continue, with the increasing number of regional conflicts across the globe.

Globally Integrated Health Services

The ultimate goal is for Globally Integrated Health Services to provide the strategic management and global synchronization of joint operational health services that are sufficiently modular, interoperable, and networked to enable the Joint Force Commander to quickly and efficiently combine and synchronize capabilities. These future health services will be characterized by interoperable Service capabilities guided by common standards and procedures, with the ability to tailor support to meet a wide variety of operational and strategic requirements.

Neither a Joint Readiness Command nor a unified Medical Command would contribute added effectiveness or efficiency to what is already included in the Chairman's JCHS. In particular, the JCHS supports the Chairman's vision, while its implementation plan will provide a clear path forward for the Services and Defense Health Agency to support Globally Integrated Operations. I can exercise my role as global medical synchronizer to work with other Joint Staff Directorates, the Service Surgeons and the Assistant Secretary of Defense (Health Affairs) to meet the Chairman's intent in the delivery of health services to the Combatant Commanders.

Conclusion

Our Service Members and their Families deserve world-class healthcare by extraordinarily trained, equipped and led medical warfighters, from home station to operational deployments to post-deployment and evacuation settings. The Joint Concept for Health Services provides the overarching construct through which Military Medicine will focus its efforts, assess its performance and operate to defined standards in support of the Chairman's vision for the Joint Force.

In essence, the Military Medical community has but one mission, and that is to support the Joint Force with Globally Integrated Health Services. In this regard, medical readiness is Military Medicine's top priority.

Maj. Gen. (Dr.) Joseph Caravalho, Jr.
Joint Staff Surgeon

Major General (Doctor) Joseph Caravalho is the Joint Staff Surgeon at the Pentagon, Washington, D.C. He serves as the chief medical advisor to the Chairman of the Joint Chiefs of Staff, providing advice to the Chairman, the Joint Staff, and the Combatant Commanders. He coordinates all issues related to Health Services to include operational medicine, force health protection, and readiness among the Combatant Commands, the Office of the Secretary of Defense, and the Services.

Major General Caravalho graduated in 1979 with a BA in Mathematics from Gonzaga University in Spokane, Wash. He was commissioned a second lieutenant through the Army ROTC Program. In 1983, he graduated with a Medical Doctorate from the Uniformed Services University of the Health Sciences School of Medicine, and was commissioned a captain in the Medical Corps.

Clinically, Caravalho held positions as a staff internist, nuclear medicine physician, and cardiologist. He served as Chief of Cardiology at Tripler Army Medical Center, Honolulu, Hawaii, and as Deputy Commander for Clinical Services at Womack AMC, Fort Bragg, N.C. His operational medical experience includes assignments as Surgeon, 1st Battalion, 1st Special Forces Group (Airborne), Okinawa, Japan; Physician Augmentee, Joint Special Operations Command, Fort Bragg; Surgeon, 75th Ranger Regiment, Fort Benning, Ga.; Deputy Chief of Staff, Surgeon, U.S. Army Special Operations Command, Fort Bragg; and as the Assistant Chief of Staff, Health Affairs, XVIII Airborne Corps, Fort Bragg. He also commanded the 28th Combat Support Hospital and the 44th Medical Command (Rear) (Provisional), both at Fort Bragg. He has two deployments in support of Operation Iraqi Freedom, most recently serving as the Surgeon for both Multi-National Force-Iraq and Multi-National Corps-Iraq. He then served in succession as the commanding general for Southern Regional Medical Command and Brooke AMC; Northern RMC; and the Army Medical Research and Materiel Command and Fort Detrick, MD. His most recent positions before becoming the Joint Staff Surgeon were as the Army Deputy Surgeon General and Deputy Commanding General (Support) of the US Army Medical Command.

Major General Caravalho is a graduate of the Command and General Staff College and the Army War College. He earned the Special Forces and Ranger tabs and was awarded the Expert Field Medical Badge. He completed the Army Airborne and Flight Surgeon schools, as well as the Navy Dive Medical Officer and SCUBA courses. He holds current certification in nuclear cardiology, and he is a Certified Physician Executive. His military awards include the Distinguished Service Medal with two Oak Leaf Clusters (2 OLC), Legion of Merit (OLC), Bronze Star Medal, Defense Meritorious Service Medal, Army Meritorious Service Medal (6 OLC), Joint and Army Commendation Medals, and the Army Achievement Medal (3 OLC). He is also a member of the Order of Military Medical Merit.

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE SUBCOMMITTEE ON MILITARY PERSONNEL

COMMITTEE ON ARMED SERVICES

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: ENSURING MEDICAL READINESS IN THE FUTURE

STATEMENT OF: MAJOR GENERAL DOROTHY HOGG
DEPUTY SURGEON GENERAL
UNITED STATES AIR FORCE

FEBRUARY 26, 2016

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

Chairman Heck, Ranking Member Davis, and distinguished members of the Committee, thank you for the opportunity to come before you today to discuss the future of medical readiness in the Air Force Medical Service (AFMS).

The Air Force is committed to sustaining the expeditionary readiness of a professional medical force capable of providing trusted care to families and warfighters at home station, while simultaneously delivering agile combat support to the combatant commander. For more than a decade the AFMS has invested in a broad portfolio of readiness training programs that prepare the individual medical specialist and the deployable medical team for reliable performance across the full range of military operations. These AFMS readiness programs institutionalize the casualty care lessons learned on the battlefield and will continue to enable essential medical capabilities well into the future.

The AFMS provides a light, lean and modularized rapidly responding medical capability which can be tailored to meet specific

requirements. If more definitive care is required, the AFMS supports an effective "evacuate and replace" policy through aeromedical evacuation (AE) of joint and combined forces. With this focus on preventive medicine, superior health care, and aeromedical evacuation, the AFMS promotes and advocates the optimization of human performance sustainment and enhancement, including the optimal integration of human capabilities with operational systems. This scalable nature enables the AFMS to deploy capabilities ranging from small teams providing highly skilled medical care for a limited number of casualties, to a medical system as large as an Air Force Theater Hospital (AFTH) that can provide specialized medical care to a population at risk of several thousand.

Above all, medical readiness is our reason for being and begins with our Military Treatment Facilities (MTF). Every MTF in the Air Force is a medical readiness platform aligned with an operational Wing to directly enhance the medical readiness of warfighters and care of their families. The goal of every patient engagement is to improve the

performance of the Airman at work, at home and in the deployed environment.

Everything we do is centered on readiness. The care we provide to military personnel, retirees and families directly sustains the readiness of our medical force. Correspondingly, in order to sustain expeditionary medical readiness, our health care providers must have access to a patient population that affords an adequate volume of workload, breadth of clinical diversity, and acuity.

Our ambulatory clinics rely upon a diverse patient population to support an effective scope of practice in primary care specialties, which in turn drives the specialty and surgical care workload for the entire health system. This demographic is simply not available in the active duty and active duty dependent beneficiary population. To achieve this optimal patient mix our primary care providers need to see a mix of adult and pediatric patients who have a high enough disease burden to maintain their clinical currency for readiness in order to be prepared to care for the ill and injured in expeditionary environments.

We recognized our smaller hospitals which exist to support Operational Plan requirements have smaller beneficiary populations. In order to ensure the currency of our staff at these locations we implemented the Small Hospital Clinical Skills Enhancement Program, which includes limits on tour length for key staff, rotations to facilities with higher volumes of patients, aggressive use of medical simulation, and augmentation by senior clinicians.

Just like our expeditionary medical capability is scalable, so is the medical readiness training we provide. Our Readiness Skills Verification Program establishes minimum baseline Air Force Specialty Code (AFSC) skills required in a deployed environment. These skills are identified by senior clinical consultants and enlisted functional area managers based on Combatant Commander requirements. They are deliberately updated with lessons learned and emerging medical evidence. Personnel complete their Readiness Skills Verification Program (RSVP) training before they enter their deployment

vulnerability period to ensure they are ready at any time. This training applies to all individuals who hold a medical AFSC.

The Sustained Medical and Readiness Trained (SMART) program expands training opportunities for skills requiring higher volume and complexity of hands-on care than normally seen in our smaller MTFs. The SMART program is a three-tiered approach. The first tier is organic training where medical personnel train with a standardized curriculum using routine operations and simulation-based training opportunities. The second tier utilizes local training affiliation agreements and partnerships with civilian, Sister Service or Department of Veterans Affairs (VA) hospitals when Tier 1 opportunities are not adequate to sustain essential medical skills. The third tier, regional currency sites, such as the University Medical Center in Las Vegas, are utilized when Tier 1 or Tier 2 opportunities are inadequate to ensure the preservation of essential medical skills.

In addition, for well over a decade we have had a cadre of physicians, nurses, and technicians embedded in our Center for

Sustainment of Trauma and Readiness Skills (C-STARS) Level 1 trauma facilities such as the University of Maryland's Baltimore Shock Trauma, University of Cincinnati, and St Louis University. Hundreds of our medics have had elite trauma and critical care training through these facilities and remain prepared to deploy anywhere needed. As an example, the University of Cincinnati program provides a capstone experience for our Critical Care Aeromedical Transport Teams. The curriculum includes advanced medical simulation and high-acuity intensive care exposure.

The Air Force has 85 graduate medical education (GME) programs in 31 specialties that develop the knowledge, skills and attitudes of highly qualified medical personnel to support the missions of the AFMS. Our training programs help ensure the competency and currency of medical personnel by maintaining the health of DoD personnel and by providing health care to deployed military personnel and other beneficiaries.

The civilian sector does not have the capacity to provide the residency and fellowship training needed to maintain our medical

specialty requirements. Participation in GME, to include leadership, research, teaching, and mentoring, is vital to maintaining the competency and currency of all Corps in the AFMS. In addition, 15% of the overall physician workforce in the United States matriculated from DoD and VA GME platforms.

The active duty GME training platforms are crucial to maintaining the current AFMS delivery of preventive and primary care to DOD personnel, health service support to the combatant commanders and high-reliability care to all beneficiaries.

The Military Compensation and Retirement Modernization Commission (MCRMC) recommended in their Final Report (29 Jan 2015) that the DoD identify Essential Medical Capabilities (EMCs) that are "vital to effective and timely health care during contingency operations." In response, the Under Secretary of Defense for Personnel and Readiness chartered the Joint EMC Working Group (July, 2015) to use the Joint Capabilities Integration and Development System (JCIDS)

process for a Capabilities-Based Assessment (CBA) and joint requirements analysis.

From this analysis, the Joint EMC Working Group has three objectives. First, the group will identify, define, categorize, and prioritize recommended EMCs that are vital to effective and timely health care during contingency operations. Second, it will determine how to measure and report the readiness of EMCs within existing DoD reporting tools, identifying gaps in the ability to report readiness. Third, it will identify and recommend non-material solutions for the identified reporting gaps.

The Air Force is strongly supportive of the Joint EMC Working Group and actively participating in the CBA. To date, the group has utilized the Joint Concept for Health Services (August, 2015) as a framework to identify EMCs for analysis. The Joint EMC Working Group plans to complete the CBA as chartered in October, 2016.

As a critical resource, our medical personnel and equipment are presented to the combatant commander as a deployable platform. These

expeditionary teams are developed by our Manpower and Equipment Force Packaging Responsible Agencies (MRA) to support air, ground and Special Forces operations. Our MRA's collaborate with Air Education and Training Command to develop and conduct hands-on, team-based training, ensuring Air Force personnel deploy with appropriate essential medical capabilities. This training has no civilian equivalent. Team members are familiarized with their expeditionary medical equipment and exercised in the tactics, techniques, and procedures that will be used in the expeditionary environment.

A second vital role of the MRAs is the development of new medical capabilities. The MRAs leverage advances in science and technology, and use lessons learned during previous expeditionary operations to meet emerging and future global medical requirements. Specifically, our MRAs are developing a new surgical team to support combat operations across dispersed environments. These five-person teams will be capable of providing damage control surgery in an austere environment, delivering critical care holding during airlift, and

performing emergent life-saving surgery in flight. They will be fully integrated in our EMEDS Health Response Teams supporting Air Expeditionary Wings, but will have the flexibility to independently deploy in support of unconventional medical requirements with light, lean and modular supplies/equipment. This and other future innovations will increase our ability to treat casualties and return the wounded, ill and injured to duty.

The AFMS continues to meet the evolving requirements of the combatant commander with a ready medical force. Foundational to our expeditionary medical capabilities is a system of MTFs that provides health readiness services with every encounter, a population of patients that drive the workload, case diversity and the acuity necessary for clinical currency for readiness, and our proven readiness training programs. Through these efforts we will provide trusted and reliable health services to our Airmen and their families for years to come.

We are grateful for the opportunity to meet with you today and look forward to your questions.

MAJOR GENERAL DOROTHY A. HOGG

Major General Hogg is the Deputy Surgeon General and Chief of the Air Force Nurse Corps, Office of the Surgeon General, Headquarters U.S. Air Force, Washington, D.C. She directs operations of the Air Force Medical Service, composed of a $5.9 billion, 44,000 person integrated health care delivery system serving 2.6 million beneficiaries at 75 military treatment facilities worldwide. She oversees the daily functions of the Air Force Surgeon General's office with offices in Washington, D.C., Fort Detrick, Maryland, Falls Church, Virginia and San Antonio, Texas. Included in these functions are clinical operations and quality, aeromedical evacuation, global force management, readiness, strategic medical plans, programs and budget, medical force management and medical information systems management. Gen. Hogg coordinates Air Force Medical Service operations through major commands, Joint Service agencies, the Assistant Secretary of Defense (Health Affairs), the Defense Health Agency and the Department of Veterans Affairs.

Additionally, as chief of the Nurse Corps, Gen. Hogg is responsible for recruitment, accession, training and education of 18,000 Total Nursing Force Airmen (Active Duty, Reserve and Air National Guard). She oversees policy and program development which ensures the highest standards for patient-centered, evidence-based nursing practice for all eligible beneficiaries.

Gen. Hogg entered the Air Force in 1984 and has commanded at the squadron and group level and served as the deputy command surgeon for two major commands, She has deployed in support of Operations Iraqi Freedom and Enduring Freedom.

EDUCATION

1981 Bachelor of Science degree in nursing, University of Southern Maine; Portland, Cum Laude
1986 Squadron Officer School, by correspondence
1987 Women's Health Nurse Practitioner, School of Healthcare Sciences, Sheppard AFB, Texas
1992 Master of Public Administration, Troy State University, Troy Ala.
1996 Air Command and Staff College, by seminar
1997 Master of Science in Nursing, Medical University of South Carolina, Sigma Theta Tau
2002 Air War College, by seminar
2007 Executive Development Intern, SDE in-residence equivalent
2010 Interagency Institute for Federal Healthcare Executives
2012 Joint Medical Executive Skills Medical Executive Skills Capstone Course
2014 Capstone, Fort Lesley J. McNair, Washington, D.C.

ASSIGNMENTS

February 1984 – September 1986, Staff Nurse, OB/GYN Nursing Unit, U.S. Air Force Regional Hospital, Elgin AFB, Fla.
September 1986 – March 1987, Nurse Practitioner Student, School of Healthcare Sciences, Sheppard AFB, Texas March 1987 – September 1989, Women's Health Nurse Practitioner, 410th Medical Group, K.I. Sawyer AFB, Mich. September 1989 – December 1992, Women's Health Nurse Practitioner, 52nd Medical Group, Spangdahlem AB, Germany
December 1992 – August 1996, Women's Health Nurse Practitioner, 18th Medical Group, Kadena AB, Japan
August 1996 – July 1997, AFIT Master's Student, Medical University of South Carolina, Charleston
July 1997 – December 2001, Maternal-Infant Flight Commander, 366th Medical Group, Mountain Home AFB, Idaho
December 2001 – May 2002, Family Practice Flight Commander, 314th Medical Group, Little Rock AFB, Ark. May 2002 – July 2004, Clinical Medicine Flight Commander, 314th Medical Group, Little Rock AFB, Ark.
July 2004 – June 2006, 22nd Medical Operations Squadron Commander/Chief Nurse Executive,

McConnell AFB, Kan.
June 2006 – June 2007, Executive Development Intern, Manpower and Organization/SDE equivalent, Headquarters U.S. Air Force/SG, Bolling AFB, Washington, D.C.
June 2007 – July 2008, 79th Medical Operations Squadron Commander, 79th Medical Group, Andrews AFB, Md. July 2008 – August 2010, 9th Medical Group Commander, 9th Reconnaissance Wing, Beale AFB, Calif.
August 2010 – June 2012, Deputy Command Surgeon, Air Force Central Command, Shaw AFB, S.C.
June 2012 – July 2013, Deputy Command Surgeon, Air Force Materiel Command, Wright Patterson AFB, Ohio July 2013 – September 2014, Assistant Surgeon General, Medical Force Development, Office of the Surgeon General, Falls Church, Va.
September 2014- June 2015, Director, Medical Operations and Research Office of the Surgeon General, Headquarters U.S. Air Force, Falls Church, Va.
June 2015 - present, Deputy Surgeon General/Chief, Air Force Nurse Corps, Office of the Surgeon General, Falls Church, Va.

MAJOR AWARDS AND DECORATIONS
Legion of Merit
Bronze Star
Meritorious Service Medal with seven oak leaf clusters
Air Force Commendation Medal with two oak leaf clusters

PROFESSIONAL CERTIFICATIONS
Women's Health Nurse Practitioner National Certification Corporation

EFFECTIVE DATES OF PROMOTIONS
Second Lieutenant 1984
First Lieutenant 1986
Captain 1988
Major 1995
Lieutenant Colonel 2001
Colonel 2006
Major General 2013

(Current as of July 2015)

RECORD VERSION

STATEMENT BY
BRIGADIER GENERAL ROBERT D. TENHET
DEPUTY SURGEON GENERAL AND
DEPUTY COMMANDING GENERAL FOR SUPPORT
UNITED STATES ARMY MEDICAL COMMAND

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
MILITARY PERSONNEL SUBCOMMITTEE

SECOND SESSION, 114TH CONGRESS

ON ENSURING MEDICAL READINESS IN THE FUTURE

JANUARY 27, 2016

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE

Chairman Heck, Ranking Member Davis, and distinguished members of the subcommittee, thank you for this opportunity to provide the Army and Army Medicine's perspective on the steps we must take to ensure future medical readiness of the force.

Throughout my 32 years of service, I have personally witnessed the critical importance of Army Medicine, from supporting our paratroopers conducting airborne operations at Fort Bragg, to caring for the wounded in Baghdad. Army Medicine is absolutely essential to maintaining the health and readiness of our Soldiers who must be ready to deploy on a moment's notice. Our trained and ready medical providers have contributed to a survivability rate of 92%, the highest in the history of warfare, despite the increasing severity of today's complex battle injuries. These advances in combat casualty care are primarily due to an integrated system of health that extends from the battlefield through Landstuhl Regional Medical Center in Germany to our inpatient hospitals in the United States. The continued investment in our world-class research programs has advanced the technologies and training needed to save lives, and maximize quality of life.

The Army's number one priority is Readiness. Army Medicine has a two-fold readiness mission. We must ensure Soldiers are medically ready to deploy, and we must generate and maintain a ready medical force while supporting our Soldiers, Families, and Retirees at home.

Medical Readiness of the Force

The global security environment continues to degrade and to place high demands on the United States Army. Over the past year, the Army had as many as 190,000 Soldiers simultaneously deployed to over 140 countries around the world to advance our national security interests. The Army derives its power from the collective strength of its Soldiers rather than

advanced platforms. Our Soldiers are our weapon systems. Their health is an essential component of their readiness.

Since 2012, medical readiness of the force has increase from 73% to 83%. However, having 17% of the total force non-deployable for medical reasons is unacceptable. As I sit here today, we will see 31K Soldiers in our primary care clinics, 32K Soldiers in our specialty clinics, and 1K Soldiers for surgeries. Army Medicine is leading a Medical Readiness Transformation across the Army. This transformation will improve the access, visibility, and transparency of medical readiness information for commanders at all levels and streamline the processes by which they make deployability determinations.

The Army is simplifying the Medical Readiness Classification codes, which are used to identify Soldier deployability; making enhancements to the Commander's portal, MEDPROS, and eProfile; making revision to major medical and administrative policies and regulations; and conducting training across the force on the new policies and enhanced systems.

A new capability that is being implemented across the Army is the Medical Readiness Assessment Tool (MRAT). The MRAT is a predictive tool that identifies a Soldier's risk for becoming medically non-available during the next 12 months, and allows both Commanders and healthcare teams to proactively manage Soldiers' health, and therefore medical readiness, through early intervention.

The Medical Readiness Transformation will maximize the medical readiness of the force and maximize combat power to support ongoing and emerging requirements from Combatant Commanders.

Readiness of the Medical Force

Today's uncertain global environment demands the Army be prepared to confront near-peer competitors abroad, defend the Homeland, and respond to a wide range of crises, ranging from peacekeeping to disaster relief and humanitarian assistance. Army Medicine must maintain a ready and deployable medical force to respond to the full spectrum of these requirements.

During the past 14 years of combat operations, Army Medicine contributed to a survivability rate of 92%, the highest in the history of warfare, despite the increasing severity of battle injuries. While Army Medicine comprises 50% of DOD direct care in garrison during peacetime, the Army contributed approximately 80% of the effort in Iraq and Afghanistan. From point of injury to rehabilitative care, Army Medicine is poised and ready to respond.

However, it would be a mistake to focus exclusively on sustainment of combat trauma, surgery and burn capabilities. Our experience shows that the Army must maintain a broad range of medical capabilities to support the full range of military requirements. From 2001 to 2015, only 16% of those evacuated from Iraq and 21% of those evacuated from Afghanistan were injured in battle. The remaining Service members were evacuated for disease or non-battle injuries. Similarly, greater than 95% of those seen in theater were treated for disease and non-battle injuries rather than combat injuries.

The 2014 deployment of over 2,500 personnel to support Operation United Assistance in Liberia demonstrated the value of non-trauma related medical specialties and the importance of force health protection in deployed environments where the major threats to our Soldiers include infectious diseases rather than armed combatants. Some argue this is not part of our mission set, but invariably, when the task is unique and difficult, the nation leans on its military. In this most recent case in Liberia, Army Medicine was ready at a moment's notice. The geographically endemic medical risks to our forces in support of the rebalance to Asia and continued operations

in Africa reinforce the continued need to remain ready to provide a broad range of health service support for globally integrated operations.

Having a relevant and ready medical force doesn't happen overnight. Our Army Graduate Medical Education (GME) programs, which take 5 to 7 years to stand up, are critical to develop trained and ready military medical personnel. Army GME is the largest GME platform in the DoD and supplies more than 90% of all military physicians for the Army. GME programs are vital to our ability to recruit and retain highly skilled medical providers. Our GME programs have nearly 1,500 trainees in 149 programs located across 10 of our military treatment facilities (MTFs). Civilian GME programs do not have the capacity to absorb our interns, residents, and fellows, and do not have curricula to train the military unique knowledge and attributes, such as writing profiles or understanding military organization and operations, that are critical for success in the military health system. Our GME programs continue to lead the nation in training. The first time board certification pass rate of 95% across Army GME exceeds the 87% national rate. More importantly, Army GME programs develop the providers which directly or indirectly support the broad range of COCOM requirements, ranging from combat operations to humanitarian assistance to building host nation capacity. Agile GME program management assures ongoing alignment of training slots with deployment requirements.

Our medical centers, hospitals, and clinics serve as critical readiness and training platforms for military medical personnel. Our medical centers serve as specialized training centers for medical teams to provide care of wounded, ill and injured Soldiers as well as conduct clinical research for complex battle injury and illness. These medical centers are complemented across the United States and overseas by military treatment facilities that vary in size from ambulatory clinics to community hospitals. The entire system ensures our medical force is

trained, ready, and relevant to provide primary and specialty care in the myriad of settings and conditions faced around the world.

While we cannot replicate the extreme trauma cases seen overseas in combat environment, the knowledge, skills, behavior and judgment obtained in our MTFs with complex patients is transferable to deployment critical thinking and judgment. A varied and complex mix of patients is essential to train, challenge, and to hone the skills of our entire medical team. The active duty population at most Army installations, comprised mostly of healthy young adults, is insufficient to either maintain an inpatient hospital, or to provide the full scope of practice required for board certification of our military providers.

Of the current 1.3 million beneficiaries enrolled to Army Medicine, 67% are non-Active Duty Service Members (ADSMs). Excluding behavioral healthcare, 83% of our total inpatient workload and 79% of our high-acuity inpatient workload is for Family members, Retirees and other non-ADSMs. Additionally, non-ADSMs comprise 42% of total outpatient care, 50% of our outpatient general surgery workload, and 90% of complex surgical cases. Our inpatient MTFs are critical to the sustainment of our GME programs and to maintaining the readiness of the entire medical team. Reducing our beneficiary population to only active-duty will result in an inability to sustain our GME programs due to lack of teaching cases and exposure to the wide breadth of disease within each specialty necessary to support any residency training program. Further it would degrade our ability to maintain the medical skills of our entire team. Beyond trained physicians, our deployable Combat Support Hospitals and Forward Surgical Teams require trained allied health professionals, nurses, OR techs, Lab techs, and other specialties that operate as teams and maintain their skills in our MTFs. The loss of inpatient capability would pose significant risk to the maintenance of their skills and directly impact the readiness of our

operating force medical units.

Maintaining Critical Medical Capabilities for the Next Conflict

The Army recognizes the need to maintain the skills learned over 14 years of war to ensure these capabilities do not atrophy, while also ensuring that we maintain the full scope of medical capabilities needed to be flexible and adaptable to all future globally integrated operations.

In October 2015, the Joint Staff published the first ever Joint Concept for Health Services (JCHS). This sentinel document describes, in broad terms, the capabilities required by the joint medical force to support Globally Integrated Operations.

The Army is collaborating with the other Services and the Joint Staff to participate in the Joint Essential Medical Capabilities (JEMC) Working Group. The JEMC WG is identifying, categorizing and prioritizing a set of Essential Medical Capabilities derived from the Joint Concept for Health Services. As part of this effort, the Services will measure and report how they will deliver required capabilities in a Service-specific manner.

Army Medicine is conducting analysis of the required knowledge, training and clinical experience needed of providers by specialty in a deployed environment. The Army Medical Department Center and School and RAND are conducting a gap analysis using inpatient and outpatient data (e.g. diagnoses, procedures, injury severity) from Iraq, Afghanistan, Liberia and other operations to determine additional clinical education, training and experience requirements beyond those provided at the Military Treatment Facilities.

The Army Medical Department Center and School is developing standardized Mission Essential Task Lists (METL) for each medical operational force type unit which will include

individual and collective training tasks by role. These essential tasks will be integrated into standardized reporting systems, and will include the identified critical medical operational skills to ensure individual and unit readiness. Readiness measures will be developed and reported in systems of record, such as the Digital Training Management System (DTMS) and the Defense Readiness Reporting System-Army (DRRS-A).

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Conclusion

Since the inception of our Army, Army Medicine has continually served as an integral part of the battlefield and remains an essential combat multiplier. No other health care organization in the world, military or civilian, could have accomplished what Army Medicine has since 2001, supporting the full spectrum of combat operations in multiple Theaters. Over the past 14 years we have stood shoulder -to - shoulder with our Soldiers in Iraq and Afghanistan, responded to humanitarian crises and natural disasters and provided high quality health care to our beneficiaries at home. During my second deployment to the Middle East, my Brigade and two of our four Combat Support Hospitals deployed to theater; shortly thereafter, one of the remaining two Hospitals deployed in support of Hurricane Katrina. As always, Army Medicine is there when the Nation calls, relevant and ready.

I am committed to improving the readiness of our Soldiers and the readiness of our medical force. I look forward to working with Congress in this endeavor.

I want to thank my partners in the DoD, the VA, my colleagues here on the panel and the Congress for your continued support.

Brig. Gen. Robert D. Tenhet
Deputy Surgeon General and Deputy Commanding General (Support),
U.S. Army Medical Command

Brigadier General Robert D. Tenhet was born into an Army Family. In 1984, he graduated from Elon College with a Bachelor of Science degree in Accounting and was commissioned in the Medical Service Corps as a Distinguished Military Graduate.

Before assuming his current duties of Deputy Surgeon General and Deputy Commanding General (Support), US Army Medical Command, he served as Commanding General, Regional Health Command – Atlantic (Provisional) from May 2014 to November 2015. His other military assignments include: Executive Officer to The Surgeon General, Office of the Army Surgeon General, Falls Church, VA; Commander, Joint Task Force 1st Medical Brigade, Camp Victory, Baghdad, Iraq (Operation Iraqi Freedom); Commander, 1st Medical Brigade, Fort Hood, Texas; Chief of Staff, Womack Army Medical Center, Fort Bragg, N.C.; Chief of Staff, 44th Medical Command, Fort Bragg, N.C. and Baghdad, Iraq (Operation Iraqi Freedom); G-3, 44th Medical Command, Fort Bragg, N.C. and Baghdad, Iraq (Operation Iraqi Freedom); Commander, 261st Area Support Medical Battalion (Airborne), 44th Medical Command, Fort Bragg, N.C.; Associate Dean, Academy of Health Sciences, AMEDD Center and School, Fort Sam Houston, Texas; Executive Officer and Deputy Chief of Staff, Tripler Army Medical Center, Hawaii; Chief, Clinical Support Division, Bassett Army Community Hospital, Fort Wainwright, Alaska; Baylor Resident, Keller Army Community Hospital, West Point, N.Y.; S-3, 56th Medical Battalion, 44th Medical Brigade, Fort Bragg, N.C., Saudi Arabia (Operation Desert Shield/Desert Storm); Commander, 36th Medical Clearing Company (Airborne), 44th Medical Brigade, Fort Bragg, N.C; Executive Officer, HHC, 307th Medical Battalion (Airborne), 82d Airborne Division, Fort Bragg, N.C.; Platoon Leader and Executive Officer, HHC, 1/325 Airborne Infantry Regiment, 82d Airborne Division, Fort Bragg, N.C.

Brigadier General Tenhet earned his Master's Degrees from the U.S. Army-Baylor University Graduate Program in Healthcare Administration and the U.S. Naval War College in National Security in Strategic Studies. His military education includes the AMEDD Basic and Advanced Courses, the Combined Arms and Services Staff School, and U.S. Army Command and General Staff College.

His awards and decorations include: the Legion of Merit (with Oak Leaf Cluster), Bronze Star Medal (with Oak Leaf Cluster), Meritorious Service Medal (with four Oak Leaf Clusters), Army Commendation Medal (with five Oak Leaf Clusters), Army Achievement Medal (with five Oak Leaf Clusters), National Defense Service Medal (with Oak Leaf Cluster), Southwest Asia Service Medal (with two Bronze Stars), Iraq Campaign Medal, Global War on Terrorism Service Medal, Armed Forces Reserve Medal, Army Service Ribbon, Overseas Service Ribbon (with Oak Leaf Cluster), Saudi Arabia Kuwait Liberation Medal, Kuwait Liberation Medal; Master Parachutist Badge, Expert Field Medical Badge, Army Staff Identification Badge and, Canadian, Turkish and Honduran Airborne Badges. He is a member of the Order of Military Medical Merit and the American College of Healthcare Administrators.

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF

REAR ADMIRAL TERRY J. MOULTON, MSC, USN

DEPUTY SURGEON GENERAL OF THE NAVY

BEFORE THE

SUBCOMMITTEE ON MILITARY PERSONNEL

OF THE

HOUSE ARMED SERVICES COMMITTEE

SUBJECT:

ENSURING MEDICAL READINESS IN THE FUTURE

February 26, 2016

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE

Chairman Heck, Ranking Member Davis, distinguished Members of the Committee, thank you for providing me the opportunity to share some perspectives on Navy Medicine and our most important strategic priority, medical readiness. We remain grateful to the Committee for your leadership and strong support of military medicine.

The core mission of the Navy Medicine is inextricably linked with those we serve, the United States Navy and United States Marine Corps. We must be fully engaged with supporting our maritime strategy: *A Cooperative Strategy for the 21st Century Seapower: Forward, Engaged, Ready.* It requires us to be fully synchronized with the Chief of Naval Operations and the Commandant of the Marine Corps as they expect us to keep their Sailors and Marines healthy and ready to deploy, as well as deliver world-class care, anytime, anywhere.

Force Health Protection is the bedrock of Navy Medicine. It is what we do and why we exist. It is our duty – our obligation and our privilege – to promote, protect and restore the health of our Sailors and Marines. This mission spans the full spectrum of health care, from optimizing the health and fitness of the force, to maintaining robust disease surveillance and prevention programs, to saving lives on the battlefield. When Marines and Sailors go into harm's way, Navy Medicine is with them. On any given day, Navy Medicine is underway and forward deployed with the Fleet and Marine Forces, around the globe.

Medical Readiness Requirements and Reporting

Our personnel are critical to delivering rapidly deployable, fully integrated, operational support to the Combatant Command (CCMD); both organic and surge forces. The organic forces include personnel assigned to an operational commander and routinely deployed as part of operations, exercises, and theatre engagements. Our surge forces are designated for the augmentation stage and are ready and capable of deploying in support of contingency and sustained combat operations.

The modeling and projections for our uniformed providers are derived from their Operational Plans (OPLANS) coupled with our Medical Manpower All Corps Requirements Estimator (MedMACRE). The OPLANS outline the capabilities required to prosecute various wartime scenarios based on the Secretary of Defense's Defense Planning Guidance. There are three major tenets to the strategy for quantifying Navy medical manpower requirements: (1) operational medicine, (2) developing medical capability, and (3) honing and sustaining medical capability.

- Operational medicine includes non-BSO 18 (outside of the Navy Bureau of Medicine and Surgery (BUMED)) billets such as the Fleet and Fleet Marine Force billets, individual augmentation requirements generated by Joint or Combatant Commanders to support functions and operations beyond the purview of the Department of the Navy (DON). In addition, it includes surge forces deployed in support of the Defense Department's Steady State Security Posture (SSSP).
- Developing medical capability is based on calculating the requirement to recruit and train personnel to support the operational mission. The size and shape of this structure is driven by requirements and guidance provided by medical certification boards, education accreditation committees, and other organizations external to the Department of Department (DoD).
- Honing and sustaining is to ensure the professional qualification and proficiency of medical personnel. These are required to support day-to-day operational commitments and major contingencies and drive the requirement for staffing the Navy's military treatment facilities (MTFs), as well as provide the rotation base generated to support operational requirements.

In order to ensure that Navy Medicine's readiness reporting systems provide both individual and platform data that are aligned to best support Service-level and DoD requirements, Navy Medicine utilizes the Expeditionary Medicine Platform Augmentation, Readiness, and Training System (EMPARTS); Navy Medicine's official readiness tracking and reporting system for sourcing platforms. EMPARTS is a web-based automated information management system that monitors and reports readiness of personnel designated to support Navy Expeditionary Health Service Support (NEHSS) platforms in support of contingency operations and humanitarian missions. EMPARTS provides Medical Department member status to

individual unit commanders and higher headquarters, tracks medical conditions, legal documents and administrative requirements, monitor unit readiness, tracks individual deployment and other unique information (i.e., administrative, personnel training and overall).

In addition to EMPARTS, Navy Medicine utilizes the Fleet-approved Readiness Cost and Reporting Program (RCRP). RCRP is also a web-based system developed and tailored to BUMED requirements to serve as a bridge to bring authoritative data from disparate DoD and Navy data sources and bridge the gap between EMPARTS, and Defense Medical Human Resource System internet (DMHRSi). RCRP will allow Navy Medicine to report readiness for three major platforms: Forward Deployed Medical Unit (FDPMU), Hospital Ship (T-AH) and Expeditionary Medical Facility (EMF). Data fed by EMPARTS will then be used to report the readiness of Navy Medicine operational capabilities into the Defense Readiness Reporting System - Navy (DRRS-N) that will ultimately report to DRRS - Strategic (DRRS-S).

Investments in education and training are critical for meeting our current requirements and preparing for future challenges. Navy Medicine core training requirements for phased medical platform readiness training exist above the common minimum requirements for all platforms. The core training applies to Navy Medicine personnel assigned to or deploying with a medical operational platform or sourced globally for missions across all operational theaters. Training requirements are coordinated and conducted in three phases: Phase I includes individual medical and trauma skills training that can be met through attending formal courses, completing computer based courses, or participating in clinical cross training. Phase II is training that occurs in the environment, on the equipment, and with the unit construct similar to what the member is expected to encounter when deployed on that platform (i.e., Expeditionary Medical Facility Training at Naval Expeditionary Medical Training Institute or simulated operational surgical team training). Phase III training is mission specific training as defined by the Combatant

Command (CCMD). This training is provided whenever possible, and usually just in time, to those individuals deploying to an identified area of responsibility (AOR) or for a specific mission or as an adaptive force package. Phased medical readiness training requirements also include Reserve Component (RC) medical personnel assigned to operational platforms.

Operating Forward

Navy Medicine is a rapidly-deployable, fully integrated health care system. Our mission requires the agility to support the full range of operations and readiness to respond where and when called upon. Navy Medicine operates underway in all warfare domains in all environments. In addition to providing organic medical support to Navy and Marine Corps operational units, we must also deliver important specialized capabilities to the warfighters including: surface medicine; undersea medicine; nuclear medicine; aerospace medicine; and field medicine. Our personnel – whether an independent duty corpsman, flight surgeon, undersea medical officer serving aboard a submarine, ship or squadron, or a Fleet Marine Force corpsman in the field with a Marine unit – must be trained and equipped to execute their specific mission.

Our readiness posture also requires us to be capable of meeting critical surge requirements in support of contingencies and combat operations. Navy Medicine's expeditionary capabilities include: damage control surgery; forward resuscitative care; advanced stabilization; theatre hospitalization; and en-route care. Each of these capabilities is important as we provide care through all the echelons of care – from the battlefield to the bedside.

This is clearly evident as Navy Medicine continues to sustain unparalleled levels of mission success, competency and professionalism while providing world-class trauma care and expeditionary force health protection to U.S. and coalition forces in the southern Afghanistan in support of Operations RESOLUTE SUPPORT and FREEDOM'S SENTINEL. As troop levels in Afghanistan remain constant, the forward-deployed NATO Role 3 Multinational Medical Unit

continues to provide high-level evaluation, resuscitation, surgical intervention, post-operative care, physical therapy, behavioral health, and patient movement services expected of Navy Medicine by the CCMD.

The Defense Strategic Guidance and Quadrennial Defense Review (2014) identified Humanitarian Assistance / Disaster Relief (HA/DR) as one of the primary missions of the U.S. Armed Forces. Navy Medicine is uniquely positioned to support HA/DR missions. Our Hospital Ships, USNS MERCY (T-AH 19) and USNS COMFORT (T-AH 20), have the capability to provide relief in the wake of catastrophic events like tsunamis or earthquakes, offering a full range of medical skills which include trauma care and post-operative care, primary care, disease management, public health and theater security operations that include transition to non-government organizations and host nations. These missions not only provide national resolve but are a vital component to enhancing provider skills in unique and rapidly changing environments which complements routine training experiences.

An important training component for meeting these demands is participation in Humanitarian Civic Assistance (HCA) missions such as Pacific Partnership and Continuing Promise which foster relationships with partner and host nations in the Pacific Rim/East Asia and South Asia/Caribbean, respectively. Each of our hospital ships deployed in support of these missions in FY2015. In addition, our global health engagement (GHE) strategy requires us to be ready to support diverse missions around the globe. These missions include the full range of skills sets and platforms from deploying personnel and mobile labs to Liberia in response to the Ebola Virus Disease (EVD) outbreak during Operation UNITED ASSISTANCE to establishing a FDPMU to meet the operational public health capabilities.

Military Treatment Facilities (MTFs): The Foundation of Readiness

The ability to deliver the full-range of ready medical capabilities to the operational commander is highly dependent on the training and clinical currency of our personnel. We ask a lot of our men and women and, as such, we owe them the training needed to execute their demanding responsibilities. Our MTFs are critical to providing these skills and competencies and must remain foundational to meeting our current and future operational requirements. From our junior corpsmen to the most experienced physicians and nurses, our clinics, hospitals and medical centers are the foundation for developing and sustaining clinical skills needed for the next deployment. As we look to ways to enhance our medical readiness skills, I believe MTFs throughout the Military Health System (MHS) must remain at the epicenter of our efforts. Beneficiary care in our MTFs is directly linked to clinical skills sustainment.

Recognizing the important role our MTFs have in sustaining skills and ensuring readiness, we have continued to invest in key areas including: increasing patient enrollment through our Medical Home Port; recapturing private sector care workload that can be performed in our facilities; and, realigning services, personnel and graduate medical education programs to maximize the training of our medical personnel and best support the needs of our patient population. Important initiatives like our Marine-Centered Medical Home and Fleet-Centered Medical Home, which also integrate psychological health providers, are helping to ensure that our Marines and Sailors have improved access to care, with the goal of keeping them healthy and deployment-ready.

It is also important to recognize that our graduate medical education (GME) programs, in place at our medical centers and family medicine teaching hospitals, support readiness by providing trained physicians to meet operational requirements. These programs rely on our MTFs having access to robust beneficiary populations to support case number and complexity. I

believe we must remain mindful of initiatives that would impact our MTFs by reducing patient volume and case mix since these would negatively impact the readiness skills of our personnel.

The Services, along with the Joint Staff and DoD, are working to identify, define, categorize and prioritize essential medical capabilities (EMCs). The Under Secretary of Defense (Personnel and Readiness) chartered the Joint EMC Working Group (JEMCWG) to use the Joint Capabilities Integration Development System (JCIDS) for a Capabilities Based Assessment (CBA) to complete a requirements analysis of common readiness elements. EMCs, as defined by the JEMCWG, refer to those health services that are required to deliver comprehensive health care in support of globally integrated operations. EMCs will provide the framework for the Services to prepare and sustain a medical ready force and to develop and maintain a ready medical force. We support establishing common joint and Service-specific EMCs, as they could be an effective means to monitor readiness and guide resourcing decisions. EMCs provide a framework to report comprehensive unit readiness using building blocks such as, team structure integration and surgical trauma skills. Military Medicine supports a wide range of missions, including treating disease and non-battle injuries during military operations and providing humanitarian assistance and disaster relief in response to crises. EMCs will be tracked through existing reporting systems and focus on unit/capability readiness.

In support of our strategic alignment with the operational commands, we established a headquarters-level program office, Naval Expeditionary Health Service Support (NEHSS) Capabilities Development and Integration (CD&I), to coordinate Navy Medicine's role in the continued development and delivery of expeditionary capabilities in support of the warfighter.

Our Way Forward

The last 14 years of war saw unprecedented advances in the military medicine – from the point of injury on the battlefield to comprehensive rehabilitative care. This progress was the result of a highly trained and well-equipped ready medical force dedicated to employing the most effective life-saving skills and techniques available. The rapid implementation of clinical practice guidelines, supported by timely data, research and training, provided our personnel tools to improve trauma care and patient outcomes. All of us in military medicine are committed to ensuring that lessons learned are effectively implemented throughout the Military Health System.

In working to sustain our medical readiness posture, we must continue to ensure (1) the training of our personnel to meet their operational missions remains at the forefront; (2) the reporting systems that provide both individual and platform data are aligned to best support Service-level and DoD requirements; and (3) there is an ongoing assessment of equipment and material requirements for future agile, adaptable and responsive capabilities. We are committed to continuous improvement, and these efforts require rigorous ongoing assessment of our capabilities, identification of any gaps, and implementation of sound solutions. All of us recognize the hard work ahead to ensure sustained medical readiness moving forward.

As I mentioned before, Navy Medicine exists to ensure that our Sailors and Marines are healthy and ready to execute their demanding responsibilities and to provide ready medical personnel to our operational commanders wherever and whenever needed. We will build on the strength and talents of our dedicated Navy Medicine team to ensure are mission-ready and providing world-class care, anytime, anywhere.

Rear Admiral Terry J. Moulton
Deputy Surgeon General
Deputy Chief, Bureau of Medicine and Surgery

A native of Nashville, Tennessee, Rear Adm. Terry Moulton graduated from Western Kentucky University in 1982 with a Bachelor of Science in Health Care Administration. He holds a master's in business administration from Chaminade University. He is also a graduate of the Naval War College non-resident program. He received his commission as an ensign in 1983.

At sea Moulton served on USS Nimitz (CVN 68), completing a six-month deployment to the Persian Gulf in support of Operation Desert Storm. Ashore, his assignments include Naval Hospital, Philadelphia; Naval Medical Clinic, Pearl Harbor; clinic director, Naval Air Station, Barbers Point; director for administration, U.S. Naval Hospital, Guantanamo Bay, Cuba, and Naval Hospital Cherry Point. He also served as the executive officer, Naval Hospital Pensacola.

Moulton has served as commanding officer, Fleet Hospital Pensacola; U.S. Naval Hospital Okinawa; and Naval Medical Center, Portsmouth. He also served as commander, Navy Medicine East and director, Enhanced Tidewater Multi-Service Market Office.

His staff assignments include Navy postgraduate administrative fellow at the American Hospital Association; analyst for coordinated care division, executive assistant to the assistant chief for plans, analysis and evaluation, U.S. Navy Bureau of Medicine and Surgery; executive assistant to the deputy chief, U.S. Navy Bureau of Medicine and Surgery; director, health affairs for the assistant secretary of the Navy, Manpower and Reserve Affairs; chief of health care operations and executive director for TRICARE Northwest Lead Agent and Puget Sound Multi-Service Market Office; head, medical officer distribution branch, Naval Personnel Command; deputy director, medical resources, plans and policy, Office of the Chief of Naval Operations; executive assistant to Navy surgeon general, U.S. Navy Bureau of Medicine and Surgery; deputy chief, medical operations, U.S. Navy Bureau of Medicine and Surgery; and 17th director of the Medical Service Corps.

Moulton is a fellow of the American College of Healthcare Executives.

Moulton began serving as the Navy deputy surgeon general and deputy chief, U.S. Navy Bureau of Medicine and Surgery December 17, 2015.

Moulton's personal awards and decorations include the Legion of Merit (three awards), Defense Meritorious Service Medal, Meritorious Service Medal (six awards), Navy and Marine Corps Commendation Medal (four awards), Navy and Marine Corps Achievement Medal and various other service and units awards.

Updated: 19 January 2016

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE SUBCOMMITTEE ON MILITARY PERSONNEL

COMMITTEE ON ARMED SERVICES

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: ENSURING MEDICAL READINESS IN THE FUTURE

STATEMENT OF: COLONEL LINDA LAWRENCE
SPECIAL ASSISTANT TO THE SURGEON GENERAL FOR
TRUSTED CARE TRANSFORMATION
UNITED STATES AIR FORCE

FEBRUARY 26, 2016

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

Chairman Heck, Ranking Member Davis, and distinguished members of the Committee, thank you for the opportunity to come before you today to discuss the future of medical readiness in the Air Force Medical Service (AFMS).

I am a residency-trained emergency medicine physician with 23 years of active duty service in a variety of positions such as academia, clinical leadership, five years as the Air Force Surgeon General Emergency Medicine Consultant, and in multiple command assignments including command positions in a deployed environment.

Key to emergency medicine is the ability to identify life threatening conditions and resuscitate, stabilize and manage the patient until they're transferred to definitive care. In order to develop these necessary skills, all AFMS emergency physicians are residency-trained and expected to complete and maintain board certification by either American Board of Emergency Medicine or the American Board of Osteopathic Emergency Medicine.

The currency requirements for daily practice and readiness significantly overlap in the areas of diagnostic skills for a multitude of life threatening conditions, and resuscitation procedural skills. All practicing emergency physicians are required to complete Readiness Skills Verification requirements, which are met through day-to-day practice in a Military Treatment Facility (MTF) and augmented by special readiness training in simulation and cadaver labs and in programs such as the Center for Sustainment of Trauma and Readiness Skills and Sustained Medical and Readiness Trained. Additional readiness requirements are assigned based on UTC assignment and deployment location.

One of the vital skills of an emergency physician is their ability to simultaneously manage multiple patients in various stages of care and effectively lead the medical teams supporting them. Emergency physicians typically average two new patients an hour, or more in a lower acuity setting. The acuity an emergency department supports is

dependent on the specialty services in a hospital, such as medical and surgical subspecialists, diagnostics, and critical care capability.

A robust and diverse patient mix provides the critical expertise in the desired clinical skills of our providers, nurses, and medical technicians to maintain their medical and readiness currency across the entire continuum of military beneficiary and expeditionary care. This is essential to the medical ecosystem in order to maintain the operational skills of the teams, and more importantly, deliver safe, trusted care every day, everywhere.

I am grateful for the opportunity to speak with you today and look forward to your questions.

Colonel Linda Lawrence, MD, USAF

Col Linda Lawrence, MD, USAF - is the current Director, Trusted Care Transformation. Prior to this assignment, Dr. Lawrence was the 59 EMDS squadron commander at Wilford Hall Medical Center, Lackland AFB, TX, overseeing the only Level 1 emergency department in the USAF. Prior to this, she served four years as the chief of medical staff and attending emergency physician, David Grant USAF Medical Center, Travis AFB, CA. In addition, Dr. Lawrence serves as the chief emergency medicine consultant to the Air Force Surgeon General. She is also an associate professor in the Department of Military and Emergency Medicine at the Uniformed Services University of the Health Sciences (USUHS). In a prior assignment she served as commandant, School of Medicine, USUHS. She is the former president of the American College of Emergency Physicians (ACEP) and served seven years as a member of the ACEP Board of Directors, including as chair of the board in 2008-2009. Dr. Lawrence is the current secretary/treasurer of the National Trauma Institute. Dr. Lawrence received her medical degree at Temple University in Philadelphia in 1988 and completed an emergency medicine residency at Geisinger Medical Center. She entered the Air Force in 1984 on an HPSP scholarship and began active duty in 1992 upon completion of her residency.

RECORD VERSION

STATEMENT BY

LTC(P) ROBERT L. MABRY, MD

BEFORE THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON MILITARY PERSONNEL

SECOND SESSION, 114TH CONGRESS

ON ENSURING MEDICAL READINESS IN THE FUTURE

26 FEBRUARY 2016

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HOUSE ARMED SERVICES COMMITTEE

We succeed only as we identify in life, or in war, or in anything else, a single overriding objective, and make all other considerations bend to that one objective.
—Dwight D. Eisenhower

Chairman Heck, Ranking Member Davis, and distinguished members of the subcommittee, thank you for the opportunity to discuss battlefield medical readiness today. Over the course of nearly 15 years of war, the military health system has made tremendous strides in improving wartime trauma care, achieving unprecedented survival rates for casualties arriving alive to a combat hospital. Military physicians, medics, corpsmen, and other providers of battlefield medical care are rightly proud of this achievement. Commanders and their troops can be confident that once a wounded Service member reaches the combat hospital, his or her care will be the best in the world.

Combat casualty care, however, does not begin at the hospital. It begins in the field at the point of injury and continues through evacuation to the combat hospital or forward surgery. This prehospital phase of care is the first link in the chain of survival for those injured in combat and represents the next frontier for making any significant improvements in battlefield trauma care outcomes. Unfortunately, history tells us hard won combat medical lessons are often forgotten between wars, only to be re-learned at great cost during the next conflict. Our challenge this time is to break the historical cycle, truly reflect on our medical readiness lessons learned, and incorporate that knowledge into the military health system.

Even with superb in-hospital care, the evidence suggests that up to 25 percent of deaths on the battlefield are potentially salvageable. The vast majority of these casualties bleed to death before they ever reach a surgeon. The indisputable conclusion based on an unprecedented volume of combat casualty care research over the course of wars in Iraq and Afghanistan, is that any significant future improvement in combat casualty survival depends on advancing the capabilities of our medics, corpsmen, physician assistants, nurses and doctors on the battlefield and pushing advanced resuscitation forward. Improving prehospital combat casualty care, however, especially in a resource constrained interwar period, may be significantly more

challenging than improving hospital-based casualty care. I describe five key challenges to improving battlefield casualty care readiness and on-going work to overcome them.

Challenge 1: Ownership – Who is responsible for battlefield medical readiness?

We must better define ownership of battlefield medical readiness. Unity of command is not established, and thus no single senior military leader, directorate, division, or command is solely focused on battlefield care, the quintessential mission of military medicine. This diffusion of responsibility is a result of multiple agencies, leaders, and units of the Service medical departments each claiming bits and pieces, with no single entity responsible for patient outcomes forward of the combat hospital. Combat arms commanders "own" much of the battlefield casualty care assets in that medics, battalion physicians, physician assistants, flight medics, and associated equipment are assigned to their operational units, yet combat arms commanders are neither experts in, nor do they have the resources to train their medical providers for, forward medical care. Commanders rely on the Service medical departments to provide the right medical force for their units. In turn, while the institutional base is responsible for determining the skills, equipment, initial and sustainment training requirements of the combat medical force, responsibility for battlefield care delivery is controlled by the line commanders. While this division of responsibility may at first glance seem reasonable, the net negative effect of line commanders lacking expertise and medical leaders lacking operational control has been documented. The axiom "when everyone is responsible, no one is responsible" applies.

The concept of Tactical Combat Casualty Care (TCCC) evolved to fill this gap for line commanders. Originating from a paper published in the Journal of Military Medicine in 1996, TCCC created a conceptual framework focused on treating life-threatening battlefield injuries while taking into account tactical considerations. A Navy physician and former SEAL team member, Dr. Frank Butler spearheaded what has now emerged as the most significant battlefield medical advancement of the past decade. Before the advent of TCCC, combat medics were taught civilian-style first aid. Many of these techniques, based on civilian injury patterns such as motor vehicle accidents, were unhelpful or frankly dangerous when performed under fire.

The Committee on TCCC (CoTCCC) is organized under the Joint Trauma System and is responsible for promulgating the tenets of TCCC. Its origins were nontraditional, reflecting a grassroots effort by a dedicated group of surgeons, emergency physicians, and experienced combat medics to incorporate new evidence and best practices into prehospital treatment guidelines. As a paradigm, it is thoroughly grounded in the realities of the modern battlefield.

The very existence of the CoTCCC, an organization born outside the traditional military medical establishment, exposes a void in ownership and expertise in battlefield care among the services.

Challenge 2: Data and Metrics- We can't improve what we don't measure

The Service medical departments repeatedly cite the reduction of case fatality rates to historically low levels as a major medical accomplishment during operations in Iraq and Afghanistan. While seemingly positive, this statistic tells only part of the story. The case fatality rate, or the percentage of those injured who died, reflects multiple factors including weapons and tactics, protective equipment, and medical care. In other words, current data equally support the conclusion that the enemy's lack of regular combat units, artillery, and armor (the major casualty producers in conventional warfare) and reliance instead on improvised explosive devices is plausibly just as responsible.

While many intended improvements have been made in military trauma systems, especially at the combat hospital and higher, there are few data to link specific actions to a direct and quantifiable relationship to lowered case fatality rates.

The potentially preventable death rate illuminates where care can be improved along the entire chain of survival, from the point of injury to rehabilitation back in the United States. This rate is defined as deaths that could be avoided if optimal care could otherwise be delivered. The challenge of deriving this statistic comes from the complexity in determining if a death is potentially preventable. To accomplish this, specific clinical facts must be collected on each case; however, as we discuss shortly, prehospital data are often difficult to collect.

The potentially preventable death rate is derived by examination of autopsy and medical records by a multidisciplinary physician panel. One such review examined all

the U.S. combat deaths in Iraq and Afghanistan from 2001 until 2011 and found up to 25 percent to be potentially survivable. The vast majority of these (87 percent) died before reaching a surgeon or combat hospital. Many of the remaining 13 percent who died in the hospital were in profound shock on arrival and would have likely benefited from aggressive prehospital resuscitation. It is important to recognize that this figure, does not necessarily reflect inadequate care. All of these casualties were severely injured. Some would have required immediate, on-the-spot access to the most advanced care (that is, the kind found only in premier trauma centers in the United States) to have any hope of survival, and others died related to unavoidable delays due to ongoing combat operations (for example, hostile fire). However, many could have benefited from currently available medical interventions if only these interventions were routinely and correctly employed. Unfortunately, we continue to know little about what care is provided before casualties reach the combat hospital. The key goal is a coherent system to collect prehospital patient care information. We know little about this phase of care. Only one military unit we are aware of, the U.S. Army's 75th Ranger Regiment, has collected complete sets of casualty care data. The commander of the 75th Ranger Regiment has taken ownership of that unit's casualty response system. Using their Ranger Casualty Card and their unit casualty registry, unit leaders are able to determine what happened to every Ranger casualty during all phases of care. Ranger commanders routinely use this data to improve their casualty response systems. The Rangers are also the only unit in the U.S. military that can demonstrate no potentially preventable deaths in the prehospital setting after more than a decade of combat.

Systematically examining potentially survivable deaths and prehospital care data gives a more accurate assessment of the entire continuum of care compared to other metrics. If collected and analyzed quickly, it also allows for the development of an agenda to improve casualty care in near real time. The Israel Defense Forces (IDF) medical corps has embraced the concept of eliminating preventable deaths as part of the next 10- year force build-up plan emphasizing point-of-injury care. A significant recent positive example of data-driven combat casualty care improvement concerns the capabilities of medics staffing medical evacuation (medevac) helicopters, which have

traditionally been staffed by medics trained at the basic emergency medical technician level. Staffing civilian medical helicopters with advanced paramedics has been done since the 1980s and advocated for military medevac since the 1990s. A recent study comparing a National Guard medevac unit staffed with flight paramedics trained in critical care showed a 66 percent reduction in mortality compared to the standard flight medics. The Army adopted a program—after nearly 40 battlefield after-action reports recommended it but without detailed supporting data—in 2011 to train critical care paramedics for helicopter medevac. To date, 350 critical care paramedics have graduated from this program. With better data collection in the prehospital setting, it is likely the decision cycle could be far reduced from the 11 years observed.

Changing the narrative of "unprecedented" survival rates to instead highlight the 25 percent potentially survivable death rate does place military medicine in a difficult strategic communications predicament. Again, this number does not necessarily imply poor care, it simply highlights were we have the largest opportunity to save the most lives in future conflicts. A fair and open accounting of the successes to date as well as where progress needs to be made is imperative. In 1984, Dr. Ron Bellamy examined many of the same issues discussed here following analysis of Vietnam-era casualty data. He noted, "A research program designed to improve health care delivery will have the greatest impact if its goals are chosen after a comprehensive review has been made in the ways of which the existing system fails." A similar comprehensive review of combat casualty care in Iraq and Afghanistan is recommended.

Challenge 3: Prehospital and Trauma Expertise- Who are our prehospital experts?

If the prehospital setting is where nearly all potentially survivable deaths occur, then it is likely not coincidentally an area of limited organizational expertise. It would be natural to expect that the Services, especially the ground forces, would invest heavily in clinical experts in far-forward combat casualty care. Paradoxically, the opposite appears true. The Army, for example, relies on the Professional Officers Filler System (PROFIS) to provide the bulk of forward medical officers. PROFIS is a Cold War–era program whereby primary care physicians from the base hospital are tasked, often just before combat deployment, to serve as battalion surgeons responsible for the

resuscitation of battle casualties in the battalion aid station. This is reminiscent of how emergency rooms (ERs) were staffed in the 1960s and 1970s, when junior physicians just out of training (or disinterested physicians from unrelated specialties) were rotated into the ER. Like the PROFIS physicians, these physicians had no in-depth training in resuscitation or emergency care. Many of these PROFIS physicians, often inexperienced and unprepared, are placed into operational positions outside the scope of their training. This professionally unrewarding experience likely contributes to many leaving the military at the first available opportunity.

The Korean and Vietnam wars set the stage for the emergence of modern emergency medical services (EMS) systems in the late 1960s. These wartime experiences spurred the development of a robust "system of systems" comprised of emergency medical technicians, ambulances, communications, training programs, medical direction, and trauma centers that integrate prehospital and hospital trauma care. The investment paid off as trauma centers opened in nearly every major urban center, and large swaths of the population are now served by effective and cohesive trauma care systems.

Since the 1980s, programs have emerged to train physician specialists in trauma surgery, emergency medicine, and prehospital care. Without a major conflict since the emergence of these new specialties, there simply has not been a demonstrated need for them in the military until now. Nor has there been a critical appraisal of how these relatively new specialties could be leveraged to optimize combat casualty care. For example, the Department of Defense has only one relatively new prehospital training program capable of training three physicians per year. Today, the Army has four board certified prehospital physician specialists and about twenty trauma surgeons on Active duty out of about 4500 physicians. This is largely because medical specialty allocations are based on traditional peacetime beneficiary care needs. Refocusing on the wartime needs could populate key institutional and operational billets with a critical mass of trained prehospital and trauma specialists and drive further advances in battlefield care during peacetime.

Challenge 4: Research and Development – Stuff versus people?

Current research and development efforts are focused on material "things," and our current medical combat development efforts are primarily focused on rearranging existing paradigms for doctrine, manpower, and equipment. Less attention is paid to training, leadership, and organization, yet the current literature shows these areas have made the most significant documented improvements in survival. Three examples can illustrate the potential for capitalization. First, the Rangers, with their command led casualty response system, are able to document no potentially preventable prehospital deaths after more than a decade of combat. Second, staffing a forward battalion aid station with emergency medicine–trained providers showed a 30 percent reduction in deaths. Third, adopting current civilian air ambulance standards during helicopter evacuation in Afghanistan showed a 66 percent reduction in the risk of dying. The training level and capabilities of the providers in these examples exceeded the existing doctrinal model, and the benefits were tangible. The solution lay with people, not technology. Using a sports analogy, the Department of Defense is spending billions of dollars trying to perfect golf clubs, golf balls, and golf shoes, and virtually no research dollars on how to train the best golfers.

Prehospital clinical experts should direct and advise key research and development efforts and set research priorities focused on improving prehospital casualty survival. Traditional measures of research program success (grants awarded, papers published, and abstracts presented) should be shifted in favor of measurable solutions to specific battlefield problems (such as reducing preventable death, improving procedural success, and reducing secondary injury).

To be sure, advanced technology can pave the way for enhanced combat casualty care. Examples of recent tools placed in the hands of medics and battalion medical officers include modern versions of tourniquets, junctional hemorrhage control devices, and intraosseous needles. Hemostatic bandages, first described following World War I, have been significantly refined and are a critical life-saving tool on the battlefield. The proposition is to balance the investment between things and people to optimize care on the battlefield.

Future research and development efforts should focus on mitigating the most significant preventable causes of mortality and morbidity on the battlefield. Because

non-compressible truncal hemorrhage is the leading cause of preventable death on the battlefield, developing training and tools to mitigate it should be the primary focus of research efforts. Outside of the operating room and the ability to surgically control truncal hemorrhage, several advanced prehospital interventions are possible using existing technologies. Recently, researchers have developed promising techniques to place endovascular or intercavitary devices to plug or compress shattered blood vessels and slow bleeding from severely damaged solid organs such as the liver, kidney or spleen. Examples include ResQFoam and "resuscitative endovascular occlusion of the aorta" (REBOA). REBOA requires a prehospital provider to access the large femoral artery in the groin – a technically demanding task in a hospital Emergency Room, but potentially feasible on a battlefield. It has been successfully used in the prehospital setting by physicians in London's air ambulance service. ResQFoam is simpler. All it requires is a small incision into the abdomen. These and other invasive techniques have tremendous potential but their use must be governed with clinical leadership, carefully-crafted protocols and rigorous training by prehospital clinical specialist. All are designed to prolong the "Golden Hour" by slowing or stopping internal bleeding, so a casualty can reach the operating room before it is too late. These interventions are not now approved for battlefield use but these and similar technologies have potential to save lives on future battlefields.

Regulatory innovation needs to play a role. For example, freeze dried human plasma (FDP), which is widely used in Europe and by our NATO allies, is not approved for use in the United States. As a result, it is only available to Special Operations Forces (SOF) under an FDA investigational new drug (IND) protocol requiring thousands of man hours just for administrative compliance. Likewise, donor-to-donor transfusions of fresh whole blood, once a mainstay of battlefield care, are only performed by SOF medical personnel. Conventional US Army flight medics did not develop blood protocols until 2012, 11 years into the war. Pharmacologic agents like tranexamic acid (TXA) have been shown to improve survival by speeding blood clotting in trauma patients. Its FDA indications are for reducing abnormal menstrual bleeding and to reduce bleeding in hemophiliacs undergoing dental surgery. TXA is recommended by the Committee on Tactical Combat Casualty Care, but its use on the

battlefield by combat medics has been unevenly implemented. These techniques are well within the ability of combat medics to perform. They simply require the ability to establish intravenous (IV) or intraosseous (IO) access. FDP is not FDA approved in the US and most of the CoTCCC recommended battlefield use medications like TXA are considered "off-label" for their combat indications. As such, Title 10 prevents the Services from requiring their use as a common standard of care without prior written informed consent. Regulations such as these, designed to protect service members from experimentation, also paradoxically hinder the ability field innovative new therapies that have been proven to be safe for other FDA indications or in other countries.

While prehospital hemorrhage control and resuscitation will save lives, research designed to reduce suffering and improve recovery is needed as well. Pain control, infection prevention, and the use of pharmacologic agents that prevent development of post-traumatic stress may play as important a role in optimization long term outcomes as battlefield use of tourniquets did in lowering death rates in Iraq and Afghanistan.

Challenge 5: Hospital Culture - Are we aligned with the warfighter?

Combat arms commanders focus on preparing for war. When not deployed or in a recovery or support cycle, they are focused on training and preparing for the next mission. Conversely, the MHS is expected to perform its mission of delivering high-quality healthcare to military beneficiaries in its fixed facilities every day and be prepared to go to war at a moment's notice. Historically, the overwhelming pressures of providing beneficiary care in clinics and hospitals have conspired to redirect resources away from maintaining or improving battlefield care skills during peacetime. Future efforts should be devoted to breaking free from this seemingly intractable constraint.

Regarding the combat medics' role, the traditional conceptual framework for some medical leaders starts not at the point of injury but rather in the combat hospital (or forward surgical team): "Get the casualty to the hospital and we will take care of them." This is a legacy of the Cold War era when the combination of massive casualties and limited far-forward capability meant few meaningful interventions were possible until the casualty reached a combat hospital. Today, we know the actions or inactions of the ground medic, flight medic, or junior battalion medical officer can mean

the difference between delivering a salvageable casualty or a corpse to the combat hospital. We expect medics to perform life-saving treatment under the most difficult of circumstances, but we invest minimal institutional effort toward training them to a high level or insisting they train alongside physicians and nurses in our fixed military hospitals during peacetime. In one US Army military treatment facility, their policy prohibits any combat medic from administering medications, including the ones they are expected to use in the dark and under fire on the battlefield, even under direct physician supervision in the controlled environment of the hospital. Policies such as these may explain why the majority of combat wounded receive no pain medication at the point of injury as medics are often prohibited from or unfamiliar with administering current battlefield analgesic recommendations. Untreated pain increases suffering and worsens the likelihood of morbidity such as post-traumatic stress disorder. Military hospitals cannot truly be considered to be combat medical readiness platforms unless they make a significant cultural and paradigm shift to train combat medics, corpsmen, flight paramedics and battalion medical officers to the top of their capability.

The Tourniquet

An excellent illustration of our challenges with battlefield medical readiness is the simple tourniquet. One of the most effective things a Soldier can do to save another Soldier's life on the battlefield is to stop bleeding from a limb.

The first documented case of a tourniquet used on the battlefield to stop extremity hemorrhage was in 1674. A simple stick, or windlass, is used as a mechanical advantage to twist and tighten a bandage until bleeding vessels are compressed. In the mid-1800's the Prussian military issued a "strap and buckle" tourniquet to their troops. This "strap and buckle" tourniquet was later adopted by the both Union and Confederate forces during the Civil War and subsequently issued to US forces during World War I, World War II, Korea and Vietnam. In 1993, I deployed to Mogadishu, Somalia as Special Forces medic in one the most well-trained and well-equipped unit in the world, with a strap and buckle tourniquet. We went to war in Iraq and Afghanistan with essentially the same tourniquet that was issued during the Civil War. The only problem with the strap and buckle tourniquet was that it did not work. In

1945, Dr. Luther Wolfe, an incredibly experienced US Army surgeon who cared for thousands of patients fighting in North Africa, during the Sicily invasion and across Europe, wrote an article in the Army Medical Department Journal describing how the strap and buckle tourniquet was ineffective and should be removed from the inventory in 1945.

Yet death rates from extremity hemorrhage during the Korean and Vietnam Era ranged from 7-9%. That means nearly 7000 service members lost their lives because they did not have an effective tourniquet. In the 1980's, Dr. Ron Bellamy conducted an extensive study of combat casualties following the Vietnam War and recommended an effective tourniquet be fielded to US Forces. In the initial phases of OEF and OIF, our death rates from extremity hemorrhage were the same as Vietnam and Korea. In 2004 or so, a Special Forces medic invented the Combat Applications Tourniquet. This new windlass tourniquet worked well and was adopted widely by US Forces in 2005 driving down deaths from extremity hemorrhage to virtually nothing. Meanwhile, the strap and buckle tourniquet, first issued during the Civil War, noted not work during World War II, was finally removed from the DoD inventory in 2008.

How did this happen? How did the most advanced, well-equipped military in the world miss this? More so, how do we prevent something like this from happening again? How to we truly learn the lessons from nearly 15 years of war?
Ownership, expertise, data, research and culture.

Current Efforts to Address the Challenges

The commander of the Army Medical Department Center and School (AMEDD C&S) is currently responsible for the development of battlefield medical doctrine, training and equipment sets. In response to the changing operational and future strategic environment, he has initiated a number of studies and working groups designed to address many of the described challenges. The Early Entry Medical Capabilities (EEMC) Concept of Operations (CONOP) is the product of that analysis. It provides recommendations for necessary capabilities and capacities across the doctrine, organization, training, materiel, leadership and education, personnel, facilities,

and policy (DOTMLPF-P) domains and provides the intellectual foundation for further efforts in these areas.

The CONOP identifies six major capability areas. These are broad areas that the AMEDD must focus efforts in order to provide effective medical support to entry operations:

Battlefield Trauma Management. This focuses on the need to provide hemorrhage control, in the form of damage control resuscitation (DCR), as close to point of injury as possible, the need for improved injury identification and treatment at point of injury and the development of prolonged care capability. DOTMLPF-P recommendations include improved training of DCR concepts and standards for point of injury care.

Trauma System. This highlights the importance and benefit of a pre-existing trauma system due to the short notice nature of entry operations. DOTMLPF-P recommendations include the development of trauma systems in each Combatant Command, training for medical and non-medical personnel on trauma systems and increased leadership awareness of trauma systems and their importance in improving patient outcomes.

Medical Evacuation and En-Route Critical Care. This area underscores the need for agility in medical evacuation and en-route critical care. Lack of air superiority and limited medical evacuation assets in entry operations necessitate flexible approaches to evacuation and en-route critical care. DOTMLPF-P recommendations include training for the provision of en-route critical care on any platform, and educating commanders on medical care vs capability risks.

Medical Training and Preparedness. Medical skills development and ongoing training needs to focus on battlefield medicine and wartime trauma requirements. The reliance on pre-deployment and just-in-time training to ensure mission specific skills are up-to-date is not feasible or suitable for the conduct of entry operations due to deployment time constraints. Variance in provider training and competence leads to inconsistency in the provision of care and patient outcomes. DOTMLPF-P recommendations include an increased emphasis on pre-hospital medical training to include DCR and Tactical Combat Casualty Care guidelines, programs to reduce reliance on just-in-time training

and development of leadership relationships that promote and improve training and readiness of medical personnel.

Medical Information Management. The use of simple, intuitive, and nonintrusive systems to capture, transmit, disseminate and analyze medical data from the point of injury through to definitive care is essential to improving patient outcomes. DOTMLPF-P recommendations include leader emphasis on the importance of accurate medical data collection from existing and future systems and establishment of policy for minimum standards of medical data capture.

Mobility, Protection and Sustainment. Lightweight, expeditionary and protected platforms and forces will be required in the future to ensure medical assets can maintain pace with the supported elements. DOTMLPF-P recommendations include improved ability to task organize and novel materiel approaches that can reduce the sustainment burden.

The AMEDDC&S and the Health Readiness Center of Excellence Capabilities Development Integration Division is conducting ongoing analysis and study in the areas identified above to improve medical capabilities in support of entry operations in the future.

Conclusion

If history is any guide, making significant interwar advancements in battlefield medical readiness will be difficult. As major combat operations end, repeating the narrative of low case fatality and high survival rates without a comprehensive and sober review of both successes and where improvements could be made risks impeding the ability to truly learn the lessons that would improve the survival of Soldiers, Marines, Sailors, and Airmen in the next conflict.

Evolving the current paradigm of military medicine from an organizational culture chiefly focused on full-time beneficiary care in fixed facilities and part-time combat casualty care—the "HMO that goes war"—toward an organizational culture that treats battlefield medical readiness as its essential core mission will be difficult. However, this need not lessen the importance or scope of beneficiary care and, if agilely executed, could enhance the prestige and cachet of the beneficiary mission.

Addressing leadership, strategy, metrics, workforce, and patient outcomes is the common methodology for promoting excellence in hospital-based healthcare. The same methodology could be used to improve care forward of the hospital. Such a program would require a significant realignment of resources and priorities within military medicine that would challenge existing bureaucratic and leadership hierarchies. Acting on what we have learned to prepare for the next conflict in a resource-constrained interwar period will challenge our medical leaders. Civilians can operate peacetime hospital systems, perhaps even more efficiently than the military. Yet ultimately, going to war is the unique mission of military medicine that distinguishes us from civilian healthcare and justifies our cost to the Nation. It is the reason we exist.

Robert Mabry, MD

Lieutenant Colonel (Promotable) Robert Mabry is an emergency physician and emergency medical services (EMS) specialist. Most recently, Mabry served as the program director of the Military Emergency Medical Services and Disaster Medicine Fellowship, the largest EMS fellowship in the nation, and as the director of Trauma Care Delivery at the Department of Defense Trauma Center of Excellence at Fort Sam Houston, TX.

Before becoming a physician, Mabry served for 11 years as an enlisted U.S. Army Ranger infantryman and Special Forces (Green Beret) medical sergeant. He is also a combat diver, freefall parachutist, National Registry Paramedic, diving medical officer, high-angle rescue instructor, and flight surgeon. He has deployed overseas multiple times and has participated in combat operations as the senior search and rescue medic with Task Force Ranger in Mogadishu, Somalia, during the "Blackhawk Down" battle in 1993, as a Special Forces battalion surgeon during Operation Enduring Freedom in Afghanistan in 2005, and as the Joint Theater Trauma System Prehospital medical director again in Afghanistan in 2010.

Mabry served as president of the Special Operations Medical Association and is a founding member of the Committee on Tactical Combat Casualty Care. His military awards include the Silver Star, the Bronze Star, the Purple Heart, and the Combat Field Medical Badge (two awards).

Mabry earned his BS from Campbell University by attending night and weekend classes while he served as a Green Beret at Fort Bragg, NC. He attended medical school at the Uniformed Services University of the Health Sciences in Bethesda, MD, where he served as class president and was selected as a member of the Alpha Omega Alpha honor society. He is board certified in emergency medicine and emergency medical services and is a graduate of the U.S. Army's Command and Staff College. He is the author of numerous scientific papers and book chapters related to combat casualty care.

RECORD VERSION

STATEMENT BY

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BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
MILITARY PERSONNEL SUBCOMMITTEE

SECOND SESSION, 114TH CONGRESS

ON ENSURING MEDICAL READINESS IN THE FUTURE

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NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE

Chairman Heck, Ranking Member Davis, and distinguished members of the subcommittee, thank you for the opportunity to speak about the sustainment of military trauma capabilities during peacetime. As a nation, it is our moral obligation to provide our wounded service members with the best possible trauma care. If American men and women are to be sent in harm's way, they should know that every effort has been made to maximize their chances of survival and to give them the best opportunity for a productive and happy life, should they be wounded. In order to fulfill this promise, our military needs both a cadre of trauma specialists and the means to keep them clinically proficient during times of peace. Importantly, the retention of specialists experienced in combat-related trauma is crucial to optimize patient outcomes, as that knowledge base cannot be earned by any means other than first-hand exposure. As Hippocrates said, war is the only proper school for surgeons.

There is a predictable drawdown of our armed force's trauma capabilities after the conclusion of an armed conflict. In the absence of a continued flow of casualties, fewer trauma specialists are needed, as very few Military Treatment Facilities (MTFs) address civilian trauma patients. Trauma specialists who leave the military are not necessarily replaced, and if many years pass before our nation's next conflict, the number of specialists remaining to care for our wounded may be less than desired. It can take several years to train additional trauma specialists, potentially causing a deficit in our trauma capabilities during the early years of that conflict. Moreover, those specialists that do remain on active duty during peacetime may encounter challenges maintaining their skill sets.

I am an orthopaedic trauma surgeon at Walter Reed National Military Medical Center. I have operated at every echelon of military surgical care: on an exam table at an Italian Role I in Afghanistan, in a Role II tent with a Forward Surgical Team, at the Role III in Kandahar, at the

Role IV in Landstuhl, and I am currently the Chief of Orthopaedic Trauma Surgery at Walter Reed. I have performed surgeries aboard a hospital ship off the coast of Papua-New Guinea, in antiquated operating rooms in Honduras and South Sudan, and by flashlight in post-earthquake Haiti. While the bulk of my career has been devoted to treating our nation's wounded, providing medical aid to those in need is also a powerful tool of diplomacy and is one of the hallmarks of an ethical society. I feel that my career, including combat deployments with both conventional and special operations forces, has given me insight into what it takes to become, and remain, a skilled orthopaedic traumatologist in America's 21st century military.

My first year at Walter Reed was the busiest year of the war in Iraq and Afghanistan. Two-thirds of all the multi-extremity amputees and two-thirds of all the genital amputees of the war came through our doors in those 12 months. I thought that my trauma fellowship had adequately prepared me to treat these casualties, but I was mistaken. Outside of industrial accidents, there is almost nothing in the civilian sector that can replicate the severity of combat wounds. The wounds sometimes defy description and the rules of treatment are often very different from those of the civilian trauma setting. A standard approach to the care of a motorcycle injury might be a guarantee of infection and amputation for a blast injury, even if the x-rays look the same. As a result, I feel that a military trauma surgeon needs to have two separate sets of skills: conventional trauma surgery and combat-related trauma surgery. Moreover, that surgeon needs a way to sustain those skills.

Conventional trauma surgery involves the treatment of injuries that are similar to those that occur in the peacetime military and the civilian sector. Not every wounded warrior gets injured in an IED blast, and there are many combat wounded who closely resemble their civilian counterpart, particularly those who were injured in armored vehicles or via low-energy

mechanisms. By their nature, these skills can be maintained by providing sufficient exposure to trauma patients or via continuing medical education (CME). Opportunities to continue a surgeon's education include sabbaticals to learn from world experts in limb salvage and trauma techniques, as well as attending conferences to learn current techniques and to exchange ideas with others in the field. Access to trauma patients on a regular basis could be achieved by one of two methods. One option is to allow trauma specialists to work at civilian trauma centers. The other is to allow certain military hospitals to treat civilian trauma patients themselves. The former is much easier to arrange, but the latter has the benefit of training everyone in the hospital in the treatment of trauma patients. The transition from peacetime to wartime will be easier on a hospital system and will improve patient outcomes if everyone is competent in conventional trauma care, not just the trauma specialists.

Combat-related injuries are potentially much more devastating than conventional ones, with much higher rates of infection and loss of function. For example, during the Surge in Helmand Province in the Spring of 2011, Walter Reed received a large number of blast-injured Marines who had fungus growing in their wounds. For a few months, it seemed that the majority of our patients were affected, and with time my colleagues and I became able to diagnose subtle infections based on the wound appearance alone and thus start treatment before the confirmatory tests were completed. Most civilian trauma surgeons will go their whole careers without seeing an invasive fungus-infected wound. We were getting a planeload of them three nights a week.

Military trauma patients are also different from their typical civilian counterparts, in terms of their baseline physiology and their expectations for their future. A wounded Marine is a wounded semiprofessional athlete who wants, and deserves, to be a productive member of society, to be able to play with his children and to be able to live his life proudly, not as an

invalid. When I came to Walter Reed, I had to unlearn all I knew about amputation surgery, as I had never before treated such catastrophic wounds in such active people. One of my patients and personal heroes is a Green Beret who just returned from Afghanistan as the first above-knee amputee deployed in a combat role, and I have created an Amputee Lengthening Program to enable very high amputees to walk for the first time. I mention these successes, not to speak about myself, but to show what is possible with hands-on experience with these injuries, and what would be impossible without it. Unfortunately, the sustainment of a combat-related knowledge base is extremely difficult during peacetime. Instead of sustainment, I believe the focus should be on retention, specifically preventing the "brain drain" of specialists with experience in treating combat wounds who might otherwise transition to the civilian sector over time. At a civilian center, a senior surgeon may have been in practice for up to 25 years or more. In the military, senior surgeons typically have less than ten years experience and are already transitioning into civilian practice. This comparatively short tenure leaves little time to impart the wisdom of experience on future generations of military surgeons. Since traumatologists comprise 5% or less of military orthopaedic surgeons, combat-wounded patients receive some or all of their care from non-trauma specialists on their journey from the point of injury to the operating rooms of trauma surgeons back home. Thus, it is imperative that all deployed surgeons are competent in the fundamentals of treating combat casualties, so that our wounded return home with the best chance of a good clinical outcome. Retention of our senior trauma specialists will help ensure the proper education of surgeons-in-training and non-trauma specialists, paying dividends in our military's future.

With modern advances in body armor and battlefield resuscitative techniques, American servicemen are now able to survive wounding mechanisms that would have been fatal to prior

generations of troops. While the internal organs are now much better protected, limited protection can be afforded to a soldier's arms and legs without compromising his or her mobility. This fact, combined with increased survivorship and the sophisticated bomb-makers on the modern battlefield, create pelvic and extremity injuries that push the limits of modern medicine with respect to treatment and reconstruction. The abilities of even the most seasoned trauma surgeons are tested as they attempt to restore function and quality of life to combat wounded, and these surgeons need to sustain their skills in *both* conventional and combat-related trauma techniques. Before I deployed for the first time, I was still able to conceptualize complex bony anatomy in three dimensions, being able to place implants through narrow safe corridors of bone through small incisions with minimal use of X-rays. When I returned, I found that I had lost that ability. It was like the difference between walking through one's home in the dark and walking through the home of a stranger. Two years of treating almost exclusively blast wounds, including six months spent in a tent in Afghanistan, had profoundly affected my conventional trauma skills. However, the casualty flow was no longer coming from Helmand and was instead coming from RC East, primarily involving soldiers injured while in vehicles. There was much more conventional trauma work to be done, as most of the soldiers were coming back without amputations, illustrating the variable nature of war wounds as OPTEMPO and theaters evolve. It took me six months to feel like my conventional trauma skill set was back where it should be, but I still have to fight to maintain my proficiency. I spend a weekend or two a month moonlighting at local trauma centers, in addition to paying my way to a pelvic trauma course every year and teaching at a number of civilian and military trauma courses throughout the year. Yet there are still some trauma surgeries that I no longer feel comfortable performing without assistance. Being a proficient traumatologist isn't like riding a bicycle. It involves very

perishable skill sets requiring fine motor skills and an understanding of spatial relations within the body, not to mention clinical judgment that slowly erodes with disuse. In my experience, it is easier to sustain these skill sets, rather than trying to relearn them when the time comes. While I cannot speak to the maintenance of proficiency in other specialties, I can tell you that there is no effective way to practice treating musculoskeletal trauma other than by doing it.

In closing, I think it is vital to view clinical expertise as a spectrum, as opposed to a binary system of adequate versus inadequate. Trauma specialists who are unable to sustain their skills may still be able to provide optimal outcomes to 80% of their patients, maybe more. But 80% is a B-minus, and our wounded warriors deserve A-plus surgeons. There's a reason that some of the Boston Marathon bombing victims came to Walter Reed for their care, and the collective expertise that our surgeons, wound care nurses, physical therapists and prosthetists have is in danger of dwindling as time goes on before our next armed conflict. If America goes to war in the next two years, there is no question that the quality of trauma care that our wounded warriors receive will far surpass that provided during the early years of our most recent conflict. That will not be the case if ten years pass before our next war. Not if history repeats itself and the personnel, skill sets and infrastructure of the military trauma system are allowed to fade away.

The sustainment of proficiency of our military's trauma specialists, and the retention of those with first-hand experience of treating combat wounds is paramount to the care of our wounded warriors. Some give all, all give some, and it is incumbent upon us as a nation to give them the best that we can in return. On behalf of my military trauma colleagues, and the wounded warriors that we serve, I thank you for your time and continued support.

Lieutenant Colonel Jean-Claude Gregoire D'Alleyrand
Medical Corps, United States Army
Chief, Orthopaedic Trauma Surgery
Walter Reed National Military Medical Center

LTC D'Alleyrand left his home state of New Jersey to attend the Tulane University School of Engineering in New Orleans, Louisiana in 1993. At Tulane, he received Bachelor's and Master's degrees in Biomedical Engineering in 1997 and 1998, respectively. After graduate school, he attended the Tulane University School of Medicine, graduating in 2003, and went on to complete a residency in Orthopaedic Surgery at Tripler Army Medical Center in Honolulu, Hawaii.

Following his residency graduation in 2008, LTC D'Alleyrand went into general Orthopaedic practice at Dwight D. Eisenhower Army Medical Center at Ft. Gordon, GA. In 2009, he went on to complete a one-year trauma fellowship at the R Adams Cowley Shock Trauma Center in Baltimore, MD, and was then stationed at Walter Reed Army Medical Center in August 2010. That Fall marked the beginning of the busiest period of the war in Afghanistan, with two-thirds of the multi-extremity amputees of the war being injured during LTC D'Alleyrand's first year at Walter Reed. In 2011, he was deployed to Afghanistan, initially to Helmand Province and then to Badghis Province, on the Turkmenistan Border. He returned home in 2012 and a year later was selected to be the Chief of Orthopaedic Trauma Surgery at Walter Reed. As the fighting in Afghanistan steadily diminished, he transitioned from primarily caring for subacute combat casualties to treating the long-term consequences of these injuries. Notably, he created and developed a program for the lengthening of amputees with extremely short residual limbs who would otherwise be unable to use prosthetics. He has since deployed a second time, to East Africa in 2015, and continues his work at Walter Reed. LTC D'Alleyrand has had extensive experience with international orthopaedics and humanitarian assistance, having provided care for patients in several developing countries, including post-earthquake Haiti, Papua-New Guinea, Honduras, rural Afghanistan and South Sudan. He is one of very few surgeons to have performed surgeries at every echelon of military medical care, from Role I to Role V, as well as a hospital ship and makeshift operating rooms in disaster zones.

LTC D'Alleyrand is actively involved in teaching the principles of fracture care, including being an active faculty member of AO North America. He is a member of several surgical societies, including the American Academy of Orthopaedic Surgeons, the Orthopaedic Trauma Association and the Society of Military Orthopaedic Surgeons. His professional interests include acute orthopaedic trauma surgery, as well as complex limb salvage, nonunion and deformity correction, and amputee lengthening.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

FEBRUARY 26, 2016

RESPONSES TO QUESTIONS SUBMITTED BY MR. O'ROURKE

General HOGG. Together the Air Force and VA have met the 295-day goal for IDES Active Component members since October 2014 and since November 2015 for AF Reserve Component members. Active Component Airmen who completed the IDES in January 2016 averaged 248 days from referral for disability evaluation to receipt of a VA benefits decision or return to duty, which was within the 295-day standard. Reserve Component Airmen averaged 300 days, which was within the 305-day standard. [See page 13.]

Admiral MOULTON. The Department of the Navy (DON) fully supports the goals behind the Integrated Disability Evaluation System (IDES) and remains fully engaged with the Department of Defense (DOD), the Department of Veterans Affairs (VA), and the other Military Departments to continue to improve and enhance this Service member-centric program to eliminate the post-separation "benefit gap" for wounded, ill, and injured Service members. For the Active Component (AC), the DON has approximately 4,383 Service members (roughly 56% Marines and 44% Navy) enrolled in IDES. This number represents less than 1% of the combined service end-strengths of the Navy and Marine Corps. For the Reserve Component (RC), the DON currently has approximately 114 active cases for the Navy and 120 for the Marine Corps enrolled in IDES.

As of January 2016, AC Sailors spend on average 255 days and AC Marines spend on average 230 days in IDES, which includes the completed transition to the VA. As of January 2016, RC Sailors spend on average 204 days and RC Marines spend on average 307 days in IDES. We continue to explore ways to reduce the time Service members spend in the AC 295-day goal and RC 305-day goal IDES processes without compromising the integrity or accuracy of the system. [See page 13.]

General TENHET. The Army has met the 295 day IDES processing standards for the past 12 months. The average processing time for total Army (all compos and appealed cases) is 256 days as of 20 Mar 16. [See page 13.]

RESPONSE TO QUESTION SUBMITTED BY MR. ZINKE

Admiral MOULTON. Congressman Zinke, Navy Medicine has a concerted effort to address how we manage concussions, TBI, and blast energy effects on our service men and women. As you are all too aware, cumulative effects of blast exposures can play a critical role in the longevity of our readiness. We have previous and ongoing studies on blast research and noise hazards to prevent, track, and monitor the effect of impact forces. The Naval Medical Research Center has been working with Marine breachers such as Combat Engineers and Explosive Ordnance Disposal since 2008 to assess the impact of blast exposures during dynamic entry training. As a result of the initial observations, they are now assessing neurocognitive effects in the most experienced Marine breachers. The Naval Health Research Center, in collaboration with Walter Reed Army Institute of Research, has conducted a number of observational studies assessing overpressure exposures during training, using sensors mounted on combat helmets and body armor for the last three years. These studies have included communities such as Navy EOD, Army Special Forces, and civilian law enforcement tactical teams. Current efforts are examining blast exposure effects in human brain surrogates. Future studies will longitudinally examine overpressure exposures on medical outcomes within specific military occupations. The Naval Submarine Medical Research Laboratory has two ongoing studies to better understand noise hazards experienced during training evolutions as they relate to impulse exposure. They are researching why firing range exposures are causing quickly and dramatically causing hearing loss despite multiple combat tours without hearing loss. The second study addresses hearing protection device fit testing at accession where the initial training environment begins. Most recently, Navy Medicine established research collaborations with the University of Pittsburgh's world-renowned Sports Concussion program. Although there have been no implemented changes in protocol for negating the cumulative effects of blast exposures, Navy Medicine continues to collaborate with academic and civilian sector partners for research and defining best practices. We are grateful for your strong and unwavering support to our service members and our ability to deliver world-class care to the best warfighters in the world. [See page 17.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

FEBRUARY 26, 2016

QUESTIONS SUBMITTED BY MR. O'ROURKE

Mr. O'ROURKE. In your opinion, what can be done to ensure that service members that are receiving mental healthcare from MTFs, under TRICARE, have the same access and quality of care when they transition to the VA healthcare system? Do you have any specific ideas on what can be done to improve the quality of care during and following this handoff?

General CARAVALHO. I would like to defer this answer to the Services, as care at our MTFs is fully in their Title X responsibilities

Unfortunately, once a Soldier has transitioned into the care of the VA or another healthcare system the Army loses the ability to effect the care that is received.

Mr. O'ROURKE. 1. Enclosure 8 to Department of Defense Manual 1332.18 (Volume 2), Disability Evaluation System (DES) Manual: Integrated Disability Evaluation System (IDES), depicts the standard timeline for IDES. According to the enclosure, the overall IDES process should take 295 calendar days for Active Component service members and 305 calendar days for Reserve Component service members. The enclosure also shows that, during the Physical Evaluation Board Phase, the jurisdiction for the process transitions from the Department of Defense to the Department of Veteran's Affairs (VA) and that this transition should occur between the 115 and 190 day mark, depending on whether or not the service members rebuts the results of the board. Where does each service component stand in terms of the amount of days, on average, that it takes to make the transition to the VA? Please include both cases when the service member rebuts the findings of the Physical Evaluation Board and when the service member does not.

General HOGG. The Air Force Active component takes 248 days for the IDES process, which is within the 295 day standard. The Air Force Reserve component takes 300 days for the IDES process, which is within the 305 day standard. For the two medical related stages of the IDES process, referral and MEB stages, both the Active and Reserve Components have met standards since October 2012. The Air Force Surgeon General's office does not track cases separately.

Mr. O'ROURKE. In your opinion, what can be done to ensure that service members that are receiving mental healthcare from MTFs, under TRICARE, have the same access and quality of care when they transition to the VA healthcare system? Do you have any specific ideas on what can be done to improve the quality of care during and following this handoff?

General HOGG. The "inTransition" program has been instrumental in enhancing the continuity and support of service members throughout their transition from military mental healthcare to the VA. We continue to make improvements to the process specifically with timely access and communication. The hallmarks of clinical quality of care are timeliness of treatment and appropriate follow up intervals which is largely dependent on access to care. Tracking adherence to appropriate access standards for behavioral health care is essential. Additionally, enhancing communication and integration between the military healthcare and VA systems is vital to ensuring both continuity and quality care. Utilizing a shared or, mutually accessible electronic health record and continued open dialogue between DOD and VA facilitates care integration. Continuing education of DOD and VA medical personnel on programs, policies and procedures within the other agency will improve the transition process and allow staff on both sides to address patient concerns and provide accurate and timely information to transitioning service members.

Mr. O'ROURKE. 1. Enclosure 8 to Department of Defense Manual 1332.18 (Volume 2), Disability Evaluation System (DES) Manual: Integrated Disability Evaluation System (IDES), depicts the standard timeline for IDES. According to the enclosure, the overall IDES process should take 295 calendar days for Active Component service members and 305 calendar days for Reserve Component service members. The enclosure also shows that, during the Physical Evaluation Board Phase, the jurisdiction for the process transitions from the Department of Defense to the Department of Veteran's Affairs (VA) and that this transition should occur between the 115 and 190 day mark, depending on whether or not the service members rebuts the results of the board. Where does each service component stand in terms of the amount of days, on average, that it takes to make the transition to the VA? Please include both cases when the service member rebuts the findings of the Physical Evaluation Board and when the service member does not.

General TENHET. The Army has met the 295 day IDES processing standards for the past 12 months. The average processing time for total Army (all compos and appealed cases) is 256 days as of 20 Mar 16. IDES consists of three distinct phases, each of which includes involvement from the Department of Veteran's Affairs (VA).

Phase1 is the Medical Evaluation Board (MEB) which determines whether a Soldier meets medical retention standards. The Army has 100 days to complete this phase, of which 55 days are allotted to the VA for claim development and to complete the disability examinations. The Soldier has an opportunity to request an impartial medical review and/or to appeal the MEB findings before the case is sent to the Physical Evaluation Board (PEB) for adjudication. Phase2 is the PEB which determines if the Soldier's failing conditions make him unfit for continued Service. The first stage of the PEB is the informal PEB (IPEB) which determines if the Service member is fit for duty. If the IPEB determines that a Service member is unfit, the case is transferred to the VA to be rated by the VA Disability Rating Activity Site (DRAS). The Service member's first opportunity to appeal the PEB findings occurs after the ratings are initiated.

Phase3 is the Transition Phase which allows time for the Soldier to be returned to duty, if found fit, or to process out of the Army, if found unfit.

The average IDES processing time for those cases with no MEB or PEB appeal is 250 days. The average processing time is 289 days when Soldiers appeal only the MEB findings, 381 days when only the PEB is appeal, and 422 days when the MEB and PEB are appealed.

Mr. O'ROURKE. In your opinion, what can be done to ensure that service members that are receiving mental healthcare from MTFs, under TRICARE, have the same access and quality of care when they transition to the VA healthcare system? Do you have any specific ideas on what can be done to improve the quality of care during and following this handoff?

General TENHET. It is critical to ensure that Soldiers with behavioral health conditions are engaged in care immediately after leaving active duty. Early engagements with the VA or another healthcare system reduce the chance that a Soldier's behavioral health condition will be adversely impacted during transition.

Soldiers with behavioral health conditions leaving the Army are automatically enrolled in the Department of Defense "In Transition" program, which links the Soldier and his/her Family with a care coordinator. The coordinator assists the Soldier by locating behavioral healthcare resources in the VA or another healthcare system.

Unfortunately, once a Soldier has transitioned into the care of the VA or another healthcare system the Army loses the ability to effect the care that is received.

Mr. O'ROURKE. 1. Enclosure 8 to Department of Defense Manual 1332.18 (Volume 2), Disability Evaluation System (DES) Manual: Integrated Disability Evaluation System (IDES), depicts the standard timeline for IDES. According to the enclosure, the overall IDES process should take 295 calendar days for Active Component service members and 305 calendar days for Reserve Component service members. The enclosure also shows that, during the Physical Evaluation Board Phase, the jurisdiction for the process transitions from the Department of Defense to the Department of Veteran's Affairs (VA) and that this transition should occur between the 115 and 190 day mark, depending on whether or not the service members rebuts the results of the board. Where does each service component stand in terms of the amount of days, on average, that it takes to make the transition to the VA? Please include both cases when the service member rebuts the findings of the Physical Evaluation Board and when the service member does not.

Admiral MOULTON. The Department of the Navy (DON) fully supports the goals behind the Integrated Disability Evaluation Department (IDES) and remains fully engaged with the Department of Defense (DOD), the Department of Veterans Affairs (VA), and the other Military Departments, to continue to improve and enhance this Service member-centric program to eliminate the post-separation "benefit gap" for wounded, ill, and injured Service members. For the Active Component (AC), the DON has approximately 4,383 Service members (roughly 56% Marines and 44% Navy) enrolled in IDES. This number represents less than 1% of the combined service end-strengths of the Navy and Marine Corps. For the Reserve Component (RC), the DON currently has approximately 114 active cases for the Navy and 120 for the Marine Corps enrolled in IDES.

As of January 2016, AC Sailors spend on average 255 days and AC Marines spend on average 230 days in IDES, which includes the completed transition to the VA. As of January 2016, RC Sailors spend on average 204 days and RC Marines spend on average 307 days in IDES. While we do not track cases separately when the Service member rebuts the findings of the Physical Evaluation Board and when the Service member does not; we do know approximately 10% of servicemembers request a formal Physical Evaluation Board which adds 58 days to the process. The

58 days are included in the averages listed within this paragraph. While this is much faster than the AC 295-day goal or RC 305-day goal for RC Navy, it is still longer than we would like. We are working diligently on improving our RC Marines Corps numbers to align closer to the RC Navy results. We also continue to explore ways to reduce the time Service members spend in IDES without compromising the integrity or accuracy of the system.

Mr. O'ROURKE. In your opinion, what can be done to ensure that service members that are receiving mental healthcare from MTFs, under TRICARE, have the same access and quality of care when they transition to the VA healthcare system? Do you have any specific ideas on what can be done to improve the quality of care during and following this handoff?

Admiral MOULTON. Continued efforts to ensure interoperability and communication between DOD and VA healthcare systems, as well as TRICARE, are instrumental to ensuring same access and quality of care for service members when they transition to the VA healthcare system. Specific efforts which will continue to support the quality of care during and following this handoff include:

- Automatic enrollment in the DOD's InTransition program for all service members seen for a mental health concern during the 12 months preceding their separation from military service. InTransition ensures connection with the gaining healthcare provider to introduce the service member and facilitate appointments; follow up with gaining providers to ensure continuum of care; and provide the patient with support and resource location should members encounter a crisis situation.
- DOD and VA electronic health records that are interoperable and facilitate communication between DOD and VA providers.
- Quick access (≤7 days) to the VA health system for military personnel leaving active duty.
- Assignment of a DOD/VA Lead Coordinator (LC) to any patient with mental health concerns, not just those with diagnosed mental health conditions. Currently, the LC serves as the primary point of contact for the service member and their family or caregiver during the transition between DOD and VA. The LC ensures that when a patient with complex care needs a transfer, that a "warm hand-off" to another LC and Care Management Team (CMT) on the receiving end of the transfer is accomplished.
- NDAA 2016, Section 715 requires that DOD and VA establish a joint uniform formulary that at a minimum includes medications related to control of pain, sleep disorders, and psychiatric conditions, including PTSD. While those efforts are underway to establish a Continuity of Care Drug List, the Report to Congress will be submitted no later than July 2016. Further, VA issued a directive in January 2015 that establishes policy to continue mental health medications initiated by DOD authorized providers for recently discharged service members.

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