The Senate Armed Services Committee

To receive testimony on stabilizing the Military Health System to prepare for large-scale combat operations

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Chairman Wicker, Ranking Member Reed, and distinguished members of the Committee, thank you for the opportunity to testify on the urgent need to restore and sustain military medical readiness in the face of large-scale combat operations (LSCO).

As a practicing trauma surgeon with multiple combat deployments, I have seen the full gamut of combat casualty care from far forward in Iraq and Afghanistan to Brooke Army Medical Center where I served as Trauma Medical Director for the Department of Defense's (DOD) Level I trauma center during the height of combat operations. I now serve in a different capacity as Assistant Dean for Veteran Affairs for Penn Medicine and as an attending in the Surgical Intensive Care Unit in our Veterans Affairs (VA) Medical Center in Philadelphia.

At Penn Medicine, I am also proud to lead an embedded US Navy trauma team as the civilian surgeon champion. This partnership enjoys enthusiastic support from deeply invested Penn Medicine leaders including our Chief Executive Officer, Mr. Kevin Mahoney. As a reservist, I worked with RADM (Dr.) David J. Smith in Health Affairs where I first appreciated the importance of good policy to mission success, and now as a Veteran Fellow at the Hoover Institution, I have the opportunity to study the effects of military health policy over time. Finally, like many of you and my colleagues here today, I have multi-generational family ties to the military with my oldest son now training as a Naval Intelligence Officer.

I want to start by sharing a story of an unexpected combat casualty survivor. In 2010, US Army Sergeant Erik Ramirez (pseudonym to protect patient privacy) suffered a devastating chest injury while on patrol in Afghanistan. A sniper's bullet passed just above his body armor, tearing through the airways and vessels in his right lung. What happened next was nothing short of a medical miracle. After damage control surgery to arrest the bleeding, SGT Ramirez was placed on heart and lung bypass on the battlefield. With this heroic intervention, he pulled up out of a spiral of certain death, and a few short days later, I had the privilege of caring for him as he was re-united with his family in San Antonio.

The survival of SGT Ramirez resulted from decades of investment in combat casualty care. Through the efforts of many dedicated military and civilian visionaries, we established a cutting-edge trauma system in the heart of a combat zone. Through these intensive efforts

and close collaboration with line leaders, we achieved the best survival rate on any battlefield in history. In sum, we achieved medical overmatch and leveraged our medical supremacy into a strategic advantage.

But I fear that if SGT Ramirez suffered the same injury in combat today, he would not survive. Why? In short, combat casualty care training and skills maintenance lose out in peacetime. Since the end of combat operations in Iraq and Afghanistan, we have seen a systematic erosion of military medical readiness. Today, only 10% of military general surgeons get the critical case volume and patient acuity they need to be combat-ready.(1)

What is the cost of this erosion? It can be measured in lives lost: one in four battlefield deaths are potentially survivable. This reflects what I term the medical "peacetime effect"—a recurrent failure to sustain combat medical capabilities between wars. Although this cycle has played out for centuries, today's peacetime effect is driving us toward medical obsolescence precisely as our adversaries' power is ascendant. Should a large-scale conflict materialize, we anticipate casualty numbers as high as 1,000 per day for at least 100 days—casualty loads not seen since World War II, a scale far beyond what our current system can handle.(3) True medical readiness could mean the difference between winning and losing.

The challenge of maintaining a ready medical force during peacetime represents a true "wicked problem." Yet, one of the root causes of this erosion in our medical readiness is clear: no single entity in the DOD truly owns combat casualty care. COL (Dr.) Bob Mabry, a decorated hero of the battle of Mogadishu, warned in his testimony to the House Armed Services Committee nearly a decade ago, "When everyone is responsible, no one is responsible." To this day, combat casualty care responsibility remains fragmented across military departments, the Defense Health Agency, and individual service commands. With ongoing diffusion of responsibility, we will fail, and our warriors will die needlessly.

Top Priority: Establish Clear Ownership of Combat Casualty Care

Combat casualty care represents a critical warfighting capability—the equivalent of a high-value weapon system, not just a cluster of medical tents deployed in a contingency environment. To ensure the optimal use of this valuable asset, the Armed Services Committee should establish clear ownership of combat casualty care within the DOD. To accomplish this objective, I strongly recommend both elevating and streamlining the reporting structure for the MHS. Command and control of the MHS should be commensurate with the importance of the mission. The Joint Trauma System (JTS) must have direct responsibility for and authority over all aspects of combat casualty care policy, training, and readiness. The JTS Director should report directly to the Secretary of Defense through the Joint Staff Surgeon. This organizational construct will ensure combat casualty care is fully aligned with our contingency operational strategy.

With a clear line of responsibility and authority for combat casualty care, we can then restore and sustain military medical readiness for LSCO by focusing on three key areas:

1) Clinical Training and Sustainment: Joint Military Trauma/Burn Centers of Excellence, National Disaster Medical System, and Civilian Trauma/Burn Partnerships

Combat trauma readiness requires military medical personnel to have routine exposure to high-acuity trauma cases, something that most military treatment facilities (MTFs) currently lack. To correct this, we must consolidate military trauma training into a select group of five to six joint MTFs verified and designated as trauma and burn centers of excellence by civilian accrediting bodies. These trauma/burn MTFs must fully participate in the civilian trauma system organized around a series of Regional Medical Operations Coordinating Centers (RMOCCs).

These trauma/burn MTFs must also align with the National Trauma and Emergency Preparedness System (NTEPS), a concept developed by the American College of Surgeons Committee on Trauma.(4) Utilizing RMOCCs as its basic unit of action, NTEPS provides a framework to integrate daily trauma care with mass casualty preparedness, ensuring that the US trauma system—including military, VA, and civilian resources—can seamlessly scale to handle mass population events including large-scale combat operations, acts of terrorism, natural disasters, or pandemics. At this critical moment, the Armed Services Committee should enact statutory authority and identify a lead agency to effect this essential alignment between these trauma/burn MTFs and NTEPS.

Military, VA, and select civilian patients should preferentially be funneled to these regional trauma/burn MTFs. Legislative authority to manage civilians in these centers already exists, although coding and billing best practices represent opportunities for continued improvement. By increasing the clinical volume and acuity in these five to six large MTFs, we will also ensure that our military Graduate Medical Education (GME) programs provide exceptional training aligned with contemporary operational needs.

Beyond these five to six trauma/burn MTFs, the current small network of military-civilian partnership programs (MCP) must be expanded to meet the scale of the readiness need. Existing and future MCP sites must be high-volume civilian trauma centers where military trauma teams can be embedded as part of an integrated readiness plan.(5) Access to burn training and opportunities to embed critical wartime GME training slots within these programs should also rank as preferred features of prospective sites. Consideration should be given to making MCPs joint training platforms.

Opportunities for the Committee to support MCPs include:

- Mission Zero Act (MZA) –This initiative funded under the Pandemic and All Hazards Preparedness Act (PAHPA) supports military trauma teams embedded within high-volume civilian trauma centers, including our center at Penn Medicine. To continue this high-yield investment in clinical training, PAHPA needs immediate reauthorization with full MZA appropriation. Future expansion of this program should include DOD funding as well.

- Military Health System Strategic Partnership with the American College of Surgeons (MHSSPACS) – This joint military partnership with an academic surgical society seeks to improve surgical care for both military and civilian patients by fostering collaboration, exchanging best practices, and advancing military education, research, and quality initiatives. An expanded role for MHSSPACS should include 1) verifying MCPs using accepted requirements and quality standards and 2) advising the JTS on military-civilian trauma system integration to optimize medical readiness for both the MHS and civilian healthcare. MHSSPACS-type partnerships should expand to other critical wartime specialties beyond surgery.

2) Research: Focus the DOD Medical Research Budget on Combat Casualty Care

The Defense Health Program (DHP) funds a wide range of research, but we must refocus efforts principally on combat casualty care—from injury prevention to pre-hospital care and acute surgical care through to rehabilitation and recovery. Research should prioritize pre-hospital care (including prolonged field care), hemorrhage control, battlefield resuscitation, optimal team training, rehabilitation, and regenerative medicine. These research efforts must also consider potential peer-adversary threats within a multidomain (land, air, sea, space, and cyber) battlefield environment. I encourage you to work with your colleagues on Defense Appropriations to prioritize research funding in these key areas of direct relevance to the warfighter with applications to other domains of public concern including emergency medical services, law enforcement as medical first responders, civilian trauma, and disaster response.

We must also eliminate barriers to understanding long-term outcomes following combat injuries by linking DOD Trauma Registry (DODTR) records with current VA medical records at the individual patient level. Further opportunities for improving battlefield survivability and optimizing outcomes lie in fostering partnerships with trusted academic research institutions with the wherewithal to innovate in prehospital care, trauma and burn management, traumatic brain injury, and the psychological and ethical aspects of LSCO. Such investments will fill a need not addressed by the National Institutes of Health and other agencies that fund medical research, and they will benefit both warfighters as well as civilians impacted by acts of terrorism, acts of war, and natural disasters.

3) Policy: Develop and Implement a Unified Joint Military Trauma System Strategy

Decades of reports from the Government Accounting Office, RAND, the National Academies, and past Congressional hearings all point to the same conclusion: we lack a coherent, unified strategy for military medical readiness that will deliver expert trauma/burn care on future battlefields while also benefitting civilian trauma care and public health. In the words of Nadia Schadlow, a colleague at the Hoover Institution and the primary author of the 2017 National Defense Strategy, generating more reports or commissioning new studies will only perpetuate the “crisis of repetition.”

To break this cycle, I am currently working with Uniformed Services University and other key stakeholders to develop a comprehensive military trauma system policy roadmap that considers the direct care component, civilian partnerships, the role of the National Guard and reserves, synergy with the VA, involvement with NDMS and NTEPS, research priorities, and training requirements. This roadmap will need Congressional support to succeed.

The Bottom Line: We Must Demonstrate Medical Supremacy From Day One

In Iraq and Afghanistan, it took us three to four years to develop a trauma system in theater and another five to six years to achieve the medical supremacy that allowed us to save SGT Ramirez. We will not have ten years in the next war.

A near-peer conflict—whether in the Pacific, Europe, or beyond—will generate massive casualty numbers from day one. If we enter that fight unprepared, we will condemn thousands of our warfighters to potentially preventable death. As General Peter Chiarelli painfully noted in his testimony for the National Academies, "You have just got to pray your son or daughter or granddaughter is not the first casualty of the next war."

Will it take another Pearl Harbor or 9/11? Or do we have the will to act now to re-establish and sustain our medical supremacy before the first shot is fired? I submit that we cannot allow history to repeat itself by sending the next generation of our warriors into combat without a fully ready medical service supported by a highly functioning JTS. Mr. Chairman, members of the Committee, our warfighters deserve military medical supremacy.

References

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