Energy and Commerce Committee

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Committee on Military Trauma Care's Learning Health System and its Translation to the Civilian Health Sector.

Testimony on findings and recommendations from the work done for the Scudder Oration 2014 and its accompanying paper Journal of the American College of Surgeons, August 2015 that informed the NASEM's Committee on Military and Civilian Trauma Care and the recent report:

"A National Trauma Care System: Integrating Military and Civilian Trauma Systems to Achieve Zero Preventable Deaths." (June 17, 2016)

The "Achieve Zero Preventable Deaths' by creating a single National Trauma System report is an extensive and well supported by evidence, data and expert testimony. The report has eleven leading recommendations that we feel will protect all Americans from death after injury, at home and while serving in the defense of our country. As well, it urges the *recreation* of the synergy between the two sectors- military readiness and civilian trauma care to greatly improve our overall medical response to disaster and mass casualty events, natural and intentional, that occur on American soil.

I said recreates as the concept of a combined system of military and civilian physicians, surgeons, nurses, researchers and leaders working in partnership to advance combat casualty care, develop leaders in medicine and nursing and translate the human devastation of the battlefield to the research laboratories in our medical universities *is not new*. Prior to Viet Nam and for the first 175 years of this country's history, this was the norm and greatly benefited the health and welfare of our country. After VN it disappeared.

I will address Recommendation 11, which calls for integrating and optimizing the civilian network of America's best and busiest trauma centers as robust platforms to train, sustain, and retain military trauma teams and an expanded expert trauma workforce necessary to support the PRIMARY MISSION of the DOD MHS---Readiness.

Recommendation 11: To ensure readiness and to save lives through the delivery of optimal combat casualty care, the Secretary of Defense should direct the development of career paths for trauma care (e.g., foster leadership development, create joint clinical and senior leadership positions, remove any relevant career barriers, and attract and retain a cadre of military trauma experts with financial incentives for trauma-relevant specialties). Furthermore, the Secretary of Defense should direct the Military Health System to pursue the development of integrated, permanent joint civilian and military trauma system training platforms to create and sustain an expert trauma workforce.

How did our committee arrive at this recommendation and what evidence and data supports such a recommendation?

First let me say, the last two decades have seen astounding and significant advances in military medicine, improving trauma care for combat, mass casualty, and civilian injuries. However, as in all the history of medicine, as the war intensity decreases and periods of interwar peace emerge, there is little to NO opportunities for the military workforce to maintain the trauma surgical, resuscitative and reconstruction skills necessary for the battlefield. In fact, DOD data show that throughout the military beneficiary care (TRICARE), drives the practices of most surgeons and physicians. The most common procedures in military hospitals are obstetrical and the medical management of diseases related to the aging in the enormous beneficiary population of the retired military. Thus, those astounding skills and abilities to save the most devastating wounds is quickly slipping away. Don't blame the individual physician or nurse as the military has little to almost no opportunity for military teams to care for

severe trauma. There is only one Level I Trauma Center in the DOD and two other verified lower level trauma centers.

History also records that as military action returns, there is little time to prepare and relearn the necessary skill set a military surgeon needs to deal with combat, mass casualty events and the horrors brought to the human body. The first few years of war begin with poorly prepared trauma and combat casualty teams. The price of this is death. Thus to overcome these two problems the military must create an expert trauma (combat surgical) workforce that practices its skills daily and contiuously performs at the highest clinical level. As well, this workforce needs to able to rapidly deploy in support of the more contemporary war fighting models. Ours recommendation, is to harness the modern civilian trauma system and partner with the best civilian teaching trauma centers to create vibrant trauma training platforms.

Data that we reviewed and published showed that surgeons at Military Treatment Facilities (military hosptials) did far less resuscitations, few trauma operations and had almost no daily exposure to the management of trauma cases compared to a modestly busy trauma surgeon in civilian practice. Yet once deployed, those same surgeons had to perform traumatic amputations, complex blood vessel repairs, extensive wound debridements, craniotomies, and emergency airway procedures. With time they learned but few had the necessary expert skills needed in the early war years. ,

In that same paper, we reported on how the DOD prepared the surgeons and their teams to go to war. The answer was it was inconsistent, lacked coordination across the three Services and lacked standardization for curricula and skill sets. As well, no assessment of the predeployment or "just in time" training of military surgeons could be found. This preparation is of utmost importance when one looks at the characteristics of the surgeons who went to war.

Most of the front-line surgeons were young (mean age of 36 years) at the time of first deployment, and averaged 2 years of board certification. Most had little to no combat experience and many had not seen civilian combat surgery or had a concentrated experience in a high volume civilian trauma center. As well, when we reviewed questionnaire data from recently deployed military surgeons, they all requested more training in combat surgical procedures and stated they had little exposure to these.

Our survey, largely of nonfellowship-tranined general surgeons, asked what additional surgical experiences they would request on completing their tours. Hemorrhage control at difficult anatomical sites, mediastinal and thoracic injury management and burn care topped the list. Of note, almost 15% requested additional experience with fasciotomy, a simple common procedure and mainstay technique for trauma surgeons! These findings suggest serious flaws in preparation for the front line and first time battlefield surgeons.

The Recommendation 11 of the NASEM report provides a effective and efficient solution as to where these skills are best learned and refreshed on a constant bases for a military medical readiness workforce-- at a very busy civilian urban level I trauma center. Reports starting in the 1990s confirm that, when staffed and structured correctly, these sustained and intense immersion clinical experiences provide a vibrant and effective environment for providers to learn new skills and refresh proficiencies. Those same reports support these environments for pre-hospital, allied health, nursing, special teams, physicians and surgeons to acquire both individual and a the best potential for team training. A more recent report favorably compares the caseloads, severity and type of cases seen at the Center for the Sustainment of Trauma and Readiness Skills program in Baltimore with those of the Role 3 USAF Theater Hospital in Balad, Iraq. Although no civilian center can replicate the case load or wounds of the battlefield, this study concluded that the intensity of high injury severity cases, shock, and exposure to a high volume of soft tissue cases and debridements offers the closest approximation. In a report from a US Marine Corps Shock Trauma Platoon, at a less intense Level I center, benefit was subjectively recognized and valued by the authors.

During the mid war years, the RAND Corporation at the request of the DOD further studied how best to maintain military medical skills in peacetime. This 2008 report strongly recommended stationing military surgeons and teams in civilian trauma centers settings where the case mix resembles the case mix when deployed. The report tested a “willingness to accept” model of placing 12 member teams on a sustained bases (3-4 years) with periodic return to military hospitals. Nine civilian health care

organizations were interviewed to explore potential problems with the model. The questionnaire and interviews were extensive. All but one organization were optimisitic and willing to proceed with such a model if created. The exception was a fire department which had concern because of its labor union and the potential perception that any influx of “discounted” labor would affect it members. The report explores the three physician specialites that are critical for rapid battlefield deployment: general/trauma surgeons, orthopaedists, and anesthesia providers. It sought to assure that these would be fully integrated for advanced training, expansion of skills and maintainence at high proficiencies. Again, NO issues were felt to be insurmountable and the civilian organizations were willing to negotiate and explore cost sharing models with the DOD. Unfortunately, nothing, to my knowledge was ever done in response to the report.

Other aspects of this military-civilian training model were explored. We asked if the model would be attractive to military physicians and to the civilian medical leaders. In addition we sought to

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To understand how to optimally train and retain surgical skills for future conflicts and what professional factors would influenc these key trauma specialists to continue military service. We developed a detailed questionnaire and analyzed the responses of 86 surgeons . These surgeons were military affiliated (Active Duty, Reservists, Recently Separated or Retired. The majority had deployed early in the war years and

now were more senior and experienced. Most were involved in teaching trauma surgery, some had been deployed multiple times and the majority had subsequently completed advanced surgical training in trauma and surgical critical care.

In terms of how to effectively sustain skills, there was almost universal support for achieving this at civilian academic medical and trauma centers as full-time surgical faculty and staff for clinical practice and as trainers for rotating military trauma teams. More than 85% of the respondents felt this model to be effective and attractive. This confirmed the findings and recommendations of the RAND report discussed briefly above.

Let me conclude. Recommendation 11 of the NASEM report is well supported with data, evidence and expert testimony. If implemented it builds on five exisiting centers that would benefit from a more structured and standardized readiness command within the DOD, which is covered in other aspects of the report.

By greatly increasing the number of current national military civilian training trauma center sites at America's best medical universities it provides a greater number of military trauma experts able to deploy without stripping the teams from the centers conducting on going training for reservists or sustainment training for other active duty specialists. Military faculty and staff would be integrated into the culture, organization, clinical and academic services of the university and medical center and have

opportunity to develop the expertise to be trauma leaders and administer trauma programs and centers as well as maintain their clinical trauma careers. These "permanent" or sustained military trauma teams and supportive workforce elements would be on assignment to the civilian hospitals for extended time periods and serve as fully integrated faculty and staff. These civilian trauma centers should be selected based on volume, acuity and DOD profiles that assure adequate and continuous exposure to large volumes of critical injury and promotes clinical expertise for individual providers and the military trauma teams.

Where possible, our struggling "safety net hospitals," many of which serve the inner city poor and some of our most violent areas, are in need of supplemental staffing and should be reviewed for military training centers if they fit all the criteria developed by the DOD.

See Attachment "Map" of potential military civilian trauma training centers (from JACS Aug 2015). Not inclusive of all potential centers.

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

C. William Schwab MD, FACS.

(JACS Aug 2015)

References:

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The above are my abbreviated comments based on the two years of research performed under my direction and by me to explore how to secure a viable and improved partnership between military and civilian medical sectors in order to optimize learning platforms and embed military trauma personnel at America's academic medical universities for trauma and combat casualty care. This investigation used an iterative process, consisting of literature reviews, interviews of military and civilian physicians, administrators and health system executives and a new survey of military affiliated surgeons to craft and validate recommendations for immediate action.

The opinions expressed were those of the author and not approved or endorsed by the ACS, DOD or other governmental agency when published in August 2015.

C. William "Bill" Schwab was trained as a surgeon in the US Navy during the Viet Nam war period and remained on active duty till 1980. Over the last 35 years, he has remained a strong supporter and collaborator with the Medical Health System of the DOD, and in particular the leadership of the USUHS. Bill has held numerous positions of leadership in academic surgery and is a well-known expert on the development of trauma systems, trauma centers and trauma teams. He has established five trauma centers in academic medical centers and community teaching hospitals and served as a consultant to HHS, CDC and several university health systems for trauma systems and center development. From 2003-2006, he served on the Institute of Medicine's Committee to examine the crisis in emergency care in America and its subsequent three part reports on emergency medical services, in hospital emergency care and emergency care for children. These reports called for a national referendum on improving emergency and trauma care.

Dr. Schwab has been at the University of Pennsylvania for the last 29 years and the founding chief of the academic division of traumatology, trauma center and aeromedical evacuation system. He established one of the largest interdisciplinary fellowship training programs for physicians and surgeons in the United States. In cooperation with the three services, he has trained 18 military surgeons in the trauma fellowship, all of whom deployed prior to, after or multiple times to Iraq, Afghanistan or to MTF stateside in support of the war efforts.

In 2014, he was asked to give the Scudder Oration in Trauma of the American College of Surgeons. His "white" paper entitled "The Winds of War: Enhancing Military Civilian Partnerships to Assure Readiness" is considered a seminal contemporary contribution in guiding the future of training, sustaining and retaining military and civilian trauma teams at the highest level of clinical readiness for combat and disaster trauma care.