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role of trauma in many important and serious cardiac events which was an important step from an epidemiological point of view. Dr Ismailov was a recipient of the Dean's Endowment Scholarship, a finalist for the Student Research Achievement Award Competition at the 47th Annual Biophysical Society Meeting, and featured student in *Public Health*, the official magazine of Graduate School of Public Health University of Pittsburgh. His publications appeared in such prestigious scientific journals as *American Heart Journal, Annals of Neurology, Journal of Trauma, Alzheimer Disease & Associated Disorders,* and others. He currently heads the nonprofit Complex Mechanisms of Disease, Aging and Trauma Research Foundation in Glendale, CO. E-mail: dr.ismailov@cmdat.org.

Dr Lytle earned her PhD in interdisciplinary neuroscience from Georgetown University Medical Center in Washington DC. In 2007, she was awarded a National Defense and Global Security Fellowship with the American Association for the Advancement of Science and served at the Office of Naval Research, managing biomedical research and development programs. She has also served as a programmatic reviewer for the US Department of Defense Congressionally Directed Medical Research Program. In 2009, Dr Lytle joined AVIAN LLC as their Science and Technology Division Director and went on to become a director of Business Development and chair of AVIAN's Science and Technology Center of Excellence. In 2009, she was awarded the Chief of Naval Research Gold Coin for her contributions to the US Naval Science and Technology Strategic Plan. In 2012, Dr Lytle was awarded the Commander Naval Air Forces Force Surgeon Gold Coin for her efforts associated with their hypoxia mitigation program. She is currently a Director at the Pacific Northwest Research Institute (www.pnri.org), Seattle, Washington.

KEYWORDS: *high altitude; traumatic brain injury; Editorials; Posttraumatic headache*

Power to the People

by Steven Schauer, DO; Cord Cunningham, MD; Robert DeLorenzo, MD

You are about to start golf season with a limited budget to get you through the summer. Where do you sink your budget: a new driver, a new putter, or lessons from the clubhouse professional? Like a misguided golfer who repeatedly seeks the panacea of yet another piece of fancy equipment that will achieve Jack Nicholas–like performance, the military medical establishment sidesteps better training in the hope of a technology solution to the challenges of far-forward combat casualty care.[1]

Since 1990, the US Army Medical and Materials Command has executed more than $9.6 billion in appropriations,[2] much of which is in search of a supposed technology game changer. This elusive device or drug would save lives, replacing Combat Medic skills with technology. Despite repeated calls for more than a quarter of a century, a proportional amount of resources has not been aligned with training.[3–6] Aside from some pharmaceutical agents, there is no equipment in the Medic's aid bag that was not there several decades ago. Even with the addition of drugs to that aid bag, recent data demonstrate poor adherence to Tactical Combat Casualty Care-recommended use; lack of training with these agents is almost certainly a contributing factor.[7]

To be sure, two important advances in combat medical training must be highlighted: the Army 68W revolution spearheaded at the turn of the century and the more recent program to train Army Flight Medics to the Paramedic level. But, in reality, both initiatives were mere catch-up moves to align Army Medic training with a far more advanced and effective civilian trauma standard. With the experience of the two recent wars and a pause in the action allowing for retraining and refitting, now is the time for the Army and the entire military medical establishment to lead, and not lag, in combat casualty training.

At a strength of approximately 20,000, the 68W Combat Medic military occupational specialty (MOS) is the second largest MOS in the Army and the largest group of battlefield medical providers. The literature has shown both the significant level of preventable deaths that occur in the prehospital setting before reaching the fixed facility, as well as a clearly demonstrable improvement in mortality with the properly trained prehospital providers.[8,9] However, the 68W advancement model is starkly contrasted with the rest of the Soldiers they serve next to in combat.

The 11-MOS (infantry) and 18-MOS (Special Forces) series Soldiers make up the considerable percentage Warfighters where advancement in combat skills is requisite for advancement in rank. The 11- and 18-MOS Soldiers must seek schools and MOS-related advanced training as well as noncommissioned officer (NCO) education system classes to move up in rank.

The 68W training model is disappointingly different. The average Soldier entering basic training is 20.7 years old, rapidly moving from basic training through 16 weeks of advanced individual training, where they are trained to a skill level roughly equivalent to that of the civilian advanced emergency medical technician (AEMT;

previously known as EMT-Intermediate).[10] However, in contrast to their 11- and 18-MOS counterparts, this quite often marks the pinnacle of their medical credentials. The recent exception to this is the critical care flight Paramedic and civil affairs Paramedic, who do attain a higher level of medical training. This still occurs as part of their initial MOS training and they suffer from a similar challenge of advanced skills sustainment. Nowhere in the pathway are these Soldiers required or routinely allocated time to advance their medical training to move up in rank.[11] Quite often the converse occurs. Prior to reaching the NCO ranks, they are placed in jobs ranging from quasi-medical positions that demand virtually no maintenance of skills all the way to long stretches of guard or mail-room duty. Quite often, outside of the Special Operations Forces (SOF) community, upon reaching the NCO ranks, they are placed into leadership positions, pulling them away from direct patient care and into administrative positions that involve virtually no use of medical skills. This almost certainly guarantees skill degradation because medical procedural skills, like any complex psychomotor skill, require repetition.

Unlike many military skills, application of medical skills requires an even greater degree of cognitive performance that stresses the more difficult "why," even more than the mechanics of the "how," making degradation occur at an even greater pace. In essence, the 68W is denied a clinical ladder within the MOS that both recognizes and rewards advancement in lifesaving skills and proficiency in battlefield medicine.

As the operational tempo trends downward, the maintenance of skills will become even more challenging. Despite repetitive senior leadership directives for military treatment facilities (MTFs) to use Medics within their skill set, this guidance has not been embraced by the MTFs.[6] This and the progressive drawdown in Medic scope of practice occur to the detriment of Medic skills and battlefield medical care.

Equally important to MTFs embracing the need to take on the challenge of maintaining Medic skills is strong consideration for revamping the 68W career progression pathway (clinical ladder). This change would need to refocus the requirements to progression in medical skills, giving the senior Medics the advanced skills to train their subordinates, not the other way around. These issues touch closely on one of the SOF truths: *humans are more important than hardware*.

We propose three strategies:

1. A follow-through on the warrior culture within Medical Command that embraces advanced training for Combat Medics in all units and especially within the MTFs. Priority should be given for implementation of high-quality courses designed to train and certify lifesaving skills for Medics.
2. Change policy to reflect promotional credit for Medics who achieve and verify advanced medical training, such as AEMT, Paramedic, or Critical Care Flight Medic.
3. Establishment of clinical awards and a recognition system within units and MTFs that are designed to highlight the clinical accomplishments of enlisted Medics.

If fully implemented, these and similar strategies can achieve a strong swing within the clubs already in the bag, and, importantly, position the Medic to fully exploit the material advancements in the pipeline.

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KEYWORDS: *US Army Medical and Materials Command; appropriations; Medic's aid bag*