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## **Military Civilian Partnerships: International Proposals for Bridging the Walker Dip**

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## **ABSTRACT**

The Walker Dip refers to the cycle of the improvement of care for the battle injured soldier over the course of a conflict, followed by the decline in the skills needed to provide this care during peacetime, and the requisite need to relearn those skills during the next conflict. As the operational tempo of the conflicts in Afghanistan and Iraq has declined, concerns have arisen regarding whether US military surgeons are prepared to meet the demands of future conflicts. This problem is not unique to the US military and allied nations have taken creative steps to address the Walker Dip in their own surgical communities. A panel entitled *Military and Civilian Trauma System Integration: Where Have We Come; Where Are We Going and What Can We Learn from Our International Partners* at the 2018 American Association for the Surgery of Trauma meeting brought together a cadre of civilian and military surgeons with experience in this area. The efforts described involved the creation of a new trauma training program in Doha, Qatar, the military civilian partnership in the Netherlands, and the steps taken to address the deficit of penetrating trauma in Sweden. This article focuses on the lessons that can be learned from our allied partners to assure readiness for deployment amongst military surgeons.

### **Level V Evidence**

### **Study Type: Economic and Value Based Evaluations**

**Keywords: Readiness, Education, Military, International**

## INTRODUCTION

The focus of the military surgeon is to care for war casualties. The high operational tempos of Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom have yielded a cadre of surgeons well practiced in battlefield trauma. Military and civilian literature reflects the advancements in trauma care, driven by these conflicts.<sup>1-4</sup> However, as operational tempo has decreased, there are concerns that there has been a concomitant decrease in the readiness of the surgical force.<sup>5-7</sup> The military's attention has turned towards maintaining surgical readiness and preparing the next generation of surgeons for the conflicts of the future.<sup>8-9</sup> This cycle of care improving over the course of a conflict, followed by a subsequent loss of skills during peacetime, and the need to relearn those skills is known as the "Walker Dip".<sup>10,11</sup> During peacetime, much of the practice of military surgeons occurs at Military Treatment Facilities (MTF). However, the practice at MTFs may not prepare surgeons well for combat deployment. A US Air Force (USAF) report demonstrated that only 3.6% of diagnoses at MTFs were war related.<sup>8,12</sup> From the standpoint of maintaining surgical readiness, MTFs suffer from a lack of cases similar to those encountered on deployment and from low surgical volumes compared to civilian hospitals.<sup>6</sup> When evaluating delivery of trauma and emergency surgical care, it is difficult to draw comparisons to civilian trauma centers as only 3 of 40 MTFs in the United States (US) are verified trauma centers and only 1 serves as a level 1 trauma center. These factors have led to concerns that military surgeons may not be prepared to meet the demands of future conflicts. Indeed, the 2016 report from the National Academy of Sciences, Engineering, and Medicine (NASEM) entitled: *A National Trauma Care System: Integrating Military Civilian Trauma Systems to Achieve Zero Preventable Deaths After Injury*, noted that "most military trauma care teams are not ready to provide the highest quality care to wounded service members. (NASEM)

The report called for a unified effort to address the lack of a national strategy for developing a joint military and civilian strategy for improving trauma care.

These issues are not unique to the US military. NATO allies have similar concerns amongst their surgeons.<sup>(14)</sup> Some countries are working on creative strategies to maintain readiness. The 2018 military pre-session at the American Association for the Surgery of Trauma (AAST) featured talks from representatives of 3 allied nations who have created military civilian partnerships to address the issue of surgeon readiness.

The purpose of this manuscript is to review the experience of other nations and identify similarities and differences in the challenges of keeping a ready medical force and review solutions to these challenges.

## **METHODS**

A joint session of the AAST Military Liaison Committee and the AAST International Relations Committee entitled, *Military and Civilian Trauma System Integration: Where Have We Come; Where Are We Going and What Can We Learn from Our International Partners*, as hosted by the 77<sup>th</sup> Annual AAST meeting in San Diego was recorded. The sessions were analyzed using theme analysis by 2 independent reviewers (GJ and JG). Themes of the meeting were focused on actions taken by international partners to meet the readiness needs of military surgeons. Areas of consensus amongst the reviewers, regarding the mechanisms for maintaining surgical readiness were organized to create this article.

## **RESULTS**

A summary of lessons learned can be found in Table 1.

### **Ruben Peralta MD, Director of Trauma, Emergency, and Critical Care Fellowship Program, Hamad General Hospital, Qatar**

A trauma and critical care surgeon from Hamad General Hospital (HGH) in Doha, Qatar, described the partnership his hospital has developed with the staff at Al Udeid Air Base, and the process of recognizing and addressing a public need. To allow for the provision of care for injured patients, the trauma surgery unit at HGH was established in 2007. This was followed by the development of a trauma and critical care fellowship program to increase the number of trained trauma and critical care surgeons.<sup>(15)</sup> The Hamad Level 1 Trauma Center is now an internationally recognized Center of Excellence in trauma education and care. Al Udeid Air Base is a USAF facility located near the city of Doha and HGH is available for transfers from the base with conditions that cannot be managed at the DOD facilities. Additionally, USAF personnel can go on morning rounds, observe procedures, attend grand rounds, journal clubs, research conferences and other educational activities. Through this partnership, the USAF surgeons can interact with the fellows and are exposed to an academic medical environment during deployment.

### **Teun van Egmond – Colonel, Surgeon Royal Netherlands Armed Forces, Netherlands**

To address the attrition of military surgeons in the Dutch armed forces, their Ministry of Defense (MOD) has created the following solution. Twelve large civilian trauma centers throughout the Netherlands have embedded fully funded and deployable MOD teams within their work

structure. These teams are comprised of surgeons, anesthesiologists, OR nurses, and radiology and lab personnel. Each hospital provides 2 teams of individuals who are in the reserves and deploy on MOD missions. As a result, 85% of Dutch military medical personnel are reservists. Their salaries are paid by their respective hospitals and they receive a short period of military and mission specific training prior to deployment. By keeping deployment durations to a maximum of 3 months, the MOD has maintained “buy-in” from both the hospital and the teams involved. The result is deployable MOD personnel who benefit from the high trauma case volumes associated with working at a civilian trauma center.

**Per Ortenwall, MD, PhD, Surgical Advisor, Training Branch, Centre for Defense Medicine, Sweden**

A surgeon from the Swedish Armed Forces detailed the challenges facing the Swedish department of defense. Since the end of the Cold War the Swedish military has downsized but retained an expeditionary force capable of supporting NATO. Currently, the country is increasing the size of its armed forces. Due to the relatively small size of the active military there are no military treatment facilities (MTF) in Sweden. Therefore, most Swedish military surgeons are in civilian practice. Prior to deployment they are provided basic military and specialized military medical training. The amount of penetrating trauma within Sweden is low. Therefore, to prepare staff to treat combat injuries, staff spend time working in South Africa pre-deployment. Several options are being considered during the personnel buildup, including increased conscription of medical staff, introduction of civilian/military residencies with a focus on trauma, or collaborations with military providers from countries such as Norway and Finland.



## **DISCUSSION**

Multiple presentations provided clear evidence of the difficulty of maintaining a ready surgical force. The represented allied nations have worked to build the partnerships to create forces prepared to provide battlefield surgery. These solutions require flexibility; whether it is increased reliance on reservists, shorter deployments to increase retention, or allowing personnel to train abroad. All of these approaches required a departure from traditional models to address the problem.

As stated by the surgeon of the Swedish Armed Forces, an advantage of the system employed by the US military is that surgical teams can be placed “downrange” quickly. With a cadre of surgeons at MTFs awaiting deployment, surgical teams can be quickly staffed. However, as noted throughout the conference, the era of all general surgeons being trauma surgeons has passed. With today’s general surgeons increasingly specialized or reliant on minimally invasive techniques, the need to place a surgeon quickly down range needs to be balanced with the value of doing so if that surgeon is not well versed in damage control or vascular surgery. Indeed, trauma surgery as a field has changed to maintain procedural competence as operative trauma volumes in the US have declined. The field adapted by taking a larger role in “Acute Care Surgery” (ACS) which incorporates trauma, surgical critical care, and emergency general surgery. This paradigm shift allowed for increased operative numbers, ensuring skill maintenance for operative trauma. The speakers at this forum described similar practice changes brought about in order to ensure that surgeons can deliver quality battlefield care. By focusing on training, increasing use of the reserves, and ensuring surgeons practice trauma surgery

frequently, our allies may be increasing the time needed to put a surgeon in the field, but the surgeon that arrives may be much better equipped to save a life when called upon to do so.

All speakers mentioned the low rates of penetrating trauma, particularly from gunshot wounds at their institutions. Both European speakers noted low levels of firearm injuries. For surgeons in Sweden, experience in this area involved traveling to South Africa to obtain experience with penetrating traumatic injuries. Surgeons in the Netherlands have also been exploring this route.<sup>(16)</sup> Despite these efforts, the lack of exposure to gunshot wounds remains a persistent training gap. Unfortunately, many civilian trauma centers in the US do not lack for violent injuries, particularly firearm injuries. From the standpoint of military readiness, this represents a lost opportunity, as few military surgeons practice in centers that see significant numbers of violent injuries. Therefore, the US military health system should look carefully for partnerships that enhance surgical readiness by involving military surgeons in the delivery of care to patients impacted by gun violence.

As the US health system continues to explore military civilian partnerships, the topic of cost and funding will play a key role. Allied nations with nationalized healthcare may have an advantage when it comes to integration of military personnel. The US has a patchwork of private and public payers that can make development of standardized practices difficult. While there are several major partnerships that exist, the maintenance and expansion of these partnerships are frequently dogged by questions regarding billing, credentialing, and malpractice insurance costs.<sup>(17)</sup> The regulations surrounding military civilian partnerships in the US are sufficiently vague that when two trauma centers who hosted DOD trauma training programs were asked whether they felt that

the Federal Tort Claims Act (FTCA), which protects military providers under orders from litigation, covered their surgeons, one felt the FTCA protection adequate, the second required the DoD to provide additional malpractice coverage at the cost of \$88,000 per year per surgeon.<sup>(18)</sup> While the session involved several excellent examples of military-civilian partnership to enhance trauma capabilities, the complexity of the US health system mandates top down support to allow the development of robust partnerships for US military surgical teams.

## **CONCLUSION**

The maintenance of a ready surgical force, capable and prepared to provide life and limb saving surgery for deployed personnel, has become challenging due to changes in peacetime surgery. These issues are not unique to the US, and many of our allies are working on solutions to prepare their surgical teams. These nations face similar challenges to those faced by US military surgeons, low exposure to penetrating traumatic injuries, low exposure to trauma in general, and a deficit of opportunities for training and knowledge transfer regarding quality trauma care.

These nations have taken advantage of their health systems to create solutions to prepare their surgical teams. There is likely no “one size fits all” solution regarding how to ensure readiness for the unique demands of combat deployment. However, our allies have demonstrated a willingness to seize opportunities in service of this goal. It is vital that the US military follow their example to avoid repeating the Walker Dip. Ongoing conversations regarding which interventions are effective is critical to finding solutions to continue to meet the standard of excellence owed to our forward deployed men and women.

### **Author Contribution and Conflict of Interest Statement**

Teunis van Egmond, Per Ortenwall, and Ruben Peralta provided content on the military surgeon readiness efforts in their respective nations. Michael Aboutanos, and Joseph Galante edited the manuscript and co-hosted the pre session of the American Association for the Surgery of Trauma and edited the manuscript. Guy Jensen prepared the manuscript. The authors have no funding or conflicts of interest to declare. The views represented herein are those of the authors alone and do not represent the views of the United States Navy or the Department of Defense.

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Table 1. Summary of lessons learned from each country's experience working toward improved trauma readiness

Country	Lessons Learned
<b>Qatar</b>	<ol style="list-style-type: none"> <li>1. Recognize coming disparities early</li> <li>2. Focus on training</li> <li>3. Look for nontraditional partnerships to enhance knowledge sharing</li> </ol>
<b>Netherlands</b>	<ol style="list-style-type: none"> <li>1. Increase reliance on reserve units to expand ranks of military surgical teams</li> <li>2. Shorten deployments</li> <li>3. Embed military surgical teams in civilian trauma centers</li> </ol>
<b>Sweden</b>	<ol style="list-style-type: none"> <li>1. Seek out opportunities to for providers to receive true hands on training</li> <li>2. Increase collaboration with allied military providers</li> </ol>

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