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# Too Few Cadavers: How the Law is Limiting Army and Civilian Surgical Training

Tara M. Irani

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# Too Few Cadavers: How the Law is Limiting Army and Civilian Surgical Training

Tara M. Irani, B.A.\*

## ABSTRACT

*The expectation of a nation that places its sons and daughters in harm's way is that these men and women will receive the highest level of care, regardless of how remotely they are deployed. Military surgical residency programs are subject to the same standards that govern civilian residency programs, which now mandate work hour restrictions, possibly producing less-prepared surgeons. Furthermore, completion of standard civilian surgical training does not translate into readiness for battlefield care. For these reasons, pre-deployment surgical training is available at three centers, and this Note will focus, in particular, on the U.S. Army Trauma Training Center (ATTC). The ATTC is located at the Ryder Trauma Center in Miami, Florida, the home of large general, orthopedic, and neurological surgical residency programs and the largest Trauma Surgery and Surgical Critical Care fellowship program in the country. Currently, the most advanced training U.S. Army surgeons receive at the ATTC is the Advanced Surgical Skills for Exposure in Trauma (ASSET) course. The ASSET course provides*

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\* University of Miami School of Law, Class of 2016. The views expressed herein are the author's personal views and do not necessarily reflect those of the Ryder Trauma Center, the University of Miami Miller School of Medicine, the United States Army, or any other department or agency of the State of Florida or U.S. Government. The author would like to thank Assistant Professor of Surgery Dr. George Garcia, Professor of Law Scott Sundby, Associate Professor of Cell Biology and Anatomy Dr. Thomas Champney, Colonel Noel Pace, Attorney Robin Schard, Attorney Ana Ramirez, NSAC Editor in Chief Michael Kranzler, and NSAC Chief Notes Editor Sarah Fowler, for their guidance and support on this article.

*excellent training for exposure, but repair of injuries is not included.*

*On the other hand, the U.S. Navy Trauma Training Center (NTTC) is housed at the Los Angeles County Medical Center University of Southern California (LAC + USC), and LAC + USC uses a pressurized cadaver model for advanced surgical training for both U.S. Navy and civilian trainees. The pressurized cadaver model allows repair of injury in a "bleeding" model, and LAC + USC provides this advanced training more than one hundred times per year due to a more amenable legal environment and a successful anatomical gift program.*

*Currently, Florida's legal environment makes procurement of cadavers difficult and cost prohibitive, precluding additional training opportunities. This loss of advanced training for U.S. Army surgeons prior to deployment, as well as for civilian residents and fellows training in Florida, may lead to less prepared surgeons deploying in support of Army combat units when soldiers, commanders, and families of soldiers expect and deserve the highest level of care available. This Note will discuss the importance of body donation programs and the use of the unclaimed dead in medical education, and how uniform laws and following of ethical guidelines can produce an environment more conducive to the ultimate gift, donation of one's body after death.*

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## I. INTRODUCTION

*“The profession of medicine, and surgery, must always rank as the most noble that men can adopt. The spectacle of a doctor in action among soldiers, in equal danger and with equal courage, saving life where all others are taking it, allaying pain where all others are causing it, is one which must always seem glorious, whether to God or man. It is impossible to imagine any situation from which a human being might better leave this world, and embark on the hazards of the Unknown.”*

*-Sir Winston S. Churchill<sup>1</sup>*

Surgeons in training arrive to work every day in modern, fully staffed, well-equipped hospitals. There is no shortage of manpower and supplies are, for the most part, plentiful. If a patient presents with an unusual or uncommon disease or injury, an array of subspecialists are available for consultation regarding diagnosis and treatment, and a multi-disciplinary team treats patients to ensure that optimal care is provided, and the best outcome possible is achieved. This too is the peacetime practice of U.S. military surgeons. But when war breaks out, the military

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<sup>1</sup> Winston S. Churchill, *The Story of the Malakand Field Force – An Episode of the Frontier War* 110 (Thomas Nelson & Sons, Ltd., London, Edinburgh, and New York, 1916).

surgeon is deployed and faced with an entirely different reality, a reality for which he is often, at least initially, unprepared.

When the 126th Forward Surgical Team (FST) deployed to Afghanistan in January of 2008, they were ordered to divide in half to provide support to two different forward operating bases.<sup>2</sup> The operative team was led by Lieutenant Colonel George D. Garcia.<sup>3</sup> Instead of the doctrinal twenty-person team, ten personnel stepped off a CH-47 Chinook helicopter onto Forward Operating Base Naray in the northeastern portion of Afghanistan, the furthest-deployed, most remote medical asset in the country. There was no modern, well-equipped hospital, but rather, two tents, poor lighting, and extremely limited equipment. If a soldier presented with an uncommon injury, there were no subspecialists to consult or multidisciplinary team to rely on.

Years earlier in Iraq, Logistics Support Activity Anaconda—a large U.S. base—was attacked by indirect fire in the form of mortars and rockets on a daily basis throughout the month of July.<sup>4</sup> The attack hit the hospital area where the 915th FST was established, wounding sixteen of the twenty-person team, including six who were critically wounded.<sup>5</sup> During the attack, Captain Noel C. Pace—now Colonel Pace—deputy brigade surgeon, 3rd Brigade, 4th Infantry Division, rushed over to the scene and assisted with treatment and evacuation of casualties.<sup>6</sup> He later said, “When your vascular surgeon needs a vascular surgeon, the [expletive] has hit the fan!”<sup>7</sup>

Whether performed by military or civilian surgeons, war surgery demands particular expertise as a result of the unique nature of the context of armed conflict, including limitations and dangers, and the specific pathophysiology of high-energy, penetrating missile and blast wounds.<sup>8</sup> War surgery is a surgery of complications, replete with adaptations and improvisations to substitute for what is missing; war surgery consists of surprises that new means and methods of combat reveal.<sup>9</sup> One does not have to be a soldier to recognize the importance of a thoroughly trained military surgeon. The expectation of our nation is that these soldiers will receive the highest level of care, regardless of

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<sup>2</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>3</sup> *Id.*

<sup>4</sup> Col. Darron L. Wright, *Iraq Full Circle* 91 (Osprey Publishing, 2012).

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> Christos Giannou Marco Baldan, *War Surgery: Working With Limited Resources in Armed Conflict and Other Situations of Violence* 30 (Vol. 1, 2009).

<sup>9</sup> *Id.*

how remotely they are deployed. Does surgical training meet our nation's expectations by adequately training military surgeons?

## II MILITARY SURGICAL RESIDENT TRAINING

*The life so short, the craft so long to learn.*

*-Hippocrates<sup>10</sup>*

### A. *Surgical Training Locations and Requirements*

Military surgeons first become civilian surgeons—it is not until later that these surgeons become war surgeons. For surgical residency, each branch of the military trains in a different hospital. The United States Army has six training sites:<sup>11</sup> the National Capital Consortium Program located at the Walter Reed National Military Medical Center in Bethesda, Maryland;<sup>12</sup> the San Antonio Uniformed Services Health Education Consortium located at the San Antonio Military Medical Center in Texas;<sup>13</sup> the Tripler Army Medical Center located in Honolulu, Hawaii;<sup>14</sup> the Madigan Army Medical Center located at Joint Base Lewis-McChord, Tacoma, Washington;<sup>15</sup> Dwight D. Eisenhower Army Medical Center located at Fort Gordon, Georgia;<sup>16</sup> and William Beaumont Army Medical Center located in El Paso, Texas.<sup>17</sup>

The United States Air Force trains surgical residents at five military treatment facilities and one civilian program,<sup>18</sup> including a combined program with the Army in San Antonio.<sup>19</sup> The Air Force training sites include the Wright-Patterson Medical Center located on Wright-

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<sup>10</sup> Hippocrates, <http://en.wikiquote.org/wiki/Hippocrates>.

<sup>11</sup> Association of Program Directors in Surgery, <http://apds.org/?s=army&submit=Search>.

<sup>12</sup> Walter Reed National Military Medical Center, <http://www.wrnmcc.cpmc.mil/ResearchEducation/GME/SitePages/Surgery/Residency.aspx>.

<sup>13</sup> Army Medicine, <http://www.goarmy.com/amedd/health-care/facilities/san-antonio-army-medical-center.html>.

<sup>14</sup> U.S. Army Medical Department, Tripler Army Medical Center, <http://www.tamc.amedd.army.mil/residency/mchk-ds/gsrtp.htm>.

<sup>15</sup> Madigan Army Medical Center, <http://www.mamc.amedd.army.mil/>.

<sup>16</sup> U.S. Army Medical Department, Dwight D. Eisenhower Army Medical Center, <http://www.ddeamc.amedd.army.mil/>.

<sup>17</sup> William Beaumont Army Medical Center, <http://www.wbamc.amedd.army.mil/>.

<sup>18</sup> Military Graduate Medical Education, <http://www.militarygme.org/4.html>.

<sup>19</sup> *Id.*

Patterson Air Force Base near Dayton, Ohio;<sup>20</sup> the David Grant USAF Medical Center on Travis Air Force Base near Fairfield, California;<sup>21</sup> the Keesler Medical Center on Keesler Air Force Base, near Biloxi, Mississippi;<sup>22</sup> and in partnership with the civilian surgical training program at the University of Nevada School of Medicine in Las Vegas.<sup>23</sup>

The United States Navy has three surgical training sites.<sup>24</sup> U.S. Navy surgeons partner with the Army at the National Capital Consortium Program,<sup>25</sup> and train at Naval Medical Centers in Portsmouth, Virginia<sup>26</sup> and San Diego, California.<sup>27</sup>

Like civilian programs, these military training programs are accredited by the Accreditation Council for Graduate Medical Education (ACGME).<sup>28</sup> The American Board of Surgery (ABS) is an independent, nonprofit organization founded to evaluate the qualifications of those practicing in the field of surgery,<sup>29</sup> and surgical residents must complete a minimum of five years of residency education in an ACGME accredited program to be eligible to take the ABS Certifying Exam.<sup>30</sup> General surgery residents must complete at least fifty-four months of clinical surgical experience with increasing levels of responsibility over their five years of training, with no fewer than forty-two months devoted to defined content areas of general surgery.<sup>31</sup>

<sup>20</sup> Wright-Patterson Air Force Base, <http://www.wpafb.af.mil/units/wpmc/>.

<sup>21</sup> Travis Air Force Base, <http://www.travis.af.mil/units/dgmc/>.

<sup>22</sup> Keesler Air Force Base, <http://www.keesler.af.mil/units/81stmedicalgroup.asp>.

<sup>23</sup> University of Nevada School of Medicine, Surgery: Las Vegas, <http://medicine.nevada.edu/las-vegas/surgery/residencies/general>.

<sup>24</sup> Military Graduate Medical Education, <http://www.militarygme.org/4.html>.

<sup>25</sup> Walter Reed National Military Medical Center, <http://www.wrnmmc.capmed.mil/ResearchEducation/GME/SitePages/Surgery/Residency.aspx>.

<sup>26</sup> Naval Medical Center Portsmouth, VA, <http://www.med.navy.mil/sites/nmcp/provider/gensurg/Pages/default.aspx>.

<sup>27</sup> Navy Medicine West, <http://www.med.navy.mil/sites/nmw/Commands/Pages/NMC%20San%20Diego.aspx>.

<sup>28</sup> About Graduate Medical Education (GME) and The Army Medical Corps Specialty Delay Program (DELAY), <http://www.mods.army.mil/MedicalEducation/>; Air Force Instruction 41-110, 1.1.4.7, <http://www.airforcemedicine.af.mil/shared/media/document/AFD-130910-054.pdf>; Inservice Residency Programs and Positions, [http://www.med.navy.mil/sites/nmpdc/NMPDC%20Document%20Library/GME%20Program/GME%20Dates/NavyGMEProgramsMainPage\\_Cliff\\_Taylor.pdf?Mobile=1&Source=%2Fsites%2Fnmcdc%2F\\_layouts%2Fmobile%2Fview.aspx%3FList%3D1ffe3c5a-f0f5-4121-af48-58789eab2a53%26View%3D10b53709-9779-4c06-8719-23909626f8e1%26RootFolder%3D%252Fsites%252Fnmpdc%252FNMPDC%2520Document%2520Library%252FGME%2520Program%252FGME%2520Dates%26CurrentPage%3D1](http://www.med.navy.mil/sites/nmpdc/NMPDC%20Document%20Library/GME%20Program/GME%20Dates/NavyGMEProgramsMainPage_Cliff_Taylor.pdf?Mobile=1&Source=%2Fsites%2Fnmcdc%2F_layouts%2Fmobile%2Fview.aspx%3FList%3D1ffe3c5a-f0f5-4121-af48-58789eab2a53%26View%3D10b53709-9779-4c06-8719-23909626f8e1%26RootFolder%3D%252Fsites%252Fnmpdc%252FNMPDC%2520Document%2520Library%252FGME%2520Program%252FGME%2520Dates%26CurrentPage%3D1).

<sup>29</sup> The American Board of Surgery, *About ABS Certification*, <http://www.absurgery.org/default.jsp?publiccertprocess>.

<sup>30</sup> The American Board of Surgery, *Training Requirements*, [http://www.absurgery.org/default.jsp?certgsqe\\_training](http://www.absurgery.org/default.jsp?certgsqe_training).

<sup>31</sup> *Id.*

In addition, residents must successfully complete the Advanced Cardiovascular Life Support course,<sup>32</sup> the Advanced Trauma Life Support Course,<sup>33</sup> and the Fundamentals of Laparoscopic Surgery.<sup>34</sup> A minimum of 750 operative procedures in five years as the operating surgeon must be performed, and a resident must care for minimum of twenty-five cases in surgical critical care with at least one case in ventilator management, non-traumatic bleeding, unstable vital signs, organ dysfunction/failure, abnormal heart beat, invasive line management and nutrition.<sup>35</sup> Following successful completion of residency training, a written and an oral exam assessing surgical knowledge, judgment, and decision making are administered by the ABS and, assuming success, the surgeon is deemed board certified.<sup>36</sup>

### *B. Existing Limitations*

Because military general surgical residency programs are subject to the same standards set forth by the Accreditation Council for Graduate Medical Education (ACGME) that govern civilian residency programs, they are also subject to work-hour limitations. In 2002, the ACGME began to restrict the number of hours that surgical residents could work to reduce fatigue related errors, and in 2007, Congress and the Agency for Healthcare Research directed the Institute of Medicine of the National Academies to further examine resident duty hours.<sup>37</sup> Although the intended effect of these duty hour restrictions was to mitigate fatigue-related errors, a predictable consequence was a decrease in resident physician experience.<sup>38</sup> Surgical literature suggests that general surgical residency no longer adequately prepares trainees, and that up to two-thirds of those graduating from general surgical residency are unable to

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<sup>32</sup> The American Heart Association, [http://www.heart.org/HEARTORG/CPRAndECC/HealthcareProviders/AdvancedCardiovascularLifeSupportACLS/Advanced-Cardiovascular-Life-Support-ACLS\\_UCM\\_001280\\_SubHomePage.jsp](http://www.heart.org/HEARTORG/CPRAndECC/HealthcareProviders/AdvancedCardiovascularLifeSupportACLS/Advanced-Cardiovascular-Life-Support-ACLS_UCM_001280_SubHomePage.jsp).

<sup>33</sup> American College of Surgeons, *Advanced Trauma Life Support*, <https://www.facs.org/quality-programs/trauma/atls>.

<sup>34</sup> *Fundamentals of Laparoscopic Surgery*, <http://www.flsprogram.org/>.

<sup>35</sup> *Id.*

<sup>36</sup> The American Board of Surgery, *About ABS Certification*, <http://www.absurgery.org/default.jsp?publiccertprocess>.

<sup>37</sup> Resident Duty Hours: Enhancing Sleep, Supervision and Safety (Cheryl Ulmer, Dianne M. Wolman, Michael M.E. Jons, eds., 2009).

<sup>38</sup> Samer G. Mattar, Adnan A. Alseidi, Daniel B. Jones, D. Rohan Jeyarajah, Lee L. Swanstrom, Ralph W. Aye, Steven D. Wexner, Jose M. Martinez, Sharona B. Ross, Michael M. Awad, Morris E. Franklin, Maurice E. Arregui, Bruce D. Schirmer, Rebecca M. Minter, *General surgery residency inadequately prepares trainees for fellowship: results of a survey of fellowship program directors*, 258 ANN. SURG. 440 (2013).

operate independently.<sup>39</sup> More than ten years ago residents averaged ninety to one-hundred hours per week, so that over a five-year residency they spent 3,000 to 5,000 additional hours in-hospital compared to present-day residents.<sup>40</sup> When considered in the context of trauma surgery, where decisions and operations must be made quickly to save lives, this lack of training becomes of paramount concern.

Furthermore, as time has passed, civilian injuries have begun to differ more significantly from wartime injuries. The generation of surgeons who treated crashes among agricultural or industrial workers learned of the dangers of gas gangrene, tetanus, the necessity of good wound excision, and delayed primary closure.<sup>41</sup> In this sense, a surgeon could shift from this “septic” civilian surgery to war wounds because civilian wounds provided thorough training.<sup>42</sup> The care of weapon-wounded patients follows accepted surgical standards, but because it is performed under extreme conditions, it makes the management of a civilian gunshot wound due to criminal violence difficult to extrapolate to surgery in armed conflict, and limited resources can lead to the death of patients who would have survived had more sophisticated means been available.<sup>43</sup> The extent of tissue destruction and contamination seen in war injuries is rarely seen in everyday civilian trauma, and working conditions during war are radically different from those in peacetime.

Most peacetime operations are elective, and the surgeon concentrates on doing everything she possibly can, using the full range of resources necessary, for each and every patient.<sup>44</sup> As opposed to the penetrating trauma seen in war, most civilian trauma is blunt, and today’s surgeons typically derive their trauma training from motor vehicle crashes.<sup>45</sup> During their peacetime mission, military medical providers primarily care for young, healthy active duty personnel and their families, and surgeons trained to practice in multidisciplinary teams can find themselves alone to face the entire surgical workload and deal with subspecialties with which they have, at best, only a passing familiarity.<sup>46</sup> The U.S.’s ability to leverage medical technological advances provided

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<sup>39</sup> *Id.*

<sup>40</sup> Frank R. Lewis, *Comment of the American Board of Surgery on the recommendations of the Institute of Medicine Report, “Resident Duty Hours: Enhancing Sleep, Supervision, and Safety,”* 146 *SURGERY* 410, 411 (2009).

<sup>41</sup> Christos Giannou Marco Baldan, *War Surgery: Working With Limited Resources in Armed Conflict and Other Situations of Violence* 30 (Vol. 1, 2009).

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> Christos Giannou Marco Baldan, *War Surgery: Working With Limited Resources in Armed Conflict and Other Situations of Violence* 19 (Vol. 1, 2009).

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

strategic operational and tactical advantages over our enemies and contributed to our past military success,<sup>47</sup> but these medical advances, including laparoscopy, radioscopy embolization, and unreamed intramedullary nails, do not adequately train surgeons treating patients with a landmine injury of the thigh or a machine-gun wound to the abdomen.<sup>48</sup> This sophisticated modern technology and early specialist training of surgeons benefit patients in a peacetime environment, but this creates an obstacle to the practice of surgery during armed conflict.<sup>49</sup>

### III. PRE-DEPLOYMENT, POST-RESIDENCY SURGICAL TRAINING

*All the circumstances of war surgery thus do violence to civilian concepts of traumatic surgery.*

*-Michael E. DeBakey<sup>50</sup>*

*The best surgeon, like the best general, is he who makes the fewest mistakes.*

*-Sir Astley Paston Cooper<sup>51</sup>*

#### A. High-Volume Trauma Centers Provide Necessary Training

There are many reasons why completion of standard civilian surgical training does not translate into readiness for battlefield care. In a report published by the U.S. General Accounting Office in 1998, a critical lack of trauma training for military medical providers was identified, calling

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<sup>47</sup> COL Noel Christian Pace, MS, USAR, *The National Security Implications and Potential Solutions for the Unintended Consequences of the 1980 Bayh-Dole Act on Brain-Injured Veterans from the Wars in Iraq and Afghanistan*, 4 U. MIAMI NAT'L SEC. & ARMED CONFLICT L. REV. 241, 261 (2014).

<sup>48</sup> Christos Giannou Marco Baldan, *War Surgery: Working With Limited Resources in Armed Conflict and Other Situations of Violence* 19 (Vol. 1, 2009).

<sup>49</sup> *Id.*

<sup>50</sup> Michael E. DeBakey, *Military surgery in World War II – a backward glance and a forward look*, 236 NEW ENGL. J. MED. 341, 343 (1947).

<sup>51</sup> James Anthony Froude, John Tulloch and Thomas Carlyle, *Fraser's Magazine* 57, 66 (Nov 1862).

into question their preparation for battlefield conditions.<sup>52</sup> In order to improve the readiness and ability of the Forward Surgical Teams to provide surgical care in a wartime setting, in the late 1990's, a Department of Defense subcommittee screened more than one hundred civilian trauma centers according to the number of admissions, percentage of penetrating trauma, and institutional interest in relation to the specific training missions of each of the three service branches.<sup>53</sup> As a potential solution to shortcomings in training, the report recommended the development of military-civilian collaborations at Level I trauma centers to provide the necessary trauma training.

The Ryder Trauma Center was selected as the one most capable of providing the critical training Army teams required based on the volume and type of patients seen.<sup>54</sup> In October 2001, the Army Trauma Training Center opened at the Ryder Trauma Center in Miami, Florida, to provide real world trauma experience to U.S. Army Forward Surgical Teams.<sup>55</sup> Simultaneously, the Navy selected the Los Angeles County Medical Center University of Southern California (LAC + USC) as the site of the U.S. Navy Trauma Training Center, and the Air Force selected the Center for the Sustainment of Trauma and Readiness Skills (C-STARS) at the R. Adams Cowley Shock Trauma Center at the University of Maryland Medical Center in Baltimore, Maryland as the site of their trauma-training center.<sup>56</sup>

### *B. Army Trauma Training Center*

Jackson Memorial Hospital (JMH) is located in Miami, Florida, and according to American Hospital Directory statistics, JMH has a total of 1,732 total staffed beds, making it one of the largest hospitals in the country.<sup>57</sup> JMH surgeons perform over 21,000 inpatient surgeries per

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<sup>52</sup> Washington, DC, General Accounting Office, *Medical Readiness: Efforts are Underway for DOD Training in Civilian Trauma Centers* (1998) available at GAO/NSAID-98-75, <http://www.gpo.gov/fdsys/pkg/GAOREPORTS-NSIAD-98-75/pdf/GAOREPORTS-NSIAD-98-75.pdf>.

<sup>53</sup> Chad M. Thorson, Joseph J. Dubose, Peter Rhee, Thomas E. Knuth, Warren C. Dorlac, Jeffrey A. Bailey, George D. Garcia, Mark L. Ryan, Robert M. Van Haren, Kenneth G. Proctor, *Military trauma training at civilian centers: a decade of advancements*, 73 J. TRAUMA ACUTE CARE SURG. S483, S484 (2012).

<sup>54</sup> *Id.*

<sup>55</sup> Linda A. Valdiri, Virginia E. Andrews-Arce, Jason M. Seery, *Training forward surgical teams for deployment: the U.S. Army trauma training center*, 35 CRIT. CARE NURSE, e11 (2015).

<sup>56</sup> *Id.*

<sup>57</sup> American Hospital Directory, Jackson Memorial Hospital, [http://www.ahd.com/free\\_profile/100022/Jackson\\_Memorial\\_Hospital/Miami/Florida/](http://www.ahd.com/free_profile/100022/Jackson_Memorial_Hospital/Miami/Florida/).

year.<sup>58</sup> Among its many training programs is a general surgery residency program consisting of thirty-five general surgery residents, seven for each of the five post-graduate years comprising a general surgical residency.<sup>59</sup> Each resident will perform approximately 1,200 major operations over their five years of surgical training.<sup>60</sup>

JMH is home to the Ryder Trauma Center, which receives well over 4,000 injured patients per year, making it one of the busiest trauma centers in the country.<sup>61</sup> The Ryder Trauma Center is a Level I trauma center, requiring criteria including extensive education, research, in-house surgical staff, and multiple surgical specialties.<sup>62</sup> Every patient transported to the Ryder Trauma Center meets state-defined trauma center criteria, which assess injury severity using factors such as age, airway, circulation, bone fractures, mechanism of injury, and cognitive skills.<sup>63</sup> A significant number—approximately twenty-five percent—of these patients present with a “penetrating injury” (e.g., injury due to gunshot or stab wound) and often require immediate, lifesaving surgery.<sup>64</sup> Also among JMH training programs is the largest and one of the very first Trauma Surgery and Surgical Critical Care fellowship programs in the country.<sup>65</sup> As a result of the volume of trauma patients and the mix of types of trauma (penetrating versus blunt) seen consistently, Jackson Memorial Hospital and the Ryder Trauma Center is home to the U.S. Army Trauma Training Center (ATTC).<sup>66</sup>

The U.S. Army Forward Surgical Team (FST) is a twenty-person team comprised of medics, operating room technicians, nurses, nurse anesthetists, and surgeons (three general surgeons and one orthopedic

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<sup>58</sup> Becker’s Hospital Review, 10 Things to Know About Jackson Memorial Hospital, <http://www.beckershospitalreview.com/hospital-profiles/10-things-to-know-about-jackson-memorial-hospital.html>.

<sup>59</sup> Jackson Health System, General Surgery Residency, <http://www.jacksonhealth.org/residency-generalsurgery.asp>.

<sup>60</sup> *Id.*

<sup>61</sup> Jackson Health System, Ryder Trauma Center, <http://www.jacksonhealth.org/ryder.asp>.

<sup>62</sup> Trauma Center Standards, Florida Department of Health, Pamphlet 150-9, [http://www.floridahealth.gov/licensing-and-regulation/trauma-system/\\_documents/traumacntrstandpamphlet150-9-2009rev1-14-10.pdf](http://www.floridahealth.gov/licensing-and-regulation/trauma-system/_documents/traumacntrstandpamphlet150-9-2009rev1-14-10.pdf).

<sup>63</sup> Adult Trauma Scorecard Methodology, <http://florida.eregulations.us/rule/64j-2.004>.

<sup>64</sup> Jackson Health System, Surgical Critical Care and Trauma Fellowship, <http://www.jacksonhealth.org/fellowship-surgicalcriticalcaretrauma.asp>.

<sup>65</sup> *Id.*

<sup>66</sup> Chad M. Thorson, Joseph J. Dubose, Peter Rhee, Thomas E. Knuth, Warren C. Dorlac, Jeffrey A. Bailey, George D. Garcia, Mark L. Ryan, Robert M. Van Haren, Kenneth G. Proctor, *Military trauma training at civilian centers: a decade of advancements*, 73 J. TRAUMA ACUTE CARE SURG. S483, S484 (2012).

surgeon).<sup>67</sup> The primary mission of the FST is to provide a rapidly deployable urgent surgical service forward in a division area of operation (AO) and to provide urgent initial surgery for otherwise non-transportable patients.<sup>68</sup> The FST is designed to provide continuous operations in conjunction with a supporting medical company for up to seventy-two hours.<sup>69</sup> Within this seventy-two hour window, the FST is able to provide emergency treatment, receive, triage, and prepare incoming patients for surgery, and provide the required surgery and continued post-operative care for up to thirty critically injured patients without requiring their equipment be resupplied.<sup>70</sup>

Over the past thirteen years, the details of the training have evolved and have been modified; however, the mission of the ATTC has remained constant. The ATTC aims to provide an environment in which the FST can improve the delivery of trauma care and solidify their teamwork to allow them to perform as efficiently as possible.<sup>71</sup> Since training began at the ATTC, the overwhelming majority of U.S. Army FSTs have rotated through the ATTC prior to deployment to both Operation Enduring Freedom and Operation Iraqi Freedom.<sup>72</sup> Since then, over 112 teams and 2,200 medics, nurses, nurse anesthetists, and surgeons have been trained.<sup>73</sup> Additionally, the entire White House Medical Unit has been trained at the ATTC.<sup>74</sup> The ATTC provides the only real-world, practical trauma experience for these teams prior to deploying to combat.<sup>75</sup>

Unfortunately, prior to deployment, the majority of personnel assigned to an FST spend little to no time performing direct patient

<sup>67</sup> Field Manual 4-02.25 Employment of Forward Surgical Teams, Tactics, Techniques, and Procedures, <http://www.globalsecurity.org/military/library/policy/army/fm/4-02-25/fm4-02-25.pdf>.

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> Bruno M. Pereira, Mark L. Ryan, Michael P. Ogilive, Juan C. Gomez-Rodriguez, Paul McAndrew, Georg D. Garcia, Kenneth G. Proctor, *Pre-deployment mass casualty and clinical trauma training for U.S. Army forward surgical teams*, 21 J. CRANIOFAC. SURG. 982, 985 (2010).

<sup>72</sup> *Id.* at 982.

<sup>73</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>74</sup> Linda A. Valdiri, Virginia E. Andrews-Arce, Jason M. Seery, *Training forward surgical teams for deployment: the U.S. Army trauma training center*, 35 CRIT. CARE NURSE e11, e11 (2015).

<sup>75</sup> Chad M. Thorson, Joseph J. Dubose, Peter Rhee, Thomas E. Knuth, Warren C. Dorlac, Jeffrey A. Bailey, George D. Garcia, Mark L. Ryan, Robert M. Van Haren, Kenneth G. Proctor, *Military trauma training at civilian centers: a decade of advancements*, 73 J. TRAUMA ACUTE CARE SURG. S483 (2012).

care.<sup>76</sup> The surgeons are performing patient care on a daily basis at their assigned hospitals, but the vast majority of Army surgeons have no exposure to trauma patients in the non-deployed setting.<sup>77</sup> Regardless of their peacetime practice patterns, the primary role of Army surgeons while deployed in support of combat operations is trauma surgery. Therefore, it would be reasonable to assume that Army surgeons would have some requirement for maintenance of some level of trauma skills and knowledge. No such requirement exists, however.

In 2009, to further enhance the surgical portion of the curriculum at the ATTC, the Advanced Surgical Skills for Exposure in Trauma (ASSET) course was incorporated into the rotation and is given during the first week of each FST rotation, eleven times a year.<sup>78</sup> This relatively new course was specifically developed by the American College of Surgeons' Committee on Trauma's Surgical Skills Committee to fill a need in resident and fellow education.<sup>79</sup> ASSET is a one-day course that includes a pre- and post-test made up entirely of questions regarding the approach and management of traumatic injuries. This course uses human cadavers to teach surgical exposure of anatomic structures that pose a significant threat to both life and limb, and there are four student-surgeons per cadaver with one instructor for every two student-surgeons.<sup>80</sup> The course proceeds with short trauma case presentations to introduce the operative exposure to be performed, and is then followed by a description of the exposure and a video demonstrating it.<sup>81</sup> The surgeons then expose the "injury" presented in the case on the cadaver, which provides excellent training for surgical exposure of both common and rare injuries encountered in a trauma patient, and significantly improves self-reported confidence in the exposures needed to care for

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<sup>76</sup> Thomas E. Knuth, *The peacetime trauma experience of U.S. Army surgeons: another call for collaborative training in civilian trauma centers*, 161 MIL. MED. 137 (1996).

<sup>77</sup> Washington, DC, General Accounting Office, *Medical Readiness: Efforts are Underway for DOD Training in Civilian Trauma Centers* (1998) available at GAO/NSAID-98-75, <http://www.gpo.gov/fdsys/pkg/GAOREPORTS-NSIAD-98-75/pdf/GAOREPORTS-NSIAD-98-75.pdf>.

<sup>78</sup> Chad M. Thorson, Joseph J. Dubose, Peter Rhee, Thomas E. Knuth, Warren C. Dorlac, Jeffrey A. Bailey, George D. Garcia, Mark L. Ryan, Robert M. Van Haren, Kenneth G. Proctor, *Military trauma training at civilian centers: a decade of advancements*, 73 J. TRAUMA ACUTE CARE SURG. S483, S486 (2012).

<sup>79</sup> Deborah A. Kuhls, Donald A. Risucci, Mark W. Bowyer, Fred Luchette, *Advanced surgical skills for exposure in trauma: a new surgical skills cadaver course for surgery residents and fellows*, 74 J. TRAUMA ACUTE CARE SURG. 664, 664 (2013).

<sup>80</sup> American College of Surgeons, *Advanced Surgical Skills for Exposure in Trauma*, <https://www.facs.org/quality-programs/trauma/education/asset>.

<sup>81</sup> *Id.*

trauma.<sup>82</sup> Surgeons at these centers must be optimally prepared to diagnose and expose these injuries as quickly as they are able in order to decrease, to the greatest extent possible, the lethality of these injuries. Repair of injuries, however, is not included in the design of the course.<sup>83</sup>

Since the course was introduced into the ATTC rotation, ninety-five Army general surgeons have taken the course.<sup>84</sup> The average score for the ASSET pre-test is sixty-four percent, a score that a former Director of the ATTC feels is too low<sup>85</sup> and reflects a lack of emphasis on trauma care in the day-to-day practice of Army surgeons while not deployed.

Over the past three years, the course has been conducted alternately using arterially embalmed, frozen, and light arterially embalmed cadavers. The arterially embalmed cadavers were abandoned, as the tissue was too desiccated for adequate surgical training. The frozen cadavers proved to be unreliable because variations in size and weight made thawing times difficult to predict, often leaving the cadavers stiff and the viscera frozen and unable to dissect and expose.<sup>86</sup> The light embalmed cadavers, which are currently being used, eliminate the need for thawing, but preserve the integrity of the tissues enough to allow excellent dissection.<sup>87</sup> These cadavers are obtained at the cost of approximately \$2,500 per cadaver from out-of-state non-profit biological supply companies, after local companies proved too cost prohibitive to conduct this training, and in-state university Willd Body programs provide only arterially embalmed cadavers for university medical education.<sup>88</sup> A potentially less expensive option for surgical training, the use of unclaimed cadavers, is not presently utilized in the State of Florida.<sup>89</sup>

### C. Navy Trauma Training Center

The specific goal of the Navy Trauma Training Center is to provide didactic training, state of the art simulation training, and hands-on

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<sup>82</sup> Mark W. Bowyer, Deborah A. Kuhls, Danielle Haskin, Richard A. Sallee, Sharon M. Henry, George D. Garcia, Frederick A. Luchette, *Advanced Surgical Skills for Exposure in Trauma (ASSET): the first 25 courses*, 183 J. SURG. RES. 553, 556 (2013).

<sup>83</sup> Deborah A. Kuhls, Donald A. Risucci, Mark W. Bowyer, Fred Luchette, *Advanced surgical skills for exposure in trauma: a new surgical skills cadaver course for surgery residents and fellows*, 74 J. TRAUMA ACUTE CARE SURG. 664, 664 (2013).

<sup>84</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> Medical Examiners; Disposition of Human Remains, Unclaimed Remains; disposition, procedure, § 406.50, Fla. Stat. (2014).

training in the care of trauma patients to promote teamwork.<sup>90</sup> The priority of the Navy Trauma Training Center (NTTC) is to train those personnel deploying with Forward Resuscitating Surgical System (FRSS) in support of U.S. Marine combat units. The FRSS are made up of twelve personnel and are expected to function immediately and efficiently upon their arrival in the combat theater.<sup>91</sup> In addition, Fleet Surgical Teams, the personnel who support U.S. Marines on board ships, are sent to the NTTC, as they have the highest likelihood of treating trauma patients.<sup>92</sup> During the four-week rotation, the teams are subjected to intense, realistic training scenarios after which the core rotators are fully integrated into the Los Angeles County system, working side by side with the civilian trauma physicians, nurses, and ancillary staff.

In the state of California, after due diligence, it is possible to obtain unclaimed bodies for surgical education, creating significantly lower costs and allowing for more advanced surgical education.<sup>93</sup> The LAC + USC Medical Center uses a pressurized cadaver model for advanced surgical training for both U.S. Navy and civilian trainees to simulate a perfused body.<sup>94</sup> The pressurized cadaver model allows for exposure and repair of an injury in a “bleeding” patient,<sup>95</sup> realistically simulating an operation on a live patient.<sup>96</sup> This pressurized “bleeding” cadaver model allows one to operate in a surgical field obscured by “blood”—blue and red-pigment concentrate—and to re-create, as closely as possible, the literal and figurative pressure of performing an operation where seconds matter.<sup>97</sup> LAC + USC and the NTTC do not have as robust an ASSET program as the Ryder Trauma Center and the ATTC; the ASSET course

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<sup>90</sup> Chad M. Thorson, Joseph J. Dubose, Peter Rhee, Thomas E. Knuth, Warren C. Dorlac, Jeffrey A. Bailey, George D. Garcia, Mark L. Ryan, Robert M. Van Haren, Kenneth G. Proctor, *Military trauma training at civilian centers: a decade of advancements*, 73 J. TRAUMA ACUTE CARE SURG. S483, S487 (2012).

<sup>91</sup> Association of the United States Navy, Health Affairs, The Forward Resuscitative Surgical Team, [http://www.ausn.org/Portals/0/Services\\_pdfs/Health\\_Affairs-AUG04.pdf](http://www.ausn.org/Portals/0/Services_pdfs/Health_Affairs-AUG04.pdf).

<sup>92</sup> Chad M. Thorson, Joseph J. Dubose, Peter Rhee, Thomas E. Knuth, Warren C. Dorlac, Jeffrey A. Bailey, George D. Garcia, Mark L. Ryan, Robert M. Van Haren, Kenneth G. Proctor, *Military trauma training at civilian centers: a decade of advancements*, 73 J. TRAUMA ACUTE CARE SURG. S483, S487 (2012).

<sup>93</sup> Cal. Health & Safety Code § 7202 (2014).

<sup>94</sup> Stephen Varga, Jennifer Smith, Michael Minneti, Joseph Carey, Scott Zakaluzny, Thomas Noguchi, Demetrios Demetriades, Peep Talvig, *Central Venous Catheterization Using a Perfused Human Cadaveric Model: Application to Surgical Education*, 72 J. SURG. EDUC. 28 (2015).

<sup>95</sup> *Id.*

<sup>96</sup> Joseph N. Carey, Michael Minneti, Hyuama A. Leland, Demetrios Demetriades, Peep Talvig, *Perfused fresh cadavers: method for application to surgical simulation*, AM. J. SURG. (2015), available at <http://dx.doi.org/10.1016/j.amjurg.2014.10.027>.

<sup>97</sup> *Id.*

is offered only twice to three times per year at the LAC + USC.<sup>98</sup> However, LAC + USC obtains an unclaimed, fresh cadaver on a nearly weekly basis, which allows, arguably, even more advanced training than the ASSET course.<sup>99</sup>

According to George D. Garcia, MD, FACS, Lieutenant Colonel (Retired), U.S. Army, Director of the ATTC from 2009-2012, the ideal curriculum for rotating surgeons would consist of the ASSET course, allowing absolutely controlled exposures. Many of these controlled exposures most Army surgeons have, at best, not performed recently, and for more uncommon injuries, may never have performed.<sup>100</sup> ASSET would be followed by performing select operations on a pressurized cadaver, allowing the more accurate representation of performing these urgent and difficult operations on a bleeding patient.<sup>101</sup> Unlike in California, difficulties of using unclaimed cadavers in Florida make similar training at the ATTC cost-prohibitive.<sup>102</sup>

#### IV. UNCLAIMED CADAVERS: NOT YET A DEAD DEBATE

*The life of the dead is placed in the memory of the living.*

-Marcus T. Cicero<sup>103</sup>

##### A. *The Unclaimed Dead*

The body of a deceased person is considered unclaimed if it is not claimed upon death by a relative or other legal representative, and if it

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<sup>98</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>99</sup> Stephen Varga, Jennifer Smith, Michael Minneti, Joseph Carey, Scott Zakaluzny, Thomas Noguchi, Demetrios Demetriades, Peep Talvig, *Central Venous Catheterization Using a Perfused Human Cadaveric Model: Application to Surgical Education*, 72 J. SURG. EDUC. 28 (2015).

<sup>100</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>101</sup> Stephen Varga, Jennifer Smith, Michael Minneti, Joseph Carey, Scott Zakaluzny, Thomas Noguchi, Demetrios Demetriades, Peep Talvig, *Central Venous Catheterization Using a Perfused Human Cadaveric Model: Application to Surgical Education*, 72 J. SURG. EDUC. 28 (2015).

<sup>102</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>103</sup> Dictionary of Quotes. <http://www.dictionary-quotes.com/the-life-of-the-dead-is-placed-in-the-memory-of-the-living-marcus-t-cicero>.

otherwise would be required to be buried at public expense.<sup>104</sup> In many jurisdictions, the unclaimed deceased become the property of the state, and the bodies are transferred to state-based medical schools to serve as cadavers for dissection and anatomy training.<sup>105</sup> States that provide the transfer of the unclaimed deceased to medical schools follow the model of the English Anatomy Act of 1832, which provided medical schools with a steady supply of cadavers for educational purposes.<sup>106</sup> When no family appeared to claim a corpse, the state, acting as the medical school's agent, took legal possession of the unclaimed corpse, as with abandoned property.<sup>107</sup> The Anatomy Act served two main purposes for the state: first, it relieved the state of the burden of determining the cadaver's religious preferences and of paying for a burial, and second, it allowed the state to censure the (at that time) common practice of grave robbing by increasing the legal supply of corpses to the schools.<sup>108</sup>

By the mid-nineteenth century, all reputable medical schools required students to complete a course in anatomy and, as enrollment increased, the demand for cadavers rose concurrently.<sup>109</sup> The supply of legally available bodies, those of executed criminals only, proved inadequate to meet the increasing demand of medical students.<sup>110</sup> Eventually, both doctors and medical students resorted to disinterring bodies or hiring professional grave robbers.<sup>111</sup> The impossibility of obtaining enough cadavers legally made legislative action inevitable, and by the early 1900s, nearly all dissected cadavers were unclaimed bodies made available to medical schools through state statutes.<sup>112</sup> Since World War II, however, increasing numbers of cadavers have come from personal donations, and today, donations are virtually the sole source of America's cadaver supply.<sup>113</sup> The practice of using unclaimed bodies for medical education still exists in a number of countries, at least as an

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<sup>104</sup> Bojan V. Stimec, Marija Draskic, Jean H. D. Fasel, *Cadaver procurement for anatomy teaching: legislative challenges in a transition-related environment*, 50 MED. SCI. LAW 45, 49 (2010).

<sup>105</sup> Mary L. Clark, Note, *Keep Your Hands Off My (Dead) Body: A Critique of the Ways in Which the State Disrupts the Personhood Interests of the Deceased and His or Her Kin in Disposing of the Dead and Assigning Identity in Death*, 58 RUTGERS L. REV. 19 (2005).

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

<sup>109</sup> Ann Garment, Susan Lederer, Naomi Rogers, Lisa Boulton, *Let the Dead Teach the Living: The Rise of Body Bequeathal in 20<sup>th</sup>-Century America*, 82 ACAD. MED. 1000, 1001 (2007).

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Id.* at 1000.

<sup>113</sup> *Id.*

additional source of whole body procurement, and has been based on the “presumed consent” system; this system presumes that the decedent has consented to the harvest of his or her organs unless an objection to such a harvest has been recorded.<sup>114</sup>

### B. *Unclaimed Dead in the State of Florida*

The Anatomical Board is the organization in Florida to which people may donate their bodies.<sup>115</sup> There are three offices: the main office is located at the University of Florida College of Medicine, a second branch is located at the University of Miami Miller School of Medicine, and the third branch is at the University of Central Florida College of Medicine.<sup>116</sup> The Anatomical Board’s mission is to supply anatomical materials for teaching and research programs in the State of Florida.<sup>117</sup> The program “provides donated bodies for the training of physicians, dentists, physician assistants, and other health workers, and supports research and continued and advanced training programs for physicians.”<sup>118</sup>

Florida Statute §406.50(1), titled *Unclaimed remains; disposition, procedure*, states that a person or entity that comes into possession of unclaimed remains that are required to be buried or cremated at public expense shall immediately notify the Anatomical Board.<sup>119</sup> Notification is not required if the unclaimed remains are decomposed, mutilated by wounds, or contain a contagious disease, an autopsy was performed on the remains, a legally authorized person objects to use of the remains for medical education or research, or the deceased person was a veteran eligible for burial in a national cemetery.<sup>120</sup>

Statute 406.50(2) requires that, prior to the final disposition of unclaimed remains, the person or entity in charge or in control of the remains makes a reasonable effort to determine the identity of the deceased person, to contact any relatives of the deceased person, or to determine whether the deceased person is eligible under 38 C.F.R. §38.620 for burial in a national cemetery as a veteran of the armed

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<sup>114</sup> Bojan V. Stimec, Marija Draskic, Jean H. D. Fasel, *Cadaver procurement for anatomy teaching: legislative challenges in a transition-related environment*, 50 MED. SCI. LAW 45, 49 (2010)

<sup>115</sup> Anatomical Board of the State of Florida, <http://old.med.ufl.edu/anatbd>.

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

forces.<sup>121</sup> Once a deceased body is deemed acceptable for the Anatomical Board, statute 406.50(3) requires that unclaimed remains be delivered to the Anatomical Board as soon as possible after death.<sup>122</sup> When no family exists or is available, a licensed funeral director may assume the responsibility of a legally authorized person and may, after twenty-four hours have elapsed since the time of death, authorize arterial embalming for the purposes of storage and delivery of unclaimed remains to the Anatomical Board.<sup>123</sup> Section 406.50(4) forbids the remains of a deceased person whose identity is not known from being cremated, donated as an anatomical gift, buried at sea, or removed from the state.<sup>124</sup> Per §406.50(5), if the Anatomical Board does not accept the unclaimed remains, the board of county commissioners or its designated department of the county in which the death occurred or the remains were found may authorize and arrange for the burial or cremation of the entire unclaimed remains.<sup>125</sup>

### C. *Unclaimed Dead in the State of California*

In California, the State Department promulgates laws about the unclaimed dead for scientific or educational purposes.<sup>126</sup> After due diligence,<sup>127</sup> California Health and Safety Codes require that the unclaimed dead retained by the State department for scientific or educational purposes be embalmed and disposed of in accordance with the instructions of the State department, and be held for a period of thirty days by those to whom they may have been assigned for scientific or educational purposes, subject to claim and identification by any authenticated relative of the decedent for purpose of interment or other disposition in accordance with the directions of such relative.<sup>128</sup> California Health and Safety Code 7203 specifies that bodies of the unclaimed dead retained by the State department must only be used for the purpose of instruction and study in the promotion of medical, chiropractic, and embalming education and science within the State.<sup>129</sup>

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<sup>121</sup> Medical Examiners; Disposition of Human Remains, §406.50(2) Fla. Stat. (2014); Persons Eligible for Burial, 38 C.F.R. §38.620.

<sup>122</sup> Medical Examiners; Disposition of Human Remains, §406.50(3) Fla. Stat. (2014).

<sup>123</sup> Medical Examiners; Disposition of Human Remains, §406.50(3) Fla. Stat. (2014).

<sup>124</sup> Medical Examiners; Disposition of Human Remains, §406.50(4) Fla. Stat. (2014).

<sup>125</sup> Medical Examiners; Disposition of Human Remains, §406.50(5) Fla. Stat. (2014).

<sup>126</sup> See California Health and Safety Code Section 7200-7208, <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=07001-08000&file=7200-7208>.

<sup>127</sup> See Cal. Health & Safety Code § 7200 (2014).

<sup>128</sup> Cal. Health & Safety Code § 7202 (2014).

<sup>129</sup> Cal. Health & Safety Code § 7203 (2014).

California Code also requires that all entities receiving unclaimed dead for educational purposes bear reasonable expenses incurred in the preservation and transportation of the dead, and that these entities must retain a permanent record of bodies received.<sup>130</sup>

Unlike Florida Statutes, California Health and Safety Codes that regulate the unclaimed dead include requirements for the use of the unclaimed dead in scientific and medical education. This provides clear and transparent guidelines for universities, allowing the LAC + USC and the NTTC to provide advanced education to surgical residents, fellows, and the U.S. Navy.

## V. THE ULTIMATE GIFT: TEACHING LIFE AFTER DEATH

*How far that little candle throws his beams! So shines a good deed in a naughty world.*

- William Shakespeare<sup>131</sup>

### A. *Protecting the Deceased and Donations*

The National Conference of Commissioners on Uniform State Laws (NCCUSL) promulgated the Uniform Anatomical Gift Act (2006) to further improve the system for allocating organs to transplant recipients.<sup>132</sup> The original Uniform Anatomical Gift Act (UAGA), promulgated in 1968, was promptly and uniformly enacted in every jurisdiction, and it created the power to donate an immediate anatomical gift, which was not yet recognized at common law.<sup>133</sup> In 1987, NCCUSL revised the 1968 UAGA to address changes in circumstances and in practice, but only twenty-six states enacted the 1987 UAGA, resulting in non-uniformity between those states and the states that retained the 1968 version.<sup>134</sup> The 1987 UAGA governs the donation of anatomical specimens in the U.S. for education, research, transplant, and therapy, and is modified by each state.<sup>135</sup> It does not, though, comment

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<sup>130</sup> Cal. Health & Safety Code § 7204 (2014).

<sup>131</sup> William Shakespeare, *Merchant of Venice*, Act 5, Scene 1, Page 5 (1600)

<sup>132</sup> Uniform Law Commission, The National Conference of Commissioners on Uniform State Laws, [http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+\(2006\)](http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+(2006)).

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> Brani Schmitt, Charlotte Wacker, Lisa Ikemoto, Frederick J. Meyers, Claire Pomeroy, *A Transparent Oversight Policy for Human Anatomical Specimen*

on the components vital to successfully fulfilling academic missions and mitigating risk at an academic health center where cadavers are used.<sup>136</sup> To prevent, mitigate, and control the risks inherent to these complex and vitally important resources, it is of utmost importance to have policies in place with regard to human anatomical specimens.<sup>137</sup> The UAGA makes it a felony to “knowingly, for valuable consideration, purchase or sell a [body] part for transplantation or therapy, if removal of the part is intended to occur after the death of the decedent,” but excludes from this consideration “the reasonable payment [by the healthcare areas] for the removal, processing, disposal, preservation, quality control, storage, transportation, or implantation of a part,” allowing operators to procure and supply body parts for these purposes.<sup>138</sup> Additionally, the purchase or sale of whole bodies or body parts for purposes other than transplantation or therapy (such as education) are absent from this provision.<sup>139</sup>

Changes in each state have resulted in less uniformity, as neither the 1968 nor the 1987 UAGA recognizes the system of organ procurement that has developed partly under federal law, and the 2006 UAGA aims to resolve these inconsistencies.<sup>140</sup> The 2006 UAGA creates a more transparent environment and greater opportunity for the donation of one’s body for medical education. However, Florida is one of three states not to adopt it. The 2006 UAGA improves donations of bodies and provides for cooperation and coordination between procurement organizations and medical examiners, particularly with regard to procurement from potential donors under the jurisdiction of the medical examiner.

The current mechanism for donating organs is a document of gift that an individual executes before death; the 2006 Act further simplifies this document and accommodates the forms commonly found on the backs of driver’s licenses in the U.S.<sup>141</sup> First-person consent, which allows an individual’s anatomical gift to take effect at death, is strengthened to prevent others from amending a refusal or revoking a gift made by the

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*Management: The University of California, Davis Experience*, 89 ACAD. MED. 410, 414 (2014)

<sup>136</sup> *Id.*

<sup>137</sup> *Id.*

<sup>138</sup> Michel Anteby, Mikell Hyman, *Entrepreneurial Ventures and Whole-Body Donations: A Regional Perspective from the United States*, 68 SOC. SCI. MED. 963, 964 (2008)

<sup>139</sup> *Id.*

<sup>140</sup> Uniform Law Commission, The National Conference of Commissioners on Uniform State Laws, [http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+\(2006\)](http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+(2006)).

<sup>141</sup> *Id.*

donor.<sup>142</sup> Without first-person consent, gifts by family and certain individuals are facilitated if the deceased has not acted to make or refuse to make an anatomical gift.<sup>143</sup> The donor must be incapacitated and the permission giver has to be the individual in charge of making health-care decisions during the donor's life.<sup>144</sup> If more than one member of a class is reasonably available, the donation is made only if a majority of members support the donation.<sup>145</sup> Minors, if eligible under other law to apply for a driver's license, are empowered to be a donor.<sup>146</sup>

The 2006 UAGA strengthens the language regarding the finality of a donor's anatomical gift; there is no reason to seek consent from the donor's family because the family has no legal right to revoke the gift.<sup>147</sup> This relieves procurement organizations from seeking affirmation when the non-minor donor has clearly made a gift, and prevents unnecessary delays in procuring organs and the occasional reversal of the donor's wishes.<sup>148</sup> The 2006 UAGA also clarifies and expands rules relating to cooperation and coordination between procurement organizations and coroners/medical examiners.<sup>149</sup> Unlike prior law, the 2006 UAGA prohibits coroners and medical examiners from making anatomical gifts except in the rare instance when the coroner or medical examiner is the person with the authority to dispose of the decedent's body.<sup>150</sup> The 2006 UAGA addresses widely reported abuses—aimed to obtain a financial gain by selling a decedent's parts to a research institution—involving the intentional falsification of a document of gift or refusal.<sup>151</sup> A person who falsifies a document of gift for such a purpose is guilty of a felony. Alternatively, the 2006 UAGA provides that a person is not liable for his or her actions in a civil action, criminal prosecution or administrative proceeding if s/he acted—or attempted to act—in good faith in accordance with the UAGA or with the applicable anatomical gift law of another state.<sup>152</sup>

The 2006 UAGA also implements repeal of prior versions of the UAGA, as it is important and desirable that core provisions of the act be

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<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

<sup>146</sup> Uniform Law Commission, The National Conference of Commissioners on Uniform State Laws, [http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+\(2006\)](http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+(2006)).

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> Uniform Law Commission, The National Conference of Commissioners on Uniform State Laws, [http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+\(2006\)](http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+(2006)).

uniform among the states.<sup>153</sup> Little time is available to prepare, transport across state lines, and transplant tissues or life-saving organs, and the time that it takes to assess and comply with variations in state law delay this process significantly.<sup>154</sup> Many states have related laws on anatomical gifts, and the 2006 UAGA allows the retention of these laws if they improve awareness and transparency.<sup>155</sup>

### *B. Willed Body Programs*

In most cases, donors and families that participate in Willed Body programs are told that their bodies will be used to educate medical students, to provide materials for patients, or to promote research on human disease.<sup>156</sup> In the past ten years, news reports have indicated that some body tissues that are donated are subsequently sold to nonprofit or for-profit organizations without the knowledge or detailed informed consent of the donors.<sup>157</sup> This negative publicity has raised concern about the future availability of donated bodies.<sup>158</sup>

There is no one solution that will ensure an adequate supply of human cadavers for medical science. An interesting dynamic can be observed in Maryland, where the Air Force C-STARS program is located. The State Anatomy Board, housed at the University of Maryland, has been the dominant historical supplier of cadavers in Maryland,<sup>159</sup> and their official goal is to supply the cadaveric needs of in-state medical institutions.<sup>160</sup> The State Board of Anatomy does not advertise and relies on word-of-mouth to secure donations.<sup>161</sup> However, a newer—active since 2002—-independent entrepreneurial venture, Anatomy Gifts Registry (AGR), supplies both in-state and out-of-state health care areas.<sup>162</sup> AGR staff encourage pre-registration and visit hospital chaplains and retirement homes to advertise their services.<sup>163</sup>

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<sup>153</sup> *Id.*

<sup>154</sup> Uniform Law Commission, The National Conference of Commissioners on Uniform State Laws, [http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+\(2006\)](http://uniformlaws.org/Act.aspx?title=Anatomical+Gift+Act+(2006)).

<sup>155</sup> *Id.*

<sup>156</sup> Thomas H. Champney, *A Proposal for a Policy on the Ethical Care and Use of Cadavers and Their Tissues*, 4 ANAT. SCI. EDUC. 49, 49 (2011)

<sup>157</sup> *Id.*

<sup>158</sup> *Id.*

<sup>159</sup> Michel Anteby, Mikell Hyman, *Entrepreneurial Ventures and Whole-Body Donations: A Regional Perspective from the United States*, 68 SOC. SCI. MED. 963, 966-967 (2008).

<sup>160</sup> *Id.*

<sup>161</sup> *Id.*

<sup>162</sup> *Id.*

<sup>163</sup> *Id.*

While both programs offer comparable levels of material help and financial support to ease the donation process—e.g., covering transportation and cremation costs—the process of voluntary donation at these programs, analyzed by a 2008 study, differs.<sup>164</sup> Ninety-one percent of donors to the State Board of Anatomy, based on their own volition, had registered as donors before death.<sup>165</sup> On the other hand, at AGR, over half the time legally authorized agents approved donation upon death, and unlike the State Board of Anatomy, AGR also procured out-of-state cadavers.<sup>166</sup>

Academic-housed programs' reluctance to let legally authorized agents donate in the absence of a donor's pre-registration may make it easier for entrepreneurial ventures to secure donations.<sup>167</sup> Entrepreneurial ventures also may increase the supply by accepting donations less appealing to the academic-housed program.<sup>168</sup> Variations in donors' profiles suggest contrasted procurement strategies: academic-housed programs seem to target seemingly healthy individuals, and entrepreneurial tend to focus on diseased individuals and their families.<sup>169</sup> This calls attention to the need to ensure that all donating parties are treated with due respect.<sup>170</sup>

A greater availability of cadavers for medical science would improve the quality of medical training and procedures.<sup>171</sup> Much of the debate on increasing the supply of cadavers, and more broadly of anatomical donations, has focused on supply, or how to convince potential donors to donate.<sup>172</sup> However, it seems organizations might deploy their efforts differently to meet the unique demands of their specimen recipients.<sup>173</sup> As seen here, when large demands go unmet, opportunities for the deployment of organizational efforts to meet these demands thrive.<sup>174</sup>

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<sup>164</sup> *Id.*

<sup>165</sup> *Id.*

<sup>166</sup> Michel Anteby, Mikell Hyman, *Entrepreneurial Ventures and Whole-Body Donations: A Regional Perspective from the United States*, 68 SOC. SCI. MED. 963, 966-967 (2008).

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

<sup>169</sup> *Id.*

<sup>170</sup> *Id.*

<sup>171</sup> *Id.*

<sup>172</sup> Michel Anteby, Mikell Hyman, *Entrepreneurial Ventures and Whole-Body Donations: A Regional Perspective from the United States*, 68 SOC. SCI. MED. 963, 966-967 (2008).

<sup>173</sup> *Id.*

<sup>174</sup> *Id.*

## VI. PROPOSED LEGISLATIVE CHANGES

*Change is the law of life. And those who look only to the past or present are certain to miss the future.*

*-John F. Kennedy<sup>175</sup>*

### A. State Recommendations

The ideal training scenario for the ATTC would include an increase in army surgical education opportunities through anatomical gifts in the State of Florida. This increase in donations would be accomplished by the preservation of ethical considerations, including greater uniformity, improved transparency, and expanded and clarified consent procedures.

#### 1. Uniformity Under the 2006 UAGA

The anatomical gift law is no longer uniform due to states enacting different versions of the law, and diversity of this law is an impediment. Uniform law through every state's enactment of the 2006 UAGA will help save and improve lives, and should be enacted in every state as quickly as possible. The State of Florida retains the earliest version of the UAGA from 1968, and therefore should enact the 2006 UAGA as soon as possible. If we will not use unclaimed bodies, then we must encourage donation, and the 2006 UAGA is strongly supported by many procurement organizations because it will improve anatomical gift law in the states, thereby encouraging donations that save and improve lives.<sup>176</sup>

If no preference is available by the deceased, the 2006 UAGA expands consent options, providing more opportunities for donation than currently exist today.<sup>177</sup> The UAGA prevents revoking of an anatomical gift from family;<sup>178</sup> revoking of a gift is unethical and against the will of the deceased, and the 2006 UAGA acknowledges that the decision to donate organs, tissues and eyes is highly personal and deserves respect from the law.<sup>179</sup> If an anatomical gift is revoked by family, and an organ donation or Willed Body program chooses to honor the deceased's wish

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<sup>175</sup> John F. Kennedy, Presidential Library and Museum, <http://www.jfklibrary.org/Research/Research-Aids/Ready-Reference/JFK-Quotations.aspx>.

<sup>176</sup> Uniform Law Commission, Why States Should Adopt UAGA, <http://www.uniformlaws.org/Narrative.aspx?title=Why%20States%20Should%20Adopt%20UAGA>

<sup>177</sup> *Id.*

<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

to donate, this creates bad publicity for these organ donation and willed-body programs. Greater transparency, clarity, and documentation will allow for more ethical practice as well as more lives saved by means of anatomical gifts.

The adoption of the 2006 UAGA can also create more opportunities for non-profit academic-housed programs, preventing entrepreneurs from capitalizing in areas where academic-housed programs are more tentative because of ethical considerations. If these entrepreneurial programs do continue to flourish, the 2006 UAGA would require them to do so under ethical guidelines and more uniform, transparent practice.

## 2. Anatomical Donations

In addition to creating greater transparency through the adoption of the 2006 UAGA, improved transparency by the State of Florida's main Anatomical Board may encourage an increase in anatomical gifts. In today's technologically advanced era, to create an environment where anatomical gift donations are supported, The State of Florida's main Anatomical Board should be required to provide potential donors with easily accessible information answering any and all questions about anatomical gifts. The State of Florida's main Anatomical Board does not describe who will learn from these gifts or why anatomical gifts are vital for medical education, nor are they required.<sup>180</sup> For example, in a more extensive question and answer section, Maryland's Anatomical Board explains that it will provide donated bodies to support research and educational study programs at medical and dental schools, resident teaching programs, and other related health programs.<sup>181</sup>

Willed Body programs associated with Florida universities do not provide the ATTC with cadavers. These anatomical gifts are needed for university medical education or are arterially embalmed, rendering them unsuitable for surgical education. An increase in donations accomplished through the adoption of the 2006 UAGA and increased transparency by the State of Florida could create an environment allowing cadavers to be provided to the ATTC, embalmed in a manner that works for surgical education.

## 3. Unclaimed Bodies

Improved transparency may also enable access to unclaimed remains for purposes of surgical education. To provide this necessary

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<sup>180</sup> Anatomical Board of the State of Florida, <http://old.med.ufl.edu/anatbd>.

<sup>181</sup> Department of Health and Mental Hygiene, Frequently Asked Questions, <http://dhmh.maryland.gov/anatomy/SitePages/faqs.aspx>. See also MD. HEALTH-GENERAL Code Ann. § 5-401; § 5-406; § 5-407.

transparency, the State of Florida should amend statute 406.50<sup>182</sup> and require the main Anatomical Board at the University of Florida College of Medicine to publish their procedures regarding the use of the unclaimed deceased.

Compared to California, where the NTTC trains, the use of unclaimed bodies for education in Florida is more problematic due to legislative ambiguities and a lack of uniformity. For this reason few unclaimed cadavers are used for medical education in Florida; the bulk of cadavers come from donations.<sup>183</sup> Once a body is declared unclaimed in Florida, which can take several weeks or more depending on the applicable county code or ordinance, it is often too decomposed to be used for educational purposes. Florida's Anatomical Board is concerned that in certain counties, even two years after a body has been declared legally unclaimed a family member can attempt to declare the body claimed.<sup>184</sup> In the past, courts have been sympathetic towards family members, even though they had ample time to request their family member in order to provide a funeral service, and this creates negative publicity for the State Anatomical Board.<sup>185</sup> Educational advances are being hindered due to a lack of coherence with regards to these laws. Uniformity is needed amongst counties—the county disposes of these unclaimed bodies at the state's expense—and this uniformity would allow the Anatomical Board to create a procedure for the use of these unclaimed cadavers. Additionally, Florida statutes must be clarified to prevent unnecessary lawsuits after the period in which a body can be declared unclaimed.

Equally important, the State should not limit the use of these cadavers for other surgical medical institutions by allowing only the unclaimed deceased to be arterially embalmed by a funeral director, as arterial embalming limits the ability to embalm a cadaver in other ways.<sup>186</sup> The focus in anatomical embalming, unlike that for funerals, is on long-lasting preservation of tissues rather than the maintenance of physical appearance.<sup>187</sup> Different combinations of chemicals are used as preservatives (to retain the structure of tissue), disinfectants (to halt

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<sup>182</sup> See Medical Examiners; Disposition of Human Remains, §406.50 Fla. Stat. (2014).

<sup>183</sup> See Bodies at work, [http://www.sptimes.com/2002/09/20/news\\_pf/Floridian/Bodies\\_at\\_work.shtml](http://www.sptimes.com/2002/09/20/news_pf/Floridian/Bodies_at_work.shtml).

<sup>184</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>185</sup> *Id.*

<sup>186</sup> Roos Eisma, Tracey Wilkinson, *From "Silent Teachers" to Models*, 12 PLoS Biol, <http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1001971>.

<sup>187</sup> *Id.*

decomposition), buffers, wetting agents, or dyes.<sup>188</sup> Both embalmed cadavers and fresh-frozen tissue are used in education, training, and research.<sup>189</sup> Arterially embalmed bodies have the advantage of carrying minimal risk of infection and being suitable for prolonged use, but depending on the type of embalming, changes in mobility, color, or tissue handling may occur. Fresh-frozen bodies tend to be more realistic and flexible, but their disadvantages include the short period available before deterioration, the possibility of inadequate thawing, and, if separated body parts are used, the need for these to be clamped in place for the surgical procedure.<sup>190</sup>

In general, stiff but durable arterially embalmed cadavers are used for long-lasting dissection courses, typically completed by medical students, while flexible but short-term fresh-frozen cadavers are used for surgical training.<sup>191</sup> The ATTC currently uses light arterially embalmed cadavers—allowing benefits of both arterially embalmed and frozen.<sup>192</sup> However, the cost of these cadavers prevents the adoption of a course like that of the NTTC. Florida statutes have been changed in the past to allow flexibility for different types of preservation,<sup>193</sup> and Florida statute 406.50<sup>194</sup> should again be modified to allow other qualified entities to assume the responsibility of a legally authorized person, including licensed embalmers at Willd Body programs at universities throughout the state. This change would allow proper and flexible embalming for both surgical education and medical education. California's code,<sup>195</sup> both more specific and more flexible than Florida's statute, does not mandate "arterial" embalming, allowing greater flexibility for the means of preservation and creating less bias towards funeral home directors.

The result of current Florida legislation is a loss of advanced training opportunities for U.S. Army surgeons, which leads to potentially less prepared surgeons deploying in support of Army combat units when soldiers, commanders, and families of soldiers expect and deserve the highest level of care available. If unclaimed cadavers become available

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<sup>188</sup> *Id.*

<sup>189</sup> *Id.*

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*

<sup>192</sup> Interview with George D. Garcia, MD, LTC(R), Director, U.S. Army Trauma Training Center 2009-2012, in Miami, Florida.

<sup>193</sup> Florida Attorney General Advisory Legal Opinion, Number AGO 91-87, <http://www.myfloridalegal.com/ago.nsf/printview/55405273684269A7852562B50068F63C>.

<sup>194</sup> See Medical Examiners; Disposition of Human Remains, §406.50 Fla. Stat. (2014).

<sup>195</sup> See California Health and Safety Code Section 7200-7208, <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=07001-08000&file=7200-7208>.

through improved legislation, and laws regarding embalming requirements are made more flexible, this could create significantly more surgical education opportunities for the ATTC and civilian surgical residents and fellows training in Florida.

### *B. Federal Recommendation*

The Supremacy Clause, Article 6, Clause 2 of the United States Constitution establishes the United States Constitution, federal statutes, and treaties as “the supreme law of the land.”<sup>196</sup> Article 1, Section 8, Clause 12 of the Constitution grants Congress the power to “raise and support armies, but no appropriation of money to that use shall be for a longer term than two years.”<sup>197</sup> Congress has the power to make all laws that are “necessary and proper” for the powers granted to Congress elsewhere in the Constitution.<sup>198</sup>

Should proposed legislative changes be precluded at the state level, the Supremacy Clause should allow for military access to the unclaimed dead, as is practiced in California. Army programs and service-training centers like the ATTC should receive cadavers at a lower cost, and the passage of a congressional law would override state prohibitions preventing usage of these cadavers for medical education. Because the State of Florida does not use the unclaimed dead for medical education, the passage of a congressional law clarifying and improving these procedures and allowing for embalment and preservation flexibility, could help save military lives.

## VII. CONCLUSION

*It is foolish and wrong to mourn the men who died. Rather we should thank God that such men lived.*

*-George S. Patton*

Given the current duty-hour restrictions that general surgery residency programs are forced to comply with and the resultant

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<sup>196</sup> Cornell University Law School, U.S. Constitution, Article VI, <https://www.law.cornell.edu/constitution/articlevi>

<sup>197</sup> The Heritage Guide to The Constitution, Army Clause, <http://www.heritage.org/constitution/#!/articles/1/essays/52/army-clause>

<sup>198</sup> The Heritage Guide to The Constitution, Necessary and Proper Clause, <http://www.heritage.org/constitution/#!/articles/1/essays/59/necessary-and-proper-clause>

decrement in training of surgical residents, it is no surprise that experience in managing severely injured patients has decreased over time. Surgical training in the Army mirrors civilian training and is subject to the same restrictions. Most civilian trainees will, upon graduating their training programs, choose a career that will not involve care of the injured patient, if they so wish.

In contradistinction, however, the *sine qua non* of military surgery is the care of the combat injured. One could argue that the only reason for the Army to employ surgeons is to deploy them to combat. It is for this reason that the Army surgeon should be afforded every training opportunity available, even if only in the pre-deployment phase, to remain facile in the care of the injured patient. The establishment of the ATTC at the Ryder Trauma Center in Miami, one of the busiest trauma centers in the United States, was an excellent and necessary step. The addition of the ASSET course was another crucial step in preparing surgeons for war. Now, another training opportunity has presented itself in the form of the pressurized cadaver, simulating as closely as possible operating on an actual bleeding patient.

This training is already underway at the NTTC and allows surgeons, both military and civilian, regular exposure to uncommon but devastating injuries. Every minute saved in deciding what surgical approach to use or what technique to employ may mean the difference between life and death. Military and civilian surgeons, training in collaboration, will export these differences to their patients, whether it is on a battlefield halfway across the world or within our own communities. This training is possible at the NTTC because California allows the use of unclaimed cadavers for medical training, a practice not currently employed in Florida.

If the requirements for declaring individuals unclaimed are unified throughout the State, and the unclaimed dead are preserved in a manner that allows for surgical education, more advanced training may be offered to both army and Florida surgeons. As a former Army surgeon and director of the ATTC,<sup>199</sup> the State of Florida Surgeon General, John H. Armstrong, MD, FACS, should understand the need for this type of training, and hopefully will lend support to facilitate improvements in handling of cadavers to make them more available for both military and civilian surgeons. The goal is not to offend those who have lost their lives, or to disregard the value of those lives, but to transform the loss of a human into the opportunity to save future lives, so that those who incur

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<sup>199</sup> Florida's State Surgeon General, <http://www.floridahealth.gov/about-the-department-of-health/about-us/ssg/index.html>.

injuries today that are considered “non-survivable,” may one day have the opportunity to survive.<sup>200</sup>



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<sup>200</sup> Wojciech Pawlina, Rachel R. Hammer, Jeffrey D. Strauss, Shaun G. Heath, Kristin D. Zhao, Shawn Sahota, Terry D. Regnier, Dawn R. Freshwater, Mary A. Feeley, *That Hand That Gives the Rose*, 86 *MAYO CLIN. PROC.* 139, (2011).