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Military plastic surgeons balance duty to patients and country

BY KEITH LORIA

Many battlefield injuries that would have been lethal a decade ago are today treatable due to a combination of innovations in body armor, combat-zone care and casualty evacuation systems. As a result, military plastic surgeons (and others) are often called on to adapt surgical treatment algorithms in order to accommodate the large number of devastating combat injuries and perform extremely complex and comprehensive reconstructive procedures.

The work can be grueling, emotionally draining and incredibly rewarding, according to the ASPS Active Military members interviewed for this article. But they're also quick to point out that not everything they do is war-related. Military plastic surgeons also often treat the same conditions that a civilian plastic surgeon sees in practice, while always remaining ready to deploy to another part of the world where their skills are in need.

"Military plastic surgeons serve the active duty members of the military and their dependents, but we also treat patients under TRICARE (the U.S. Armed Forces healthcare program that provides coverage for military personnel, retirees and their dependents)," says Navy Lt. Cmdr. Patrick Basile, MD, a plastic surgeon at the Walter Reed National Military Medical Center in Bethesda, Md. "We do everything a civilian plastic surgeon does and handle wounded warrior care during war time."

"The mission for all of the uniformed medical corps is primarily to conserve the fighting strength of our armed forces both during times of war and of peace," says U.S. Army Col. Barry Martin, MD, chief of Plastic Surgery at Walter Reed. "The skill sets and medical training of military plastic surgeons don't differ significantly from our civilian counterparts, but our intimate knowledge of the responsibility of our war-fighters, and our sensitivity to its impact on their families, make us uniquely qualified to support them.

"Military plastic surgeons operate across all the echelons of care, from stateside medical centers to combat support hospitals

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BREAKING NEWS

PRS Global Open signs contract with PubMed Central for indexing

The open-access plastic surgery journal *PRS Global Open* was notified on Sept. 16 that it had been extended a full participation agreement for indexing with PubMed Central, the online search engine maintained by the U.S. National Library of Medicine at the NIH. "This approval marks a significant milestone in the continued development of our open-access initiative," says Rod Rohrich, MD, editor-in-chief of both *PRS* and *PRS Global Open*. "It validates the quality of the articles being published in *PRS Global Open* from around the world and expands its reach through the surgeon-scientist community." PubMed Central is currently in the process of delving into the *PRS Global Open* archive to prepare and post its content on the PubMed Central website. To access *PRS Global Open*, visit *prsgo.com* or download the journal's free iPad app. PSN

Ross H. Musgrave, MD, 1975 ASPS president, passes away at age 93

Ross H. Musgrave, MD, died Friday, Sept. 12, in Plum, Penn., at age 93. Dr. Musgrave led the then-ASPRS in 1975, and he also served as American Cleft Lip and Palate and Craniofacial Association president; ABPS trustee; ACS governor; and University of Pittsburgh Medical Alumni governor. Dr. Musgrave is credited with advances in maxillocraniofacial surgery, as well as taking the lead on developing media training for plastic surgeons. Dr. Musgrave is survived by his wife, Norma Jane Duncan Musgrave; his brother, Don Musgrave; two daughters; a son; four grandchildren; and two great-grandchildren. PSN

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Military plastic surgeons

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located in regions of conflict," he adds. "Our scope of practice runs the gamut of reconstructive surgery with a lesser emphasis on aesthetic procedures and operations."

Over the years, Dr. Basile and his partners have seen all echelons of casualty care – from in-theater treatment to hospital care – when someone gets hurt on the battlefield, and he admits that dealing with these injuries day-in and day-out can be emotionally draining.

"When the war [in Iraq and Afghanistan] was at its worst, the volume coming in was incredible," he says. "We were doing many surgeries a day for long periods of time, and the challenge was maintain our resources to provide a high level of care. There are also emotional challenges because of the constant exposure to these very young Americans coming back gravely injured and seeing how it would affect the rest of their lives. It can really weigh on you. It's not normal to see this every day."

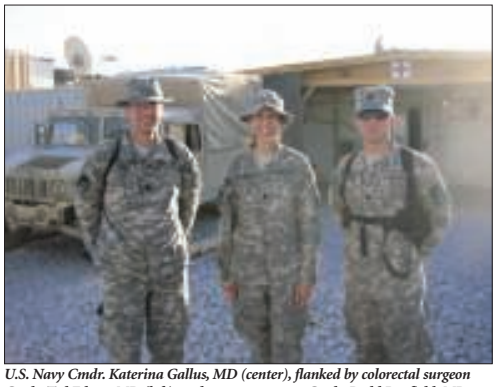
"The signature wound of modern conflicts has become the war-fighter with multiple extremity injuries due to improvised explosive devices (IED)," Dr. Martin adds. "Consequently, complex limb salvage operations, which often require a combination of microsurgical free-tissue transfer, locoregional flaps and wound care, are all too common in my current practice. The added challenges of limited flap donor sites and expansive zones of injury require persistent creativity."

Adding to already complex surgical problems, Dr. Basile says, is that the enemy uses IEDs packed with not only shrapnel but also biological materials which, when blasted into the wounds, can take weeks to wash out.

"Initially, when we saw these wounds, we would wash them out and start the reconstruction process, but what we saw weeks later were these small latent infections," he says. "It was a paradigm change we had to come up with a solution for."

U.S. Navy Cmdr. Katerina Gallus, MD, chair of the Department of Plastic Surgery at the Naval Medical Center in San Diego, says that she performs a wide range of reconstructive procedures as well as a limited amount of aesthetic procedures, similar to many civilian plastic surgery practices. She most commonly performs breast reconstruction and breast reduction, but her work in the facility's limb preservation clinic brings challenges unique to military plastic surgery.

"In one case, a patient sustained devastating blast injuries from a suicide bomber that required bilateral free-tissue transfers to his lower extremities," she says. "He had suffered popliteal injuries that had been bypassed, and I had to create A-V loops to the more proximal SFA in order to complete the anastomosis. This all occurred shortly in the setting of anticoagulation for a significant pulmonary embolus. Although a filter was placed, we could not rule out an upper extremity-related blast injury as a source of the PE and had to maintain anticoagulation throughout the reconstructions. He has done remarkably well and today is a strong advocate for other wounded warriors."



U.S. Navy Cmdr. Katerina Gallus, MD (center), flanked by colorectal surgeon Cmdr. Ted Edson, MD (left), and trauma surgeon Cmdr. Rodd Benfield, MD, at a forward operating base in Afghanistan.

This past summer, ASPS Military Candidate for Active Lt. Col. Demetrio Aguila III, MD, Norfolk, Neb., completed 20 years in the Air Force. At the beginning of his military career, he served as a combat flight doctor, often deployed for 10 months out of the year. He completed a residency in ENT, but he was then convinced to pursue plastic surgery by a plastic surgeon with whom he worked alongside in Afghanistan.

"Most military plastic surgeons spend a vast majority of our time doing reconstructive surgeries," he says. "When I was deployed, I did a lot of burn reconstructions, I was fixing a lot of facial fractures, and I was performing tracheal reconstruction. Back home, I was doing a lot of hand surgeries, breast reconstruction and limb salvage."

He had his share of working on those suffering from blast injuries as well, and he has operated while people were shooting nearby and, in one case, on someone who had an unexploded IED in his chest.

"These men that I flew with and went to go help put themselves in harm's way, and put their lives on the line, so all of us back home can have the opportunities we have," Dr. Aguila says. "For me, it's been a privilege to say 'thank you' to all those men who sacrificed themselves in the interest of freedom."

The faces of military plastic surgery

ASPS Active Military members (clockwise from top, left): U.S. Army Col. Barry Martin, MD; U.S. Air Force Maj. Elizabeth Tran, MD; U.S. Navy Lt. Cmdr. Patrick Basile, MD; U.S. Navy Cmdr. Katerina Gallus, MD; U.S. Navy Reserve Cmdr. Elan Singer, MD; and Air Force Lt. Col. Demetrio Aguila III, MD (ASPS Candidate for Membership)

An officer and a surgeon

Both military and civilian plastic surgery require a regimented lifestyle. There are a number of added expectations that come with being a doctor in the armed forces – from being as skilled with a rifle as a scalpel, navigating both terrain and anatomy, and serving both patients and the country. The job requires an added level of commitment and selflessness.

"I can't just be a good plastic surgeon, I have to be a steward for the Air Force and have secondary responsibilities related to that," says Maj. Elizabeth Tran, MD, who serves with the 88th Air Base Wing at Wright-Patterson Air Force Base outside of Dayton, Ohio. "It's not just about me being ready to do my job – even in a war-time mission, I need to teach others in the hospital to be ready."

The 20-year Air Force vet started in an F-16 fighter squadron before medical school at Tulane University in New Orleans, where her exposure to plastic surgeons inspired her to pursue the specialty. Today, her niche is breast surgery – reconstruction for cancer patients and breast reductions for active-duty troops.

"Our forces going overseas have to wear flak vests, and it's not very amenable for them if they have large chests," she says of the latter procedure. "They are also very active, so it allows them to do their jobs better."

Perhaps the greatest difference between military and civilian practice, however, is that a military plastic surgeon must be adaptable to traveling and functioning in locations that they otherwise may not be inclined to visit, such as Afghanistan or East Africa or even Camp Pendleton, Calif., in the height of summer.

Dr. Martin's assignments have taken him between Washington, D.C., and Europe, with operational missions in Alaska, the Dominican Republic, Honduras and Libya, and to a combat-support hospital in Tikrit, Iraq, during Operation Iraqi Freedom.

"We as a community have deployed to the Middle East as general surgeons and deployed on hospital ships throughout the world, providing plastic surgery to underserved communities," says Dr. Gallus, who was deployed to Afghanistan in 2010.

"We're always maintaining a state of deployment readiness for myself and all the troops," Dr. Tran adds. "We have a lot of physical fitness standards, and we're expected to be involved with squadron physical training."

Not surprisingly, those in the military are required to have additional physical and testing requirements that civilian plastic surgeons aren't.

"Twice a year every member must pass a basic physical test involving a 1.5-mile run, push-ups and sit-ups," says Cmdr. Elan Singer, MD, New York, a U.S. Navy Reserve plastic surgery specialty leader. "In addition, we have general military online courses that are required, ranging from topics such as preventing identify theft to chemical/biological warfare to code of conduct of prisoners of war. The rest of the training is similar to civilian life, such as CPR, infection control, etc."

Dr. Gallus says that there are many aspects that are different, including the fact that most plastic surgeons don't have the same vested interest in national and world events that she does.

"Whether it be a major natural disaster or international conflict, the perspective is that of someone who must be ready to depart on short notice to support our troops or communities in need," she says.

According to Dr. Tran, sometimes pretend mass casualties are brought in to the hospital so that the staff and physicians can perform care exercises, which adds a lot of complexity to the job.

For those being deployed to the active front, Dr. Basile says weapons training and training on basic military survival are required.

"You also need to be fully trained as a trauma surgeon and they brush you up on all their basic trauma skills, because you never know what will come in," he says. "People who come in may not necessarily need a reconstructive surgeon, but they will need a life-saving surgeon. The beauty of having a plastic surgeon on the front line is they can see down the line what they will need – and spare vital structures in the meantime."

Another difference from civilian life is that those on the front need to worry about inventory down the line, as it could take as much as six months to get the supplies needed.

"Not only do we have to think about what we need today, but we have to think about what the guy who replaces us a year from now will need," Dr. Aguila says. "Most civilian doctors don't need to worry about those things."

"Some people think military is the same as Veterans Administration (V.A.) medicine, but it's not. I take care of active military, their families and retirees of those who have put in 20 years of service," Dr. Tran adds. "If there's specialty care that the V.A. can't provide, I take care of some of their patients to help them get care more quickly. But in general, that's a special arrangement."

"Although the military health-care system is a separate entity from the V.A., our mission merges in caring for our nation's heroes," Dr. Martin says. "The warriors that I am caring for will ultimately often transition to the V.A. system for their longer-term needs, and we have the obligation to main-

tain quality. There are initiatives at work presently to streamline data exchange between our two systems, and I believe that will go a long way in improving care."

Education matters

Many military physicians were provided the opportunity to pursue a career in medicine through scholarships that require a period of service as a means of repayment. Many others, however, find themselves voluntarily staying either as active-duty surgeons or reservists long after their obligation has been fulfilled.

"I never had intentions to stay beyond my initial term of service, but my clinical experiences and camaraderie with military colleagues enticed me to continue wearing the uniform," says Dr. Martin, who received a health professions scholarship from the Army to cover the costs of medical school at the University of Arkansas College of Medicine. "My 22 years of active duty began as an intern at Walter Reed in 1992."

Dr. Gallus, who attended medical school at the Uniformed Service University of the Health Sciences (USUHS) in Bethesda, says additional training provided to military physicians can be invaluable.

"I have never felt unprepared for military challenges due to the excellent education I received at USUHS and the things I picked up while in Army ROTC," she says. "It's alarming how often knowing basic land navigation and map reading has come in handy, while I cannot say the same for organic chemistry."

There are many different pathways to medical military service, however. Inspired to pursue a career in plastic surgery by the opportunity to operate on a wide range of patients and perform many different types of procedures, Dr. Singer joined the Navy in 2001 – while a second-year resident at Mt. Sinai Medical Center in New York.

"I joined mostly out of a sense of patriotism," he says. "My father and grandfather were both medical officers in the armed forces and my mother served as an officer in the Israel Defense Forces, so growing up I had a strong family background when it came to military service. I also take pride in serving an institution, rich with history, that is charged with the ever-important task of defending our nation."

Dr. Singer's reserve unit participates in monthly weekend drills at Walter Reed, and he performs monthly surgeries on active duty and dependent military personnel.

U.S. Navy Reserve Cmdr. Elan Singer, MD, aboard the* USS Oak Hill *during Fleet Week in New York.

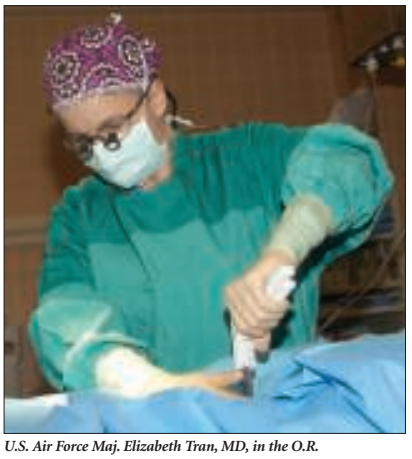
"We do elective surgery as well as wounded-warrior care every month. In addition, we are required to perform two weeks of service annually," Dr. Singer says. "This past year I went to Naval Medical Center San Diego and also served aboard *USS Oak Hill* during Fleet Week in New York. I'm also occasionally tasked with non-medical duties, and I presently serve as my unit's security officer, which means that I coordinate the security clearances of my unit members."

A recent case of Dr. Singer's involved a 33-year-old Marine who had a blast injury to the frontal bone. He was initially treated in-theater by a neurosurgeon and, once stable, transferred stateside for further surgery and rehabilitation.

"Several months into his rehab, he developed an open wound of the forehead which revealed necrotic and infected bone," Dr. Singer says. "He was then taken back to the O.R. with a combined plastic surgery/neurosurgery team for removal of the frontal bone and dura, followed by delayed frontal bone reconstruction with tissue expansion and a custom-made facial bone implant. He's doing well."

While training and schooling can help prepare a plastic surgeon for military life, even a physically and mentally demanding program can't prepare them for everything.

"Although I was exposed to horrible injuries during my residency training, there's something about seeing young and otherwise healthy Americans who volunteered to serve their country suffer life-altering injuries; no schooling can prepare you for that," Dr. Singer says. "It can be emotionally draining, but uplifting in many cases as well." PSN



U.S. Air Force Maj. Elizabeth Tran, MD, in the O.R.