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Beyond The Battlefield: From A Decade Of War, An Endless Struggle For The Severely Wounded

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In his dream, he was whole again.

Then he awoke in his hospital bed at the Walter Reed National Military Medical Center in Bethesda, Md., and reality came flooding back. Both of his legs and his right arm were gone, blown off in Afghanistan two months earlier by an improvised explosive device so powerful that only bits of his legs and boots were ever found. The explosion left one remaining limb, his left arm, broken and mangled.

Southern began to hyperventilate. His mother Patti, at his bedside, reached out to calm him. Mom, something's coming on, he cried. Breathe with me, she murmured. Breathe with me. She gathered him in her arms and held his head tight against her chest as sweat beaded over his body and his heart pounded wildly. He gulped lungfuls of air, his mother rocking him in her arms.

Breathe with me.

Suddenly Southern vomited. Patti rocked him gently in her arms until he was calm.

"My last big, bad day," he recalled recently. "Everybody has 'em," he added, speaking of the other patients he knows who are struggling with severe wounds.

A 22-year-old Marine Corps corporal, Southern is just one of a growing number of young Americans -- 16,000 or more, so far, out of 2.3 million American troops sent overseas -- who volunteered for Iraq or Afghanistan and came back alive but catastrophically wounded.

Those numbers are small but significant, because they indicate an alarming new trend in warfare. Despite untold billions of dollars spent over the past 10 years to defeat Afghan insurgents, the enemy's ability to severely wound Americans in battle is growing, according to U.S. military data and analysis.

Proportionately fewer American troops are being killed outright on the battlefield, thanks in part to better protective equipment and improved medical care. "We are stealing some people from death," Army Brig. Gen. Joseph Carvalho, a senior Army medical officer, told me at the Pentagon.

"Beyond the Battlefield" is a 10-part series exploring the challenges that severely wounded veterans of Iraq and Afghanistan face after they return home, as well as what those struggles mean for those close to them. Other stories in the series can be found here:

<http://www.huffingtonpost.com/news/beyond-the-battlefield>

July 4, 2010, was a bad day for Tyler Southern. He dreamed he was with his older brothers, playing sandlot football, running and laughing, horsing around just like they used to when they were together as kids in

Still, more Americans are being wounded in combat. And their wounds are more severe and complex, raising difficult issues for military medicine and for the nation on which disabled soldiers will depend for a lifetime of care.

The Defense Department uses a measure called the Military Injury Severity Score to categorize wounds. In Afghanistan, the severity scores have increased steadily since 2006, [the Army reported in June](#).

The number of American soldiers who lost at least one limb in combat doubled from 86 in 2009 to 187 last year, while the number with multiple limb loss tripled, from 23 in 2009 to 72 last year. Those in need of blood transfusions of 10 units of blood or more (the human body holds a total of 10 units of blood) rose during that 12-month period from 91 to 165.

And triple amputees like Tyler Southern are becoming more common. Their ranks have nearly doubled this year from the total of all triple amputees seen over the past eight years of war, the Army said in its report, "Dismounted Complex Blast Injury."

"These complex blast injuries are not only complex for the person to live with for the rest of their life, but they're also difficult for the entire medical health care system because of the resources they take," said Army Col. James Ficke, chief orthopedic surgeon at the Brooke Army Medical Center in San Antonio, Texas.

THE DEVASTATION OF THE IED

Most of the severely wounded are victims of a deadly new form of explosives perfected by insurgents in Iraq and Afghanistan, classified as improvised explosive devices. A seven-year, \$20 billion Pentagon campaign has been unable to defeat the IED and its deadly cousin, the suicide bomb. Over the past year, American troops have become more vulnerable to IEDs because they are walking more foot patrols, in keeping with the U.S. counterinsurgency doctrine of working closely with local Afghan villagers.

The survivors' wounds are often horrific. In Afghanistan, an IED is typically made of a plastic bucket of ammonium nitrate buried beneath layers of sand and dirt. It explodes with a lethal pressure wave strong enough to knock down concrete walls and bend metal, followed by a fireball as hot as 2,700 degrees that can burn away eyelids and fingers.

The blast severs limbs, ears and noses; tears off faces; crushes bones and teeth; bruises the brain; strips away skin and muscle; and ruptures eyeballs, eardrums, lungs, bowels and other internal organs. As the blast erupts upward, it drives sand, dirt, pebbles, bone fragments and barnyard filth deep into vulnerable soft tissue.

In recent months, trauma surgeons have seen a sharp rise in the war's most disturbing wound: the traumatic loss of both legs and the genitals.

The upward blast of an IED often rips off lower limbs as high as the hip, as well as the genitals. It shatters the pelvis and often takes off the arm the victim is using to hold out his weapon. In some cases the perineum, the seam at the bottom of the torso, is ripped open and the intestines and other organs spill out, a Navy combat corpsman told me.

One out of five Americans whom the Army medically evacuated from Afghanistan last October suffered such wounds, which the military calls genitourinary, or "GU," wounds.

These GU injuries have become so widespread that the Army has begun training surgeons in genital repair and reconstruction in its urology residency training programs.

Among the troops serving in Afghanistan, though, the response has been more direct: They would rather be dead than castrated. [According to the Army task force report on severe IED wounds](#), a number have developed "do not resuscitate" pacts in case they suffer traumatic genital amputation.

This month, the Army begins shipping tens of thousands of pairs of armored overgarments – in effect, diapers – to try to protect soldiers' genitals from blasts. The devices, made with layers of Kevlar, is strapped on over clothing, passing between the legs and snapping at the waist, and provides front and rear shielding.

According to Army Col. William Cole, the procurement officer, the garments will only be issued to soldiers at risk of encountering IEDs, such as those who operate with route-clearance teams.

An informal accounting of GU wounds by doctors at the U.S. military hospital in Landstuhl, Germany, where the wounded first arrive from Iraq or Afghanistan, described a threefold increase in genital wounds, from 45 in 2008 to 142 last year. Through July of this year, Landstuhl's surgeons have seen 90 GU cases, most of them involving the loss of genitals.

"It's the first thing they ask" when patients wake up, said Dr. Steven Davis, a psychiatrist at Walter Reed. "Are they still there?"

Annette "Bo" Bergeron, Walter Reed's chief physical therapist for amputees, sighed heavily and nodded when asked about traumatic genital amputation. She said the high-testosterone young Americans drawn to military service can bear almost anything except that particular wound. For them, she said, "It's devastating."

Despite such wounds, the fact that so many of the badly wounded can live beyond all previous expectations is cause for celebration, of course – for the troops, their families and the nation. But the severely wounded also pose new challenges for the military medical system: How do you care for a soldier or Marine who's not just a double amputee, but also has facial burns, severe infections, and has Traumatic Brain Injury and deep depression?

AMERICA'S WOUNDED WARRIORS

Among the questions the Defense Department and the Department of Veterans Affairs cannot answer is how many young Americans have been severely wounded in combat.

Incomplete battlefield reports and conflicting databases make it difficult to come to a precise accounting, Pentagon officials say.

About 45,000 American troops in all have been wounded in combat in Iraq and Afghanistan in ways that have been serious enough to warrant their evacuation to a hospital.

Within that group are roughly 16,500 who have been severely or catastrophically wounded, meaning they have lost the use of at least one limb and have other debilitating injuries.

These include 1,350 amputees and about 6,800 other men and women whose limbs are so mangled that their injuries will "affect their ability to function for the rest of their lives," said Ficke.

In addition, the Defense Department currently has on its books 310 cases of spinal cord injury, 2,043 troops with deep burns, 130 with the loss of at least one eye, 3,573 with severe penetrating head wounds, and 2,235 with severe traumatic brain injury. More than one fourth of military casualties suffer deep facial wounds. Some of these wounded troops are recorded in two or more categories: It is common, for instance, to see patients with multiple amputations and burns. On average, the wounded are being carried off the battlefield with 4.8 wounds each.

Separately, the Department of Veterans Affairs has on its rolls 6,500 severely wounded veterans under its care. VA officials expect that number to double to 13,000 within four years as the severely wounded retire from active-duty Defense Department care to the VA.

The VA accounts each year for the number of veterans who begin to receive disability payments. New cases of veterans receiving compensation for mental disorders have leaped from 32,838 in 2006 to 60,535 new cases in 2010.

COMING HOME

At Walter Reed or the Brooke Army Medical Center in San Antonio, two main intake points for the severely wounded, patients often arrive in a coma. Infections typically spread massively from the filth driven deep into their wounds. Patients at BAMC's burn center are especially vulnerable to infection. They spend hours on a gurney in a yellow-tiled shower room, heated to 90 degrees, while surgeons and trauma technicians wash away charred skin and bone and infected tissue. Months and years of painful surgery and both skin and tissue grafts follow.

Surgeons often use leeches on wounds to suck out venous -- deoxygenated -- blood that is not draining properly, Army doctors said.

Patients of all kinds also are vulnerable to heterotopic ossification, the mushrooming growth of bone in tissue damaged in combat. One veteran told me it felt like jagged coral growing in his leg. Patients typically suffer from compartment syndrome, in which nerves and muscles are crushed by uncontrollable swelling. Blood clots and organ failure are a constant threat. Understandably, acute anxiety and depression are common.

As the wounds of this war have become more severe, medical care has had to become more complex.

Two years ago, a wounded patient stayed three or four days in intensive care and a week or two in the hospital before being discharged to outpatient status. Today, the severely wounded are in intensive care two weeks or longer, and in the hospital 40 to 50 days as inpatients and two to three years as outpatients, according to Dr. Michael E. Kilpatrick, a senior Pentagon medical official. When the wars in Iraq and Afghanistan first began, wounded patients averaged 30 hours of surgery. Now patients are undergoing 60 to 100 hours of surgery, Kilpatrick said.

"There is a level of people who are catastrophically wounded, with a spinal cord injury or Traumatic Brain Injury (TBI) that leaves them in a minimally responsive state for months or years or decades," said Dr. Shane McNamee, chief of medicine and rehabilitation at the VA Polytrauma Rehabilitation Center in Richmond, Va.

"Despite what technology can do, these individuals will require significant amounts of physical assistance for a lifetime. These wounds don't simply go away. You can't cure these things. You can help an amputee by giving him a prosthetic limb, but you can't grow the leg back or nerves. You can't necessarily get rid of pain over time," said McNamee.

"There's just challenge after challenge, sad story after sad story," said Dr. Paul Pasquina, chief of orthopedics and rehabilitation at Walter Reed, where he has overseen the surge in the number of troops coming back from the battlefield severely wounded.

But they live.

[The battle statistics tell an astonishing story.](#) In 2002, the first full year of the war in Afghanistan, there were 81 American combat casualties, among whom 63 survived and 18 died, a survival rate of about 77 percent. This year, with tens of thousands more troops and a far higher tempo and intensity of combat, the first six months saw 2,585 casualties, of whom 172 died and 2,413 were saved, a survival rate of 93.3 percent, according to the casualty data the Pentagon makes public.

An increasing number of the wounded require massive blood transfusions, often 10 units (about five liters) or more. The death rate for badly wounded soldiers who receive these massive blood transfusions has been cut in half, from 40 percent historically to 20 percent today, according to Army data.

Very rough estimates suggests the survival rate for American combat casualties [was 76 percent](#) in Vietnam, [80 percent](#) in Korea and [70 percent](#) in World War II. (<http://siadapp.dmdc.osd.mil/personnel/CASUALTY/oefmonth.pdf>)

Recent wartime innovations mean that rather than coming home in a flag-draped coffin, Tyler Southern, a self-proclaimed "triple" sporting two chrome-plated powered legs and an artificial arm, got married last summer. It was a gala celebration that a local TV station hosted in Jacksonville and which was paid for through donations. After the ceremony, Tyler and his bride, Ashley, took ownership of a new home in St. Augustine, Fla., built with donated labor and materials.

AN INTENSE NIGHTMARE

[***** See original story if you want to read this section: <http://www.huffingtonpost.com/news/beyond-the-battlefield> *****]

THE MOST GRUESOME THINGS

There are more Tyler Southern's coming. President Obama's announced withdrawal of 33,000 from Afghanistan by 2012 will still leave over 60,000 U.S. military personnel embroiled in a war that is [still unpredictably deadly](#) for dismounted troops and even for those enclosed in massive armored vehicles called MATVs, which have [proven vulnerable to IED](#).

Violent clashes and IED attacks continue to soar in Afghanistan, up 39 percent in the first eight months of 2011 compared to the same period last year, [according to a recent United Nations report](#). (<http://unama.unmissions.org/Portals/UNAMA/SG%20Reports/110921%20SG%20Report%20on%20Afghanistan%20FINAL.pdf>)

The severely wounded continue to flow in from the battlefield, and many of them don't do as well as Southern. In Iraq several years ago, an IED blast tore off both legs of a soldier and ripped open his abdomen from sternum to pelvis. Trauma surgeons recorded a daunting list of other injuries: severe head injury, anoxic brain damage from lack of oxygen, spinal cord injury. Metal splinters and filth perforated his internal organs. His pelvis was shattered into more than 60 pieces. In a 24-hour period he lost 60 units of blood. He was 22 years old with a young, pregnant wife.

"It was one of the most gruesome things I've seen in medicine," said McNamee, at the VA Polytrauma Center in Richmond, Va. "He'd wake up every two or three hours and start shrieking, where are my fucking legs, who took my fucking legs?"

"How do you fix a guy like that? You can't. There's so much loss, so much despair," he added. "It's a matter of resetting expectations, trying to pull the individual and the family back after such a catastrophe."

Whatever their prospects for reclaiming normal life, the severely wounded are heading into a difficult and lifelong struggle that can stretch out for half a century or more. At the outset, extraordinary care is lavished on them at Bethesda and other state-of-the-art military medical centers. They are patients there for years, healing in the warm embrace of their fellow soldiers or Marines, an environment that Harold Wain, a psychiatrist at Walter Reed, calls "the womb of war."

Barely out of their teens, the severely wounded are suddenly heroes. The president visits. They are awarded medals. Their catastrophic wounds bind them into an elite community.

But inevitably, real life catches up. After years of rehab, some remain on active duty, but rarely in the high-adrenaline jobs they held before their injuries. Others drift away into private life. All of them will require a lifetime of care, the joys and trials of their newly-won lives intensified by the continuing reality of their physical and psychological wounds. Many suffer from chronic pain. Most have at least mild traumatic brain injury and stress disorders that slow their movements and fog their thinking. Infections and painful bone growths are common; artificial limbs wear out and need replacing as stumps change shape and size.

Amputees have a particularly hard time. It takes more than twice as much energy for a double amputee to walk with prosthetics, and many choose a wheelchair instead. But without exercise, wheelchair users have a higher risk of obesity, diabetes and heart disease.

A study [cited in the Army task force report](#) found that 53 percent of Iraq and Afghanistan war amputees use wheelchairs at least some of the time, compared with 32 percent for Vietnam war amputees. About one quarter of Iraq and Afghan war amputees already report arthritis problems. Almost half have hearing problems.

Families are also forever changed when soldiers are severely wounded. A phone call in the night summons young wives, often married only a few months to their soldier or Marine, to a life they never wanted and couldn't have imagined, giving up school or jobs to become full-time, lifelong caregivers.

"I am not only my husband's caregiver, non-medical attendant, appointment scheduler, cook, driver and groomer, but I am also his loving wife faced with my own stresses and frustrations," said Crystal Nicely, 25, whose husband Todd lost both arms and both legs to an IED blast March 26, 2010, in Lakari, Afghanistan.

"There is no other place on earth I want to be other than by his side," she said. But speaking of the long months at Walter Reed, she added: "Life here isn't a picnic."

Karie Fugett, a flight attendant who at age 20 married a Marine four months before he was blown up by an IED in Iraq in April 2006, kept [a blog during the subsequent years](#) of her husband's struggle.

"We were fighting to get his life back, and fighting to make a marriage work through pill addiction, overdose, miscarriage, family feuds, infections, amputation, PTSD, and TBI," she wrote. "There were amazing times that made everything worth it, and there were times I truly felt like I was in hell. I was scared, I was exhausted, and I felt very alone."

The normal stresses of life, piled on top of chronic pain and limited mobility -- and people gawking at a man with no legs -- can trigger post-traumatic stress disorder, medical experts say, putting at risk family and job. Separation and divorce rates for severely injured can [run as high as 64 percent](#), according to a recent review of studies published in the *Journal of Head Trauma Rehabilitation* that looked at 7,925 patients.

(http://journals.lww.com/headtraumarehab/Fulltext/2011/01000/Marriage_After_Brain_Injury_Review_Analysis.5.aspx)

For some, a cruel reality emerges: As time goes on, post-traumatic stress can emerge and worsen. The Pentagon has diagnosed more than 75,000 troops with post-traumatic stress syndrome, an anxiety disorder that usually accompanies a traumatic wound. Increasingly, PTSD is being recognized as a major cause of domestic violence and abuse.

One Army wife, whose husband came home from Iraq with severe PTSD, [wrote in her blog](#): "His angry outbursts could suddenly with a blink of an eye turn very scary with him picking up tables, chairs, hitting walls, breaking things, and often would push me around. Grabbing me by the arms or wrists would leave bruises for a week or longer. I kept thinking to myself, if it gets worse...I will have to leave him."

"Just when I think I am ready to walk out the door and just give up.....the thought occurs to me 'if I leave, my husband will simply become another statistic on some blank page that no one cares about.' It blows over, he switches back to his semi-normal PTSD self and acts as if nothing ever happened. In the mean time, I am cowering on the inside and permanently waiting for the fists to fly..."

Combat veterans with mental health issues often feel out of place at home in the civilian world, and yearn to return to the uncomplicated and close-knit camaraderie of war. That makes it hard to open up to a civilian psychologist -- indeed if they can find a therapist who understands.

"Being in combat or doing anything when your life is in danger, that gives you an adrenaline high. I seek that out, when I can," said Zac Hershley, who came home in 2004 with PTSD from fighting in Iraq and Afghanistan.

"I feel safer over there than here," he told me. "I know what the situation is, I trust the guys over there. I don't trust hardly anybody here." Said his wife, Elizabeth: "He's treatable. Not curable."

While many rise above these afflictions, for others alcohol and drug abuse are common, as is domestic violence. It is a long and hard road, and a painful, expensive and visible reminder that the costs of war endure long after the last troops are withdrawn.

"Americans love success stories," said McNamee, at the Richmond Polytrauma Center. "There's this shiny, bright, happy theme that war wounds go away and everybody is going to be fine and the rest of us won't have any societal guilt because of that."

"Well, that doesn't always happen."

YEARS OF REHAB

[***** See original story if you want to read this section: <http://www.buffingtonpost.com/news/beyond-the-battlefield> *****]

IN THE NEXT INSTALLMENT OF 'BEYOND THE BATTLEFIELD': A decade ago, Corpsman James Stoddard would have tried to keep Tyler Southern from bleeding to death with pressure bandages. That was what medics were taught. But the severely wounded like Southern were simply bleeding to death on the battlefield. The widespread use of a simple tourniquet, along with intense training of medics and corpsmen, is one simple step that is now saving lives.

The rest of the *Beyond The Battlefield* series can be found here: <http://www.buffingtonpost.com/news/beyond-the-battlefield>