

Brain Injury and War in IRAQ

News Items Compiled by



Brain Injury Association of Oregon
March 25, 2005

TABLE OF CONTENTS

Iraq War Casualties.....	1
US soldiers in Iraq suffer horrific brain and mental injuries	1
One in six US veterans of Iraq war suffers trauma disorders	3
Brain Injuries High Among Iraq Casualties	6
The Lasting Wounds of War	8
Press Underreports Wounded in Iraq	11
Lasting head injuries on the rise in Iraq	12
First significant statewide budget amendment for brain injury services succeeds.....	16
Wounded Soldiers	17
Brain trauma takes toll on soldiers	21
Brain-Injured Local Marine Struggles To Recover	23
Brain Injuries Affect Majority Of Injured Soldiers	23
WMU gearing up for influx of injured soldiers	24
Traumatic Injury: The Legacy of the US War in Iraq.....	25
Doctors Seeing More Brain Injuries From Iraq	27
Iraq wounded: Ranks swell, unheralded	29
More Troops Returning From Iraq With Brain Trauma.....	32
Soldiers From Iraq Must Undergo Extensive Rehab	32
The Hidden Cost of Bush's War	35
Further Action Needed for Soldiers Sustaining Brain Injuries in Iraq	38
Military drives state university's study of brain injuries	39
Therapy Helps Soldiers Cope with Traumatic Brain Injury.....	42
Brain Injuries Lead Iraq War Injuries	44
Traumatic brain injury, a 'silent handicap,' affects many Iraq vets.....	46
War vets suffer frequent head trauma	49
Minnesota soldier recovers after being injured in Iraq	51
Defense and Veterans Brain Injury Center	53
Key Iraq wound: Brain trauma	55
Brain injuries range from loss of coordination to loss of self.....	57
Veteran's TBI Resource Information	60
Fact Sheets.....	61
VA Self-Evaluation 2003	63

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1.

<http://www.cnn.com/SPECIALS/2003/iraq/forces/casualties/> 1/26/05

Iraq War Casualties

There have been 1,581 coalition troop deaths, 1,420 Americans, 76 Britons, seven Bulgarians, one Dane, two Dutch, two Estonians, one Hungarian, 20 Italians, one Kazakh, one Latvian, 16 Poles, one Salvadoran, three Slovaks, 11 Spaniards, two Thai and 17 Ukrainians in the war in Iraq as of January 27, 2005. ([Graphical breakdown of casualties](#)). The list below is the names of the soldiers, Marines, airmen, sailors and Coast Guardsmen whose families have been notified of their deaths by each country's government. At least **10,502** U.S. troops have been wounded in action, according to the Pentagon. The Pentagon does not report the number of non-hostile wounded. For a historical look at U.S. war casualties, [click here](#). To view casualties in the war in Afghanistan, [click here](#).

2.

US soldiers in Iraq suffer horrific brain and mental injuries

By Rick Kelly
20 November 2004

<http://www.wsws.org/articles/2004/nov2004/sold-n20.shtml>

According to official figures, the Iraq war has so far seen 9,000 US soldiers wounded in action, in addition to the more than 1,200 troops killed. These wounded, whose numbers may well be underestimated, include those with gunshot and shrapnel wounds, lost limbs and other injuries caused by landmines and bombs. Less well known, however, is the terrible toll enacted through brain and psychological injuries, which frequently have devastating and permanent effects.

The war has seen unusually high rates of traumatic brain injury (TBI). This head injury causes life-long damage in many cases. Symptoms include memory loss, difficulty with attention and reasoning, headaches, confusion, anxiety, irritability and depression.

TBI rates in previous wars have been estimated at about 20 percent. In July, a *San Francisco Chronicle* survey of troops being processed through Walter Reed Army Medical Hospital in Washington DC indicated that as many as two-thirds of all soldiers wounded in Iraq suffer from the condition.

The increase in brain injury cases is largely due to the advanced body armor and helmets now used by US forces. As the death rate of wounded troops has declined compared to previous conflicts, the rate of TBI has shot up. The nature of the Iraq war has also increased the number of brain injuries. Rocket propelled grenades, mortars, and other explosive devices cause concussive shock blasts damaging to the brain.

Traumatic brain injury often goes undetected until the affected soldier returns home and his or her family notices that something is wrong. The *San Francisco Chronicle* reported on the case of Sgt. 1st Class Alec Geiss, of the Oregon National Guard, whose truck rolled over him as it crashed while avoiding a suspected land mine:

“Geiss’ wife, Shana, noticed after his return that the easygoing, relaxed dad who went to Iraq had become a quick-tempered man who couldn’t remember the family’s daily schedule, jumped up screaming when

the family cat landed on his bed and couldn't tolerate crowds. The world inside his head, Giess said, was even stranger: he felt bewildered, with no sense of time other than 'daytime' and 'nighttime.' He also felt cut off from his emotions. 'When my kids come and hug me, I don't feel a thing,' he said."

Many other incidents of TBI are even more severe. *ABC News* reported last month on the situation in one Veterans Affairs hospital in Palo Alto, California. "The majority of [TBI patients], they're incontinent, both bowel and bladder, so we have to retrain them when to use the toilet, how to use the toilet," nurse manager Stephanie Alvarez said.

Each patient at the facility is given a "memory book," which describes that day's schedule, and other important information. For many wounded soldiers this includes a reminder of why they are in hospital. "I had a head injury from an explosion in Iraq on June 14, 2004," one soldier's book read.

Post-traumatic stress disorder

The US military is also experiencing a very high rate of post-traumatic stress disorder (PTSD) among troops. Many of the symptoms are similar to traumatic brain injury. Post-traumatic stress disorder sufferers can experience feelings of detachment and isolation, poor concentration and memory, depression, insomnia, flashbacks, as well as headaches, gastrointestinal complaints, and immune system problems. Like TBI, soldiers suffering from psychological disorders have high rates of alcohol and drug abuse, and suicide.

A study published by the *New England Journal of Medicine* in July found that up to 17 percent of the surveyed Iraq veterans suffered from PTSD, generalized anxiety, or major depression. This probably underestimated the true scale of the problem, since the soldiers in the study served in the early phase of the war, before the Iraqi resistance really intensified.

"The bad news is that the study underestimated the prevalence of what we are going to see down the road," Dr. Matthew J. Friedman, executive director of the Veterans Affairs (VA) national center for post-traumatic stress disorder, told the *Los Angeles Times* last Sunday. "The complexion of the war has changed into a grueling counterinsurgency. And that may be very important in terms of the potential toxicity of this combat experience."

"This is urban warfare," declared Dr. Alfonso Bates, the VA's national director for readjustment counseling. "There's no place to hide in Iraq. Whether you're driving a truck or you're a cook, everyone is exposed to extreme stress on a daily basis."

There have been at least 30 reported suicides among soldiers in Iraq—a rate nearly one-third higher than the Army's historical average. Many more suicides occur in the US by those who have finished their tour of duty, but since the Pentagon does not track these incidents the number is not known.

Associated Press, however, reported on October 18 that at least 12 Marines had killed themselves after returning from Iraq or Afghanistan. "Military people are heavily vetted for any psychological problems before they enter the service," noted Steve Robinson, executive director of the National Gulf War Resource Center. "They're screened very well when they come in, and they're supposed to be screened very well when they leave. So when a Marine takes the ultimate step of checking out by taking his own life, it should make the hair on the back of your neck stand up. These are the guys who aren't supposed to do that."

There is mounting evidence that the rate of suicide and psychological disorders is at least partially due to the brutality of the US-led occupation. Most of those serving in the military were drawn from working class and impoverished rural regions, and enlisted either to get a job or to advance their education.

These young people have been dispatched to a war that was based on a series of flagrant lies, and that violated numerous precepts of international law. They are now being ordered to intimidate and terrorize the Iraqi people, and to crush any resistance to the occupation and Iyad Allawi's stooge interim government. The killing and brutalization of the Iraqi people has triggered guilt, shame and serious psychological problems for many soldiers.

Last month Associated Press reported the case of Jeffrey Lucey, a 23-year-old Marine who suffered from serious depression and became dependent on alcohol after returning from Iraq in July 2003. On Christmas Eve he told his sister how he had been ordered to shoot two unarmed Iraqi soldiers. "He took off two dog tags around his neck, then threw them at me and said, 'Don't you understand? Your brother is a murderer,'" she recalled. Lucey killed himself in June.

Former Army sergeant, Matt La Branche, told the *Los Angeles Times* that the memories of his nine-month stint as a machine-gunner in Iraq left him "feeling dead inside." He constantly struggles with the image of the Iraqi woman who died in his arms after he had shot her. The woman's children were also wounded in the incident. "I'm taking enough drugs to sedate an elephant, and I still wake up dreaming about it," he said.

Affected soldiers receive grossly inadequate treatment from the military establishment. Brain trauma and psychological injuries often require months of expensive and intensive rehabilitation, long-term drug therapy and psychological counseling. Facilities that were already underfunded and overstretched are now at breaking point.

Receiving treatment is especially difficult for sufferers of PTSD. Army psychologists are pressured to get their patients back out in the field as soon as possible, while the macho culture cultivated within the ranks leads many soldiers to deny that they have a problem. The *New England Journal of Medicine* study found that less than half of all soldiers affected by PTSD sought treatment, fearing stigmatization or damage to their careers.

Officials also leave many families of PTSD sufferers completely unprepared for the shock of having to deal with the condition. One woman told the *New Yorker* how she had been advised prior to the return of her husband from Iraq: "When he was coming home, the Army gave us little cards that said things like 'Watch for psychotic episodes' and 'Is he drinking too much?' A lot of wives said it was a joke. They had a lady come from the psych ward, who said—and I'm serious—'Don't call us unless your husband is waking you up in the middle of the night with a knife at your throat.' Or, 'Don't call us unless he actually chokes you, unless you pass out. He'll have flashbacks. It's normal.'"

Such treatment is indicative of the way in which tens of thousands of young people are being used as cannon fodder in Iraq. Responsibility for their suffering rests with the criminals in the White House who launched the war of aggression, and more broadly, the entire US political establishment which is united on maintaining the indefinite occupation of Iraq.

3.

One in six US veterans of Iraq war suffers trauma disorders

**By Joanne Laurier
9 July 2004**

<http://www.wsws.org/articles/2004/jul2004/post-j09.shtml>

Nearly a thousand US soldiers have died in the predatory wars in Iraq and Afghanistan. Thousands more have been maimed. For those who escape physical injury, however, there is the mental stress caused by combat and the specific stress of fighting in colonial-style wars against hostile populations.

According to researchers, large numbers of American soldiers returning from combat in Iraq and Afghanistan show signs of post-traumatic stress disorder (PTSD) and other psychiatric difficulties. The average age of the fighting personnel is just 19, but the prognosis for a healthy life is bleak.

A study published July 1 by the *New England Journal of Medicine (NEJM)* found that one in six soldiers returning from Iraq was suffering from a variety of emotional problems, with lower levels of mental disabilities exhibited among those who served in Afghanistan. The report, conducted by a team from the Walter Reed Army Institute of Research in Washington, D.C., is the first such assessment of war-related psychiatric disorders made while military action is underway. Most studies in the past that have focused on the effects of combat on mental health were performed years after the fighting had ended.

“Research conducted after other military conflicts has shown that deployment stressors and exposure to combat result in considerable risks of mental health problems, including post-traumatic stress disorder, major depression, substance abuse, impairment in social functioning and in the ability to work, and the increased use of health care services.... A problem in the methods of such studies is the long recall period after exposure to combat. Very few studies have examined a broad range of mental health outcomes near to the time of the subjects’ deployment,” according to the investigation.

The all-volunteer forces in Iraq and Afghanistan have been involved in the first sustained ground combat undertaken by the US since Vietnam. The researchers surveyed more than 6,000 American soldiers in the months before and after combat in the two countries. Nearly 17 percent of those who fought in Iraq showed symptoms of PTSD, major depression or severe anxiety, versus 11 percent for those who served in Afghanistan. The higher rates of psychiatric trauma reported by troops returning from Iraq reflected a greater exposure to combat, with some 90 percent of the soldiers in Iraq having been in a firefight, compared to 31 percent in Afghanistan.

“For all groups responding after deployment, there was a strong relation between combat experiences, such as being shot at, handling dead bodies, knowing someone who was killed, or killing enemy combatants and the prevalence of PTSD,” stated the *NEJM* researchers.

The *NEJM* study is not the first indicator of major problems. In February, Mark Benjamin of UPI reported that as many as one out of ten US soldiers being evacuated from Iraq and Afghanistan to the army’s biggest hospital in Europe, the Landstuhl Regional Medical Center in Germany, was being sent there for psychiatric or behavioral health issues.

The *NEJM* issue also carried an editorial by Dr. Matthew J. Friedman, director of the Department of Veterans Affairs at the National Center for Post-Traumatic Stress Disorder. Friedman discussed the relationship between mental trauma and the nature and character of a war.

“Indeed, there is reason for concern that the reported prevalence of PTSD of 15.6 to 17.1 percent among those returning from Operation Iraqi Freedom or Operation Enduring Freedom [Afghanistan] will increase in coming years.... [O]n the basis of studies of military personnel who served in Somalia [when the nature of the mission changed from peacekeeping to the capture of warlords], it is possible that psychiatric disorders will increase now that the conduct of the war has shifted from a campaign for liberation to an ongoing armed conflict with dissident combatants.

Of course, the war in Iraq was never a “campaign for liberation,” but no doubt many US troops thought it was. The realization by soldiers that they are engaged in a brutal occupation and mass repression, Friedman suggested, will have its own mental and emotional consequences.

He continued ominously: “In short, the estimates of PTSD reported by [military psychiatrist Charles] Hoge and associates [authors of the *NEJM* study] may be conservative not only because of the methods used in their study but also because it may be too early to assess the eventual magnitude of the mental health problems related to the deployment to Operation Iraqi Freedom or Operation Enduring Freedom.”

Besides the change of mission from “liberation” to occupation, Friedman also cited extended tours of duty as a cause of mental health difficulties.

The crisis is further compounded by the fact that military personnel are skeptical that their use of mental health services will remain confidential and are apparently “afraid to seek assistance for fear that a scarlet P could doom their careers,” observed Friedman.

He warned of an increase in psychological problems among soldiers despite an important distinction between the present period and the post-Vietnam war era: “Americans no longer confuse war with the warrior; those returning from Iraq and Afghanistan enjoy national support, despite sharp political disagreement about the war itself.”

Surveys of veterans conducted years after their military service ended have shown a prevalence of current PTSD among 15 percent of the Vietnam veterans and 2 to 10 percent among veterans of the first Gulf War, claimed the *NEJM* report.

Once called “shell shock” or “combat fatigue,” PTSD displays symptoms that include flashbacks, nightmares, panic attacks, feelings of detachment, irritability, trouble concentrating, emotional outbursts and sleeplessness. The National Center for PTSD states that PTSD is a highly prevalent lifetime disorder.

The National Vietnam Veterans Readjustment Survey (NVVRS), conducted between 1986 and 1988, estimated that more than half of all male Vietnam veterans and almost half of all female Vietnam veterans—some 1,700,000 in all—have experienced “clinically serious stress reaction symptoms.”

This translates into a 40 percent divorce rate for male Vietnam veterans, with 23 percent having high levels of parenting problems. Almost half of all male Vietnam veterans suffering from PTSD between 1986 and 1988 have been arrested or jailed at least once, and the estimated lifetime prevalence of substance abuse or dependency among male Vietnam veterans is nearly 40 percent.

There is also another psychiatric fallout from the war in Iraq: suicide.

According to an Army mental-health team studying soldiers in the combat environments of Iraq and Kuwait last year, there were 23 suicides in Iraq in 2003, mostly young and in lower enlisted ranks. The survey showed that nearly 90 percent of soldiers were concerned about not knowing how long they would be deployed, separation from family, and lack of privacy and personal space.

“Soldiers indicated their most troubling experiences in combat came from seeing dead bodies (67 percent), being shot at (63 percent), being attacked or ambushed (61 percent) and knowing someone who was killed or seriously wounded (59 percent).... Additionally, 72 percent of the soldiers said their unit morale was low and 52 percent said their own morale was low,” according to a March dispatch from the Army News Service.

The *NEJM* study is a preliminary and rather elemental description of the psychological damage inflicted on a whole generation of economic conscripts—that is, working class youth bereft of options—by the Bush administration’s illegal and open-ended wars of conquest.

The possibility of obtaining career training or a college education paid for by Uncle Sam—the mantras of the military recruiters—evaporates with the onset of post-combat mental illness. Research has documented the profound connection between the nature of a war—the reasons why men and women fight—and the degree of psychic trauma endured by the fighters. A rotten colonialist enterprise based on lies is wreaking havoc on the minds of those obliged to carry it out.

Dry scientific data conveys only so much; it takes a poet on the order of Wilfred Owen (1893-1918), who fought and died in World War I, to capture something of this nightmarish ordeal:

*These are men whose minds the Dead have ravished.
Memory fingers in their hair of murders,
Multitudinous murders they once witnessed.
Wading sloughs of flesh these helpless wander,
Treading blood from lungs that had loved laughter.
Always they must see these things and hear them,
Batter of guns and shatter of flying muscles,
Carnage incomparable and human squander
Rucked too thick for these men's extrication.*

—from *Mental Cases*

4.

Brain Injuries High Among Iraq Casualties

http://www4.army.mil/ocpa/read.php?story_id_key=5445



Brain injuries high among Iraq casualties

By Spc. Chuck Wagner

WASHINGTON (Army News Service, Nov. 24, 2003) -- U.S. casualties in Iraq may be suffering a greater share of brain injuries than in previous wars, causing concern among military doctors.

Doctors with the Defense and Veterans Brain Injury Center at Walter Reed Army Medical Center say early casualty assessments suggest service members are returning with a wide range of brain injuries — from mild concussions to coma or death — in larger percentages than the military's rule of thumb.

This suspected rise in an injury notoriously debilitating to victims and hard for doctors to diagnose may result from the terrorists' explosive arsenal and vulnerabilities in current U.S. combat gear, according to experts.

"It's always been well known there are going to be brain injuries in combat," said Dr. Louis French, a neuropsychologist and assistant director for clinical services at the brain center. "About 20 percent is usually what's talked about. So far, what we've seen suggests a higher percentage."

Among 105 casualties assessed between June and October, doctors discovered about two-thirds, or 67 percent, to have brain injuries, according to Dr. Laurie Ryan, another neuropsychologist and the assistant director for research.

The center is pursuing several studies to statistically verify the trend.

The cause for the dramatic increase seems to be the changed nature of warfare in Iraq. The terrorists' weapons of choice are high explosives. Land mines, rocket propelled grenades and improvised bombs allow terrorists to skirt direct engagement with better trained and equipped soldiers, and can still inflict damage to soldiers whose torso, or in military jargon their "center mass", is protected against small arms ballistics.

"There's not as many gunshot wounds," French bluntly noted.

Ironically, a well-protected body has forced the enemy to attack the brain, the only organ still vulnerable to deadly attack.

Another leading cause of head injuries is vehicle accidents, said Ryan, followed by falls.

Although soldiers are wearing head protection, the Kevlar helmet may not be serving soldiers as a solid defense against modern warfare's growing threat - concussive impact.

"It's like a pan on your head, held on by shoestring webbing," said Sgt. Tyler Hall of the 14th Combat Engineers, Fort Lewis Washington. "The Kevlar is a crude system. When you take a hit, it rings your head like a bell."

"It's not designed to absorb impact," French concurred.

Hall has been treated in the center since August, when a convoy traveling near Tikrit came under attack. Terrorists rigged a 155 mm howitzer shell to detonate in the sand as the convoy drove past. The explosion blew through the vehicle's bed and tossed Hall. He landed face down. From the moment he was put on a Blackhawk helicopter until he awoke at Walter Reed a month later, Hall was in a coma caused by the blunt force against his head, despite wearing a Kevlar. He's undergone several surgeries to reconstruct the bones in his face and drain fluid from his brain.

Doctors are treating Hall for several injuries, but it's the head injury that repeatedly threatened to rob Hall of his life, and later the ability to appreciate that he still had a life.

"Day to day I'm getting better. A fog is finally off my eyes. It's frustrating, very frustrating. It's like fighting something you don't see, no one sees, but you can feel it," said Hall, who's improved under intense care at the center but still suffers headaches, nausea, and memory loss. "I still misplace things. I just want to be able to ride in a car again without getting sick."

French and Ryan said brain injuries add a new element of difficulty to casualty assessment, because the injuries are challenging to diagnose and difficult to differentiate from symptoms of other injuries, for instance the symptoms of psychological stress.

"A blow to the head is known to cause depression. Anyone who is returning from a situation in which they are being shot at is likely to experience emotional trauma that can cause depression. It's hard to draw a line between them," said French. "They share symptoms."

He admits brain injuries may be neglected, or even pushed aside as merely psychological.

"They are suffering just as much, but may not get the same support as someone who has an observable injury like a bullet wound or a broken leg," said French.

Brain injuries can exert themselves in physical, cognitive or emotional symptoms, and left untreated they can pose significant hurdles to recovery.

The center is seeking out possible brain injury casualties instead of waiting for referred patients. Doctors screen each new casualty list in search of those likely to have experienced concussive impact, like those in explosions, vehicle accidents or falls. Doctors arrange for personal interviews with high-risk service members. They've screened over 100 patients so far, and continue the effort with Walter Reed's approximately 10 daily arrivals, said Ryan.

The brain center on Walter Reed is the headquarters for eight different centers, including four veterans' affairs, three military and a civilian site. The center is congressionally funded. It works hand in hand, but independently with other medical facilities on Walter Reed.

The center's doctors also are involved in analyzing the newly developed Modular Integrated Communication Helmet (MICH) for its protection against impact-related injuries, said Ryan.

The MICH is currently fielded with Rangers, Special Forces, Navy SEALs, Air Force Special Operations, the Marine reconnaissance community, the FBI's Hostage Response Team, and a brigade at the 82nd Airborne Division, according to a MICH project officer.

The padded MICH is the only ballistic helmet used by Special Operations Command also authorized for use with motorcycles or other all-terrain vehicles, which the project says attests to improved impact protection. Lab testing showed a 40 percent improvement in impact protection over the Kevlar.

The jury is still out on whether the MICH can protect against the causes of brain injuries faced in Iraq, but there's at least one soldier voting in favor of dampening the blows landing on our troops' heads.

"The Kevlar physically moves and bounces on your head. It's heavy and you hear soldiers complaining about headaches a lot," said Hall, running his hand along the back of his head, still laced with metal sutures. "I'd like to see the Army find something better."

(Editor's note: Spc. Chuck Wagner writes for the Pentagon newspaper at Fort Myer, Va.)

5.

[washingtonpost.com](http://www.washingtonpost.com)

The Lasting Wounds of War

Roadside Bombs Have Devastated Troops and Doctors Who Treat Them

By Karl Vick

Washington Post Foreign Service

Tuesday, April 27, 2004; Page A01

BAGHDAD -- The soldiers were lifted into the helicopters under a moonless sky, their bandaged heads grossly swollen by trauma, their forms silhouetted by the glow from the row of medical monitors laid out across their bodies, from ankle to neck.

An orange screen atop the feet registered blood pressure and heart rate. The blue screen at the knees announced the level of postoperative pressure on the brain. On the stomach, a small gray readout recorded the level of medicine pumping into the body. And the slender plastic box atop the chest signaled that a respirator still breathed for the lungs under it.

At the door to the busiest hospital in Iraq, a wiry doctor bent over the worst-looking case, an Army gunner with coarse stitches holding his scalp together and a bolt protruding from the top of his head. Lt. Col. Jeff Poffenbarger checked a number on the blue screen, announced it dangerously high and quickly pushed a clear liquid through a syringe into the gunner's bloodstream. The number fell like a rock.

"We're just preparing for something a brain-injured person should not do two days out, which is travel to Germany," the neurologist said. He smiled grimly and started toward the UH-60 Black Hawk thump-thumping out on the helipad, waiting to spirit out of Iraq one more of the hundreds of Americans wounded here this month.

While attention remains riveted on the rising count of Americans killed in action -- more than 100 so far in April -- doctors at the main combat support hospital in Iraq are reeling from a stream of young soldiers with wounds so devastating that they probably would have been fatal in any previous war.

More and more in Iraq, combat surgeons say, the wounds involve severe damage to the head and eyes -- injuries that leave soldiers brain damaged or blind, or both, and the doctors who see them first struggling against despair.

For months the gravest wounds have been caused by roadside bombs -- improvised explosives that negate the protection of Kevlar helmets by blowing shrapnel and dirt upward into the face. In addition, firefights with guerrillas have surged recently, causing a sharp rise in gunshot wounds to the only vital area not protected by body armor.

The neurosurgeons at the 31st Combat Support Hospital measure the damage in the number of skulls they remove to get to the injured brain inside, a procedure known as a craniotomy. "We've done more in eight weeks than the previous neurosurgery team did in eight months," Poffenbarger said. "So there's been a change in the intensity level of the war."

Numbers tell part of the story. So far in April, more than 900 soldiers and Marines have been wounded in Iraq, more than twice the number wounded in October, the previous high. With the tally still climbing, this month's injuries account for about a quarter of the 3,864 U.S. servicemen and women listed as wounded in action since the March 2003 invasion.

About half the wounded troops have suffered injuries light enough that they were able to return to duty after treatment, according to the Pentagon.

The others arrive on stretchers at the hospitals operated by the 31st CSH. "These injuries," said Lt. Col. Stephen M. Smith, executive officer of the Baghdad facility, "are horrific."

By design, the Baghdad hospital sees the worst. Unlike its sister hospital on a sprawling air base located in Balad, north of the capital, the staff of 300 in Baghdad includes the only ophthalmology and neurology surgical teams in Iraq, so if a victim has damage to the head, the medevac sets out for the facility here, located in the heavily fortified coalition headquarters known as the Green Zone.

Once there, doctors scramble. A patient might remain in the combat hospital for only six hours. The goal is lightning-swift, expert treatment, followed as quickly as possible by transfer to the military hospital in Landstuhl, Germany.

While waiting for what one senior officer wearily calls "the flippin' helicopters," the Baghdad medical staff studies photos of wounds they used to see once or twice in a military campaign but now treat every day. And they struggle with the implications of a system that can move a wounded soldier from a booby-trapped roadside to an operating room in less than an hour.

"We're saving more people than should be saved, probably," Lt. Col. Robert Carroll said. "We're saving severely injured people. Legs. Eyes. Part of the brain."

Carroll, an eye surgeon from Waynesville, Mo., sat at his desk during a rare slow night last Wednesday and called up a digital photo on his laptop computer. The image was of a brain opened for surgery earlier that day, the skull neatly lifted away, most of the organ healthy and pink. But a thumb-sized section behind the ear was gray.

"See all that dark stuff? That's dead brain," he said. "That ain't gonna regenerate. And that's not uncommon. That's really not uncommon. We do craniotomies on average, lately, of one a day."

"We can save you," the surgeon said. "You might not be what you were."

Accurate statistics are not yet available on recovery from this new round of battlefield brain injuries, an obstacle that frustrates combat surgeons. But judging by medical literature and surgeons' experience with their own patients, "three or four months from now 50 to 60 percent will be functional and doing things," said Maj. Richard Gullick.

"Functional," he said, means "up and around, but with pretty significant disabilities," including paralysis.

The remaining 40 percent to 50 percent of patients include those whom the surgeons send to Europe, and on to the United States, with no prospect of regaining consciousness. The practice, subject to review after gathering feedback from families, assumes that loved ones will find value in holding the soldier's hand before confronting the decision to remove life support.

"I'm actually glad I'm here and not at home, tending to all the social issues with all these broken soldiers," Carroll said.

But the toll on the combat medical staff is itself acute, and unrelenting.

In a comprehensive Army survey of troop morale across Iraq, taken in September, the unit with the lowest spirits was the one that ran the combat hospitals until the 31st arrived in late January. The three months since then have been substantially more intense.

"We've all reached our saturation for drama trauma," said Maj. Greg Kidwell, head nurse in the emergency room.

On April 4, the hospital received 36 wounded in four hours. A U.S. patrol in Baghdad's Sadr City slum was ambushed at dusk, and the battle for the Shiite Muslim neighborhood lasted most of the night. The event qualified as a "mass casualty," defined as more casualties than can be accommodated by the 10 trauma beds in the emergency room.

"I'd never really seen a 'mass cal' before April 4," said Lt. Col. John Xenos, an orthopedic surgeon from Fairfax. "And it just kept coming and coming. I think that week we had three or four mass cal's."

The ambush heralded a wave of attacks by a Shiite militia across southern Iraq. The next morning, another front erupted when Marines cordoned off Fallujah, a restive, largely Sunni city west of Baghdad. The engagements there led to record casualties.

"Intellectually, you tell yourself you're prepared," said Gullick, from San Antonio. "You do the reading. You study the slides. But being here" His voice trailed off.

"It's just the sheer volume."

In part, the surge in casualties reflects more frequent firefights after a year in which roadside bombings made up the bulk of attacks on U.S. forces. At the same time, insurgents began planting improvised explosive devices (IEDs) in what one officer called "ridiculous numbers."

The improvised bombs are extraordinarily destructive. Typically fashioned from artillery shells, they may be packed with such debris as broken glass, nails, sometimes even gravel. They're detonated by remote control as a Humvee or truck passes by, and they explode upward.

To protect against the blasts, the U.S. military has wrapped many of its vehicles in armor. When Xenos, the orthopedist, treats limbs shredded by an IED blast, it is usually "an elbow stuck out of a window, or an arm."

Troops wear armor as well, providing protection that Gullick called "orders of magnitude from what we've had before. But it just shifts the injury pattern from a lot of abdominal injuries to extremity and head and face wounds."

The Army gunner whom Poffenbarger was preparing for the flight to Germany had his skull pierced by four 155mm shells, rigged to detonate one after another in what soldiers call a "daisy chain." The shrapnel took a fortunate route through his brain, however, and "when all is said and done, he should be independent. . . . He'll have speech, cognition, vision."

On a nearby stretcher, Staff Sgt. Rene Fernandez struggled to see from eyes bruised nearly shut.

"We were clearing the area and an IED went off," he said, describing an incident outside the western city of Ramadi where his unit was patrolling on foot.

The Houston native counted himself lucky, escaping with a concussion and the temporary damage to his open, friendly face. Waiting for his own hop to the hospital plane headed north, he said what most soldiers tell surgeons: What he most wanted was to return to his unit.

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6.

Press Underreports Wounded in Iraq

By Seth Porges

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http://www.editorandpublisher.com/eandp/news/article_display.jsp?vnu_content_id=2008146

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NEW YORK When newspapers reported this week on poor medical and living conditions for Americans injured in Iraq, it might have come as a shock for some readers. For months, the press has barely mentioned non-fatal casualties or the severity of their wounds.

E&P reported in July that while deaths in combat are often tallied by newspapers, the many non-combat troop deaths in Iraq are virtually ignored. It turns out that newspaper readers have also been shortchanged in getting a sense of the number of troops injured, in and out of battle.

"There could be some inattention to [the number of injured troops]," said Philip Bennett, *Washington Post* assistant managing editor of the foreign desk. "And obviously if there is, it should be corrected. Soldiers getting wounded is part of the reality of conflict on the ground. I think if you were to find or discover that those figures are being overlooked, that would be something we'd want to correct."

Few newspapers routinely report injuries in Iraq, beyond references to specific incidents. Since the war began in March, 1,927 soldiers have been wounded in Iraq, many quite severely. (The tally is current as of Oct. 20.) Of this number, 1,590 were wounded in hostile action, and 337 from other causes. About 20% of the injured in Iraq have suffered severe brain injuries, and as many as 70% "had the potential for resulting in brain injury," according to an Oct. 16 article in *The Boston Globe*.

Current injury statistics were easily obtained by *E&P* through U.S. Central Command and the Pentagon,

so getting the numbers is no longer a problem. According to Lawrence F. Kaplan, author of an article on injured troops in the Oct. 13 issue of *The New Republic*, this information has only recently been readily accessible. "Pentagon officials have rebuked public affairs officers who release casualty figures, and, until recently, U.S. Central Command did not regularly publicize the injured tally either," Kaplan wrote.

The difference between "hostile" and other injuries, according to Army spokesman Maj. Steven Stover at the Pentagon, is that "one is gonna get you a Purple Heart, and one's not. One's for wounds inflicted by the enemy. It could be any type of injury inflicted by someone who intends you harm."

A United Press International investigation, published Oct. 20, revealed that many wounded veterans from Iraq, under care at places such as the Fort Stewart military base in Georgia, must wait "weeks and months for proper medical help" and are being kept in living conditions that are "unacceptable for sick and injured soldiers." One officer was quoted as saying, "They're being treated like dogs." The Army has said it is attempting to remedy the situation.

In *The New Republic*, Kaplan reported on the state of many injured soldiers at Walter Reed Army Medical Center. According to Kaplan, modern medicine and rapid response techniques allow many wounded soldiers to survive injuries that would have killed them in previous wars. Many of these wounded soldiers are left with debilitating injury or loss of limb. Newspapers that only track hostile combat deaths fail to capture the human toll of thousands of troops left injured and crippled, he wrote.

"The near-invisibility of the wounded has several sources," Kaplan wrote. "The media has always treated combat deaths as the most reliable measure of battlefield progress, while for its part the administration has been reluctant to divulge the full number of wounded."

Even now, when the injury information is easily available, many newspapers neglect to report or keep a tally, as an informal survey of some top papers has shown. This comes on the heels of reports Wednesday that attacks on American troops in Iraq had increased in recent weeks from an average of 15 to 20 attacks per day to about 20 to 25 attacks a day, with a peak at about 35 attacks in one day, according to the commander of U.S. forces in Iraq, Lt. Gen. Ricardo Sanchez.

According to an Oct. 3 report by UPI, nearly 4,000 soldiers had been medically evacuated from Iraq for non-combat reasons.

As for the tally of total deaths in Iraq, most of the media continues to only cite those killed in hostile action. On Oct. 20, for example, *The New York Times* reported: "Since President Bush declared an end to major hostilities in Iraq on May 1, 106 American soldiers have been killed." But this number represents only those killed in combat by hostile fire. A total of 200 American troops have been killed in this time period from all causes, such as vehicle accidents, drowning, and suicides, a figure that is rarely mentioned in the press.

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7.

Lasting head injuries on the rise in Iraq

http://www.duckdaotsu.org/cominghome_asyouwere.html

BAGHDAD, Iraq ‹ The soldiers were lifted into the helicopters under a moonless sky, their bandaged heads grossly swollen by trauma, their forms silhouetted by the glow from the row of medical monitors

laid out across their bodies, from ankle to neck.



U.S. Marines carry a wounded comrade to a waiting helicopter during the battle for the city of Husaybah, Iraq, on April 17. So far in April, more than 900 soldiers and Marines have been wounded in Iraq, more than twice the number wounded in October, the previous high.
ANDREW CUTRARO / AP

An orange screen atop the feet registered blood pressure and heart rate. The blue screen at the knees announced the level of postoperative pressure on the brain. On the stomach, a small gray readout recorded the level of medicine pumping into the body. And the slender plastic box atop the chest signaled that a respirator still breathed for the lungs under it.

At the door to the busiest hospital in Iraq, a wiry doctor bent over the worst-looking case, an Army gunner with coarse stitches holding his scalp together and a bolt protruding from the top of his head.

Lt. Col. Jeff Poffenbarger checked a number on the blue screen, announced it dangerously high and quickly pushed a clear

liquid through a syringe into the gunner's bloodstream. The number fell like a rock.

"We're just preparing for something a brain-injured person should not do two days out, which is travel to Germany," the neurologist said. He smiled grimly and started toward the UH-60 Black Hawk thump-thumping out on the helipad, waiting to spirit out of Iraq one more of the hundreds of Americans wounded here this month.

While attention remains riveted on the rising count of Americans killed in action < more than 100 so far in April < doctors at the main combat support hospital in Iraq are reeling from a stream of young soldiers with wounds so devastating that they probably would have been fatal in any previous war.

More and more in Iraq, combat surgeons say, the wounds involve severe damage to the head and eyes < injuries that leave soldiers brain-damaged or blind, or both, and the doctors who see them first struggling against despair.

For months the gravest wounds have been caused by roadside bombs < improvised explosives that negate the protection of Kevlar helmets by blowing shrapnel and dirt upward into the face. In addition, firefights with guerrillas have surged recently, causing a sharp rise in head wounds.

The neurosurgeons at the 31st Combat Support Hospital measure the damage in the number of skulls they open to get to the injured brain inside, a procedure known as a craniotomy. "We've done more in eight weeks than the previous neurosurgery team did in eight months," Poffenbarger said.

Numbers tell part of the story. So far in April, more than 900 soldiers and Marines have been wounded in Iraq, more than twice the number wounded in October, the previous high. With the tally still climbing, this month's injuries account for about a quarter of the 3,864 U.S. servicemen and women listed as wounded in action since the March 2003 invasion.

About half the wounded troops have suffered injuries light enough that they were able to return to duty after treatment, according to the Pentagon.

The others arrive on stretchers at the hospitals operated by the 31st CSH. "These injuries," said Lt. Col. Stephen Smith, executive officer of the Baghdad facility, "are horrific."

By design, the Baghdad hospital sees the worst. Unlike its sister hospital on a sprawling air base located in Balad, north of the capital, the staff of 300 in Baghdad includes the only ophthalmology and neurology surgical teams in Iraq, so if a victim has damage to the head, the medevac sets out for the facility here, located in the heavily fortified coalition headquarters known as the Green Zone.

Once there, doctors scramble. A patient might remain in the combat hospital for only six hours. The goal is lightning-swift, expert treatment, followed as quickly as possible by transfer to the military hospital in Landstuhl, Germany.

While waiting for the helicopters, the Baghdad medical staff studies photos of wounds they used to see once or twice in a military campaign but now treat every day. And they struggle with the implications of a system that can move a wounded soldier from a booby-trapped roadside to an operating room in less than an hour.

"We're saving more people than should be saved, probably," Lt. Col. Robert Carroll said. "We're saving severely injured people. Legs. Eyes. Part of the brain."

Carroll, an eye surgeon from Waynesville, Mo., sat at his desk during a rare slow night last Wednesday and called up a digital photo on his laptop computer. The image was of a brain opened for surgery earlier that day, the skull neatly lifted away, most of the organ healthy and pink. But a thumb-sized section behind the ear was gray.

"See all that dark stuff? That's dead brain," he said. "That ain't gonna regenerate. And that's not uncommon. ... We do craniotomies on average, lately, of one a day."

"We can save you," the surgeon said. "You might not be what you were."

Accurate statistics are not yet available on recovery from this new round of battlefield brain injuries, an obstacle that frustrates combat surgeons. But judging by medical literature and surgeons' experience with their own patients, "three or four months from now, 50 to 60 percent will be functional and doing things," said Maj. Richard Gullick.

"Functional," he said, means "up and around, but with pretty significant disabilities," including paralysis.

The remaining 40 percent to 50 percent of patients include those whom the surgeons send to Europe, and on to the United States, with no prospect of regaining consciousness. The practice, subject to review after gathering feedback from families, assumes that loved ones will find value in holding the soldier's hand before confronting the decision to remove life support.

"I'm actually glad I'm here and not at home, tending to all the social issues with all these broken soldiers," Carroll said.

But the toll on the combat medical staff is itself acute, and unrelenting.

In a comprehensive Army survey of troop morale across Iraq, taken in September, the unit with the lowest spirits was the one that ran the combat hospitals until the 31st arrived in late January. The three months since then have been substantially more intense.

"We've all reached our saturation for drama trauma," said Maj. Greg Kidwell, head nurse in the emergency room.

On April 4, the hospital received 36 wounded in four hours. A U.S. patrol in Baghdad's Sadr City slum was ambushed at dusk, and the battle for the Shiite Muslim neighborhood lasted most of the night. The event qualified as a "mass casualty," defined as more casualties than can be accommodated by the 10 trauma beds in the emergency room.

"I'd never really seen a 'mass cal' before April 4," said Lt. Col. John Xenos, an orthopedic surgeon from Fairfax, Va. "And it just kept coming and coming. I think that week we had three or four mass cal's."

The ambush heralded a wave of attacks by a Shiite militia across southern Iraq. The next morning, another front erupted when Marines cordoned off Fallujah. The engagements there led to record casualties.

"Intellectually, you tell yourself you're prepared," said Gullick, from San Antonio. "You do the reading. You study the slides. But being here ... it's just the sheer volume."

In part, the surge in casualties reflects more frequent firefights after a year in which roadside bombings made up the bulk of attacks. At the same time, insurgents began planting improvised explosive devices (IEDs) in what one officer called "ridiculous numbers."

The improvised bombs are extraordinarily destructive. They're detonated by remote control and may be packed with such debris as broken glass, nails, sometimes even gravel.

To protect against the blasts, the U.S. military has wrapped many of its vehicles in armor. Troops wear armor as well, providing protection that Gullick called "orders of magnitude from what we've had before. But it just shifts the injury pattern from a lot of abdominal injuries to extremity and head and face wounds."

The skull of the Army gunner whom Poffenbarger was preparing for the flight to Germany had been pierced by shrapnel from four 155mm shells, rigged to detonate one after another in what soldiers call a "daisy chain." The shrapnel took a fortunate route through his brain, however, and "when all is said and done, he should be independent. ... He'll have speech, cognition, vision."

On a nearby stretcher, Staff Sgt. Rene Fernandez struggled to see from eyes bruised nearly shut.

"We were clearing the area and an IED went off," he said, describing an incident outside Ramadi where his unit was patrolling on foot.

The Houston native counted himself lucky, escaping with a concussion and facial wounds. Waiting for his own hop to the hospital plane headed north, he said what most soldiers tell surgeons: What he most wanted was to return to his unit.

By Karl Vick for
The Washington Post

8.

First significant statewide budget amendment for brain injury services succeeds

<http://www.braininjurysvcs.org/AMMEND.html>

The Virginia General Assembly had to make some hard decisions in the legislature this past year and BIS, Inc. and the Virginia Brain Injury Community will definitely benefit from their long arduous session. The Virginia Brain Injury Consortium, which is made up of providers of community-based brain injury services, put their advocacy efforts together with our wonderful communities and presented a statewide budget amendment that would benefit Virginians across the Commonwealth with community-based rehabilitation programs. This was the first major statewide budget amendment ever supported and the request was for \$4.5 million dollars.

Through the deluge of citizen letters, e-mails and meetings, local legislators began to get an idea of the overwhelming lack of services for people who have experienced a brain injury living in Virginia. Delegate John O'Bannon was able to provide the 7th floor conference room at the General Assembly on February 4th so that the Consortium could provide a breakfast reception that provided some education on the issue of brain injury.

Another significant fact that emerged in this year's session is the number of soldiers that have served in Iraq that are coming home with traumatic brain injuries. By February of this year, 560 members of the U.S. military had suffered a traumatic brain injury during the conflict in Iraq. A recent survey in the National news conducted at the Defense and Veterans Brain Injury Center at Walter Reed Army Medical Center reported that 60 percent of the 250 soldiers wounded in Iraq surveyed had sustained a brain injury. A sad note the consortium members reiterated was the fact that many will find few services available in their home communities. Nothing proved this point more than when Delegate John O'Bannon introduced members of the Armed Forces, who have sustained a traumatic brain injury while in combat areas, to legislators on the House Floor last February.

Delegates Phil Hamilton and Vince Callahan co-sponsored the budget amendment along with Senator Benjamin Lambert on the Senate side. Senator Wampler represented the final budget bill submitted and was extremely instrumental in the passage of the final amendment. The Senate and House approved \$750,000 for FY'2005 and \$1,000,000 for FY'2006.

Members of this Consortium included: Brain Injury Services, Inc., Brain Injury Services of Southwest Virginia, BIS' Westwood Clubhouse (Fredericksburg), Virginia NeuroCare's High Street Clubhouse (Charlottesville), Community Futures' The Mill House (Richmond), Commonwealth Support Systems' SEEK Program (Virginia Beach) and Eastern Shore Program and Brain Injury Association of Virginia. All of these programs will be provided some funds from the state budget amendment to help maintain their programs. In addition, there will be some funding used to open new programs in areas that presently have no existing services.

Most of the organizations that benefited from the passage of this budget amendment were at risk of losing some of the innovative programs developed through the acquisition of the Commonwealth Neurotrauma Initiative Grant. Due to the lack of limited dedicated funding in Virginia for people with brain injuries, these programs would have been forced to close. One program that would have closed down was BIS, Inc.'s first model Pediatric Brain Injury Case Management Program in Virginia.

BIS, Inc. will receive \$140,000 to use towards sustaining the Pediatric Program. This will provide the foundation to begin to leverage other funding to support this ever-growing program. We owe a great deal of gratitude to the legislators, community and advocates for making this happen.

9.

Wounded Soldiers

July 16, 2004

http://www.pbs.org/newshour/bb/health/july-dec04/wounded2_7-16.html

Susan Dentzer speaks with former Army Chief Warrant Officer John Sims and his doctors about the brain injury he sustained when his helicopter crashed during a flight into Iraq. Sims is one of many U.S. soldiers living with serious brain injuries as a result of accidents or attacks during the war.

The NewsHour Health Unit is funded by a grant from The Henry J. Kaiser Family Foundation.

SUSAN DENTZER: The occasion was a Memorial Day observance at a Veterans' Administration hospital in Richmond, Virginia. Patients listened to an Army band from their wheelchairs or gurneys. Then U.S. Senator George Allen spoke.



SEN. GEORGE ALLEN, R-Va: On this Memorial Day we do pay tribute, of course, to the fallen, and we also, though, in my view, ought to remember our living heroes. Some of y'all here today are some of those who are still bearing the burdens and scars of your service to the nation.

SUSAN DENTZER: One of those bearing scars was retired Army Chief Warrant Officer John Sims. But Sims's scars aren't visible. Since he's a recovering brain injury patient, they're inside his head.

Sims was a Maryland National Guardsman and an airline pilot in civilian life. Last year, he volunteered to join the Army's 101st Airborne Division as a maintenance pilot in Iraq. He was aboard a Blackhawk helicopter on his first flight into Iraq when the chopper crashed.



JOHN SIMS, former Army Chief Warrant Officer: One of the guys that dragged me out of the airplane said that when he got there, my helmet was already off, and I'd already hit my head on the instrument panel and fallen forward enough to crush the cyclic stick under my body with all the armor I was wearing.

Brain injury survivors need special care

SUSAN DENTZER: Now Sims is among a growing number of service members returning from Iraq with traumatic brain injuries. The wounds have been caused by a range of factors...from crashes like Sims's...to motor vehicle accidents... to blast injuries from explosive devices or rocket-propelled

grenades.

Thanks to new body armor, many of those who once died in such attacks are now surviving them. But along with their other wounds -- like missing limbs -- many have brain injuries as well.

Sims, who's fifty-one, was lucky. Severe brain injuries like his can kill or leave victims permanently disabled. But Sims is recovering -- though he'll probably never pilot a plane again.



Brain injury survivors can benefit from a growing understanding of how much a wounded brain can heal. A damaged brain can forge new neural connections to replace those lost by a blast, a bullet or a concussion. But that process doesn't always happen spontaneously.

So brain injury survivors like Sims often need special care to spur the growth of those connections -- and to help them recover speech or other functions they may have lost.

We asked Sims to help us reconstruct his recovery, and the long road back that brain injury patients travel.

After his accident on April 4, 2003, Sims was flown to a combat field hospital -- then on to a U.S. Navy hospital ship anchored in the Persian Gulf. Neurosurgeons operated to stem bleeding in his brain.

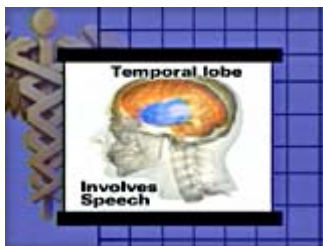


JOHN SIMS: My wife got the word from the doctor that, hey, you know, he's got this, that, and he's broken this and that, and, you know, our prognosis is that he'll be dead in the next day or two.

Sims' injury impaired his speech and memory

SUSAN DENTZER: But on April 21, still alive and in a coma, Sims was brought here, to Walter Reed Army Medical Center in Washington, D.C. It's the home of the Defense and Veterans Brain Injury Center -- a network of military, veterans' and community programs. Dr. Deborah Warden, the center's director, says it was created with three goals in mind.

DR. DEBORAH WARDEN: One was to provide care for the injured person, the soldier, the veteran, to provide clinical research, the understanding about what is the appropriate care to give, and also to give focused educational interventions to the survivors and to their family members as well.



SUSAN DENTZER: We asked Warden to show us how Sims's brain had been injured in the crash. She told Sims that he'd suffered a "closed" brain injury. That's different from a penetrating head wound, in which the skull and protective tissue around the brain are pierced.

But Warden explained that these closed injuries can still be devastating. Since the brain floats within the skull, it moves at a different pace from the skull under the extraordinary forces of a crash. The brain can also twist around on the much smaller brain stem.

Together, those movements stretched Sims's brain and its billions of neurons, or brain cells. Communication fibers that make up part of the neurons were stretched or chopped in two -- like a garden hose sliced down the middle, Warden said.

Among other things, those injuries impaired Sims's so-called executive functions. Those are the abilities to organize one's thoughts and work.

DR. DEBORAH WARDEN: There was also some localized, or what we call focal injury to this part, the left front temporal area.

SUSAN DENTZER: That's the area of the brain that involves speech. Sims's brain was badly bruised there and had bled inside the skull.



Sims spent two weeks in this hospital ward at Walter Reed, most of them in a coma. He told Warden that he remembered nothing of that period.

The struggle to regain his memory

JOHN SIMS: My memory cuts out about a day before the accident. I remember the day before pretty well, but I don't remember briefing for the mission, I don't remember preparing for the mission, I don't remember anything of the mission.

The other pilot that I was flying with, neither one of us remembers exactly which one of us was flying the airplane at the time of the accident.

SUSAN DENTZER: By early May of last year, Sims had emerged from his coma and was ready to start rehabilitation. He was transferred to the McGuire VA Medical Center in Richmond, another institution in the brain injury network.

Dr. Timothy Silver, McGuire's chief of physical and rehabilitative medicine, told us Sims was in an agitated state typical of brain injury patients.



DR. TIMOTHY SILVER: They don't really understand what's going on to them and why folks are gathering around them, and their threshold for stimulation is very low.

If you come in and you turn the lights on, they may use foul language or whatever, you know, agitated type reflexive behavior will come out of them.

SUSAN DENTZER: Clinical nurse specialist Marian Baxter told us Sims also experienced post-traumatic stress -- including flashbacks to the crash.

MARIAN BAXTER: If you ask John now, he couldn't tell you what happened in the accident. But when he first came to us in this agitated phase, he was crying out about the helicopter, and about the accident, and trying to save people, and it definitely was not usual.

SUSAN DENTZER: During our return visit to the VA, speech pathologist Micaela Cornis-Pop told Sims that the bruise on his brain left him with an inability to understand or formulate language.

MICAELA CORNIS-POP: You were trying to tell me a word or sometimes a whole sentence, but you were not really aware that you were only using the sounds of English and not necessarily the words of English.

You might have picked up this orange and tell me it was an orange, or you might have told me "tum," or something that was not an English word at all.

SUSAN DENTZER: Sims has no memory of that period. So Cornis-Pop showed him the exercises he performed to help him recover his speech and thinking skills.

MICAELA CORNIS-POP: Like John, will you please show me where the clock is - show me the clock -- very good - and show me the cookies -- very good.



SUSAN DENTZER: Sims's VA caregivers told us that, by the time seven weeks had passed, he was a new person. His memory had returned and his speech was close to normal.

By the end of June, Sims was well enough to leave the VA but not to return home. So he came here, to Charlottesville, Virginia, to stay in a group home like this one with other brain-injured patients. The home is part of Virginia NeuroCare, a community-reentry program that was Sims's last stop on the Defense and Veterans' Brain Injury Network.

Sims also worked part-time in a used bookstore Virginia NeuroCare operates to help patients recover thinking and work skills.

JOHN SIMS: It's our job to come in here, locate the book, get it out. We bag it up, you know, fill out the proper shipping paperwork, and then, you know, have one of the supervisors check it and take it down to the post office to have it moved off.

SUSAN DENTZER: Sims explained why that was good therapy for him.

JOHN SIMS: After you've been in a hospital for a while, being treated for a while, being able to get into a situation and be controlled, even if it's a minor thing like getting a book on the shelf, doing that for the afternoon left you with a basic positive feeling about the way the day went.

Many survivors also suffer from depression

SUSAN DENTZER: Sims needed any positive feelings he could muster. Dr. Daniel Slater, his physician at Virginia NeuroCare, told us Sims was depressed. He prescribed Zoloft, an antidepressant.



DR. DANIEL SLATER: Some say as high as 60 percent of our patients have depression. It's pretty natural to think where is my life going after I leave this place, after such a huge change.

JOHN SIMS: I had miserable feelings when I first got here because I didn't know exactly what was happening. I had spent my entire adult life working in flying and, you know, because of my injury I was permanently grounded, and I didn't know what condition I'd be under, you know, lifestyle or income or anything like that, or what I would do for continuing or replacement employment or anything like that.

SUSAN DENTZER: Sims finally left Virginia NeuroCare last December and came home to northern Virginia. His wife, Violeta, left for Europe soon after to care for her sick mother.

Now, fifteen months after the crash, Sims feels grateful for having survived.

JOHN SIMS: When I run into people that I used to work with in the airline I say, 'Hey, I got my ticket. And I opened it up and the destination was a crash. But I got a little coupon that went along with it that says, 'Hey, you get to go home anyway.' So to me, that's a winner.

SUSAN DENTZER: For now, Sims is retired and temporarily living on three-quarters of his former pay. He still has trouble remembering names, and performing the math that, as a pilot, he once did routinely in his head. He's looking for a new job, but so far hasn't had much success.





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Brain trauma takes toll on soldiers

Posted on Wed, May. 26, 2004

<http://www.tallahassee.com/mld/tallahassee/news/world/8766903.htm>

By **JOHN SIMERMAN**
Contra Costa Times

PALO ALTO - Alec Giess clicked off an episode of "M*A*S*H" and rose gingerly from his hospital bed, carrying nothing but the dull, merciless pain on the right side of his head.

"Punch drunk," is how the Oregon National Guardsman describes the muddle in his brain.

Rigoberto Ocegüera feels that way, too. Sometimes, the 22-year-old Army specialist cries for no reason, just blurts out tears. He's also found God, though he can't quite explain how or why.

It's been five months and counting since 1st. Sgt. Giess, 44, was ejected from the passenger seat of a 5-ton Army truck that swerved to avoid what might have been a roadside bomb and flipped on an oil slicked road in southern Iraq.

Ocegüera, from Chico, was headed for a short leave aboard an Army Chinook helicopter on Nov. 2 when insurgents near Fallujah struck it down, killing 16 soldiers and wounding 26 others.

Their new duty station, in military parlance, is here at the Veterans Administration hospital, in one of four VA traumatic brain injury sites nationwide.

Here come the invisibly damaged, those with brains that, as Ocegüera puts it, "get confused and start wobbling around." Their numbers are growing.

The swelling toll of dead and wounded U.S. soldiers has the Palo Alto center bracing for more with traumatic brain injuries. Last week, the center was directed to add beds to meet the demand.

Traumatic brain injuries are nothing new in war zones. But Iraq is producing a higher rate of returning wounded than previous wars, military medical officials say. At Walter Reed Army Medical Center alone, doctors have identified more than 280 cases of traumatic brain injury in the past year, most from Iraq.

Medical officials credit better body armor for keeping brain-injured patients alive, and better screening. But they also cite the impact of the weapons of choice among Iraqi insurgents - roadside bombs and rocket-propelled grenades.

"The nature of the explosive devices are different than some of the past conflicts," said Dr. Laurie Ryan, assistant director of research for the Defense and Veterans Brain Injury Center at Walter Reed. "We're seeing a lot of blasts."

Doctors in Palo Alto and three other VA sites are studying blast injuries and treatment for brain-injured soldiers, in a coordinated venture launched in 1991 and backed by \$7 million in annual funding.

Traditionally, closed brain injuries have been overlooked as doctors tend to more visible wounds, said Dr. Henry Lew, medical director of the traumatic brain injury center at the Palo Alto VA.

"They really need to be helped more, because they look normal from the outside, but if you pay attention, you know they're slow," he said.

Giess spoke in languid, distant tones as he sat on a bed in the center's physical therapy room. He feels "cloudy," he said. Like Ocegüera, he searches the air for words as he recounts the punishment his head took on the road.

"They found me underneath a truck. I remember a little bit because it hurt," he said. His Kevlar helmet saved his life, he said. Giess, a contractor in civilian life, broke his collarbone and crushed a vertebra. He walks like he talks, slowly, with a drooping shoulder.

After returning from Iraq, strapped down on a Christmas Eve flight with wounded soldiers stacked four rows high, Giess was sent home to Seaside, Ore. Only then did anyone -- his wife and two children -- notice the memory loss and other signs of brain injury.

"He kept saying his ears were constantly ringing. Sometimes he'd say things that were out of character," said his wife, Shana Giess. "I thought, 'OK, he just lived almost a year in conditions you couldn't imagine, with all these guys smoking and cussing. Has the personality changed?'"

But her husband would often forget things, and the diagnosis, when it finally came, made sense, she said.

"He's definitely slower than he was. He has a hard time finding words now. He'll know what he wants to say, but he just can't get the right word."

Dr. Lew said the center is trying to avoid the mistake of sending brain-injured patients home to face the "hidden consequences" of their injuries. The analogy to drunkenness is apt, he said. Brain injury patients often show a loss of inhibitions.

"The next time you hear about them, they're in prison, or getting into fights in bars, getting into confrontations."

Ocegüera, a second-degree black belt in Tae Kwon Do, had heavy bleeding in his head and doctors removed his spleen. He also suffered what doctors call an "open-book" hip fracture: His hips split outward. A metal rod now runs through them.

"If I walk out a lot, maybe in a full moon, I can feel the metal ... I have really good reception on my cell phone."

The brain static remains. He said he can't recall anything two weeks before the accident, nothing during it, and nothing a few weeks after. Someone had to tell him that he re-enlisted just before the crash.

"I don't remember the accident and stuff," he said. "But I feel it. I still get feelings, like death. I feel like I came back to life."

About 1.5 million people sustain traumatic brain injuries each year in the United States. Symptoms include memory loss, inability to control emotions, irritability, sleep troubles, anxiety and depression.

Among the war wounded, the injuries range from moderate concussions to more severe damage. For the severe, overlapping symptoms of post-traumatic stress disorder often complicate diagnoses.

Brain injury patients tend to make their most dramatic strides in the first six months, and Oceguera and Giess said they have come a long way. But the damage endures in many cases, Lew cautioned.

"The way I explain it to the families," he said, "is from the day he was injured, he will not become the same person as before. It's a miracle he's still alive. You have to treat it like a new birth date."

Giess hopes to go home this summer. Maybe he'll launch a fish packing business, if he can. "I'll have to start real slow."

Oceguera hopes maybe to coach Tae Kwon Do. He recently received a Purple Heart for his combat wounds.

"It's something to remember it."

Even if he can't.

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11.

NBCSandiego.com

Brain-Injured Local Marine Struggles To Recover

Brain Injuries Affect Majority Of Injured Soldiers

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SAN DIEGO -- Jason Poole -- a Marine only 10 days away from coming home from Iraq when he suffered a violent brain injury -- is just learning to walk and perform everyday tasks.



IMAGES: [Marine Struggles To Recover](#)

Poole, 21, can't remember many things about his former life, including the June 30 explosion in Iraq that caused his traumatic brain injury -- or TBI, as doctors refer to it. He also can't remember the base at which he was stationed: Camp Pendleton.

Nearly 8,000 troops have been wounded in Iraq with as many of two-thirds of them returning home with a brain injury, according to Dr. Henry Lew, of the VA Hospital in Palo Alto where Poole is being treated. One reason why the percentage is so high is that improvements in body armor mean soldiers are more likely to survive attacks than they would have been 10 years ago.



FeedRoom

"The thing that's really particular about this war (is) the improvement in body armor technology, (meaning) the internal organs are very well protected," Lew said.

In many cases, brain injury cases go untreated. Alec Giess, 45, who suffered from TBI after he was thrown from his humvee, has signs of mental incapacity even while he fails to show signs of physical injury.

"I just wanted to go home, and be done with it and get on with my life and I actually just thought I had a concussion," Giess said. "(But) everything's a lot different. I see stuff a lot different, and I act a lot different than I used to."

It wasn't until later that he realized he couldn't even play a simple children's game on the computer, Giess said. He is currently being treated at the Palo Alto VA Hospital, along with Poole.

The Palo Alto VA Hospital is one of four in the country with a traumatic brain injury unit.



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12.



WMU gearing up for influx of injured soldiers

Oct. 9, 2004

KALAMAZOO--For the first time since the Vietnam War, blindness and low vision experts, including those at Western Michigan University, are gearing up for an influx of newly blinded veterans, this time from Iraq.

Dr. Paul E. Ponchillia, chair of the WMU Department of Blindness and Low Vision Studies, says his department is mobilizing to address the latest effects of the war in Iraq. WMU is the home of the oldest and largest graduate level personnel preparation program for rehabilitation teachers, orientation and mobility instructors, teachers of children with visual impairments and rehabilitation counselors specializing in blindness and low vision. The Veterans Administration hires many WMU graduates who are rehabilitation teachers or orientation and mobility specialists.

"Our graduate students study multiple disabilities in addition to blindness so they can better serve people who experience vision loss," says Dr. Susan Ponchillia, coordinator of the rehabilitation teaching program at WMU. "However, this new situation in the aftermath of conflict in Iraq, as well as in Afghanistan, will require even greater skills and more teamwork with other healthcare professionals. What we have are very young soldiers, often still in their teens or early 20s, who survive roadside bombings, but who have multiple permanent injuries. Adjustment to blindness is difficult for anyone. However, waking up in a military hospital missing a hand or leg, or having a brain injury combined with blindness is even more difficult for anyone to face. So we are preparing our graduates for the multiple challenges of working with newly blinded soldiers with other physical injuries."

Events taking place in Iraq are expected to increase the likelihood of multiple injuries to the head, face and limbs, experts say. Kevlar body armor, now being issued to all U.S. soldiers, is reducing the number of deaths in combat. However, battlefield injuries involving the head, hands, arms, feet or legs comprise almost 60 percent of the nonfatal wounds received by men and women in the military. Roadside

bombings made of improvised explosives throw shrapnel and dirt upward, tearing into unprotected parts of the body.

According to Veterans Administration Blind Rehabilitation Center officials, wounded soldiers are returning with multiple injuries. Often an injury that causes blindness also results in traumatic brain injury, making recovery more difficult. Head injuries can affect the normal adjustment to blindness by causing behavioral and cognitive issues, further complicating rehabilitation and return to a normal life. In addition, men and women wounded in battle or roadside bombings with severe injuries to their arms, hands or lower extremities may lose limbs.

There are already more than a dozen soldiers with traumatic brain injury who have also lost their sight. It is unlikely all will receive blind rehabilitation services at the same time, but since most VA blind centers hold only about 20-25 blind veterans, the number of newly blinded soldiers is significant.

The Veterans Administration, recognizing the complexity of serving soldiers who have lost sight and also received brain injuries has developed a sequential plan to first send brain-injured soldiers to the VA brain injury unit in Richmond, Va. When the soldiers are ready for blind rehabilitation services, they will go to the Western Blind Rehabilitation Center in Palo Alto, which has been designated as the unit to provide specialized blind rehabilitation services to brain injured blind soldiers.

Paul Ponchillia reports a chronic shortage of personnel in all areas of blindness and low vision expertise. "So we anticipate a further shortage of graduates to fill positions at blind centers, such as those operated by the Veterans Administration," he says. Federal funding to help support more personnel preparation has been made available to address the shortage, and WMU's recruitment efforts have intensified.

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13.

Traumatic Injury: The Legacy of the US War in Iraq

Part One: Brain Injury

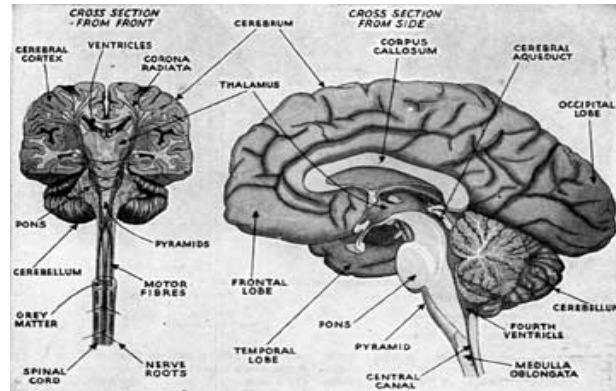
<http://www.tf.org/tf/featured/01-29-04traumaticinjury.html>

The Trauma Foundation at San Francisco General Hospital since 1975

The war in Iraq is creating a new generation of disabled veterans. Advances in body armor and kevlar helmets have reduced the number of fatal gunshot wounds but leave limbs vulnerable to improvised explosive devices, land mines and mortar attack.

Each day, approximately 10 U.S. soldiers are injured, many with serious burns and limbs too damaged to save. The incidence of traumatic brain injury among these troops has risen dramatically. Dr. Laurie Ryan, a neuropsychologist and the assistant director for research at Walter Reed Army Medical Center, notes that, "Among 105 casualties assessed between June and October, doctors discovered about two-thirds, or 67 percent, to have brain injuries" ([Army News](#)). This percentage accounts only for casualties whose injuries are serious enough to require evacuation from Iraq and only those identified by medical staff as being at risk for brain injury. A random sampling of all troops would reveal a much higher incidence of brain trauma. (see [Army News](#), [Washington Post](#)).

Diagnosis can be difficult even when head injury is apparent or the patient is able to describe a concussive head injury to their doctors. Even mild brain injury can cause depression, reduced cognitive functioning, nausea, sleep disturbance, erratic behavior, and violent mood swings. These disabilities are exacerbated by misdiagnosis, lack of treatment, the public's perceptions of brain injury and mental illness. For brain injured veterans, the lack of physical signs and the diffuse nature of symptoms is often met with skepticism, considered to be psychological, or worse, malingering.



How many young veterans will live the rest of their lives with debilitating brain injury? How will these veterans fare in the routines of daily life? Will they be able to maintain employment? How will their injuries impact their families, friends, co-workers, and communities?

Many of these injuries could be prevented or reduced with the use of cushioned helmets which are now only available to a fraction of the U.S. troops. Everything possible should be done to acknowledge the severity of combat injuries and ensure that brain injury is detected and treated now, and throughout these veterans' lifetimes. **The best prevention, however, is an end to this war and the doctrine of preemptive war.**

Peace.

*This is the first in a series of stories on Injury and the war in Iraq.
Next: Civilian Injuries and the impact on Iraqi children.*

For More Information:

[Brain Injuries High Among Iraq Casualties](#)
http://www4.army.mil/ocpa/read.php?story_id_key=5445

[Press Underreports Wounded in Iraq](#)
[Few Newspapers Tally Injuries, Accidents](#)
<http://www.commondreams.org/headlines03/1023-06.htm>

[Doctors Seeing More Brain Injuries From Iraq](#)
[Protective Gear May Be Contributing to Rate Higher Than in Previous Wars](#)
<http://www.washingtonpost.com/wp-dyn/articles/A62523-2003Dec13.html>

[Iraq wounded: Ranks swell, unheralded](#)
[Little attention is given to a new generation of vets who must cope with injury, disability](#)
<http://www.philly.com/mld/philly/news/7327199.htm>

[CDC- National Center for Injury Prevention and Control: TBI resources at CDC:](#)

<http://www.cdc.gov/ncipc/factsheets/tbi.htm>

[Traumatic Brain Injury Resource Guide](http://www.neuroskills.com/)

<http://www.neuroskills.com/>

[National Resource Center on Traumatic Brain Injury](http://www.neuro.pmr.vcu.edu/)

<http://www.neuro.pmr.vcu.edu/>

[Traumatic Brain Injury National Data Center](http://www.tbinc.org/)

<http://www.tbinc.org/>

14.

washingtonpost.com

Doctors Seeing More Brain Injuries From Iraq

Protective Gear May Be Contributing to Rate Higher Than in Previous Wars

By Steve Vogel

Washington Post Staff Writer

Sunday, December 14, 2003; Page A03

<http://www.washingtonpost.com/ac2/wp-dyn?pagename=article&contentId=A62523-2003Dec13¬Found=true>

Staff Sgt. Maurice Craft's leg was gone, just a bandaged stump poking out from the sheets of his bed at Walter Reed Army Medical Center. The doctor who had just entered his room was looking for evidence of something harder to find: an injury to the soldier's brain.

"Do you feel you remember what happened?" asked Louis French, a neuropsychologist.

He was probing for indications of memory loss, or fogginess. French and his colleagues at the Defense and Veterans Brain Injury Center at Walter Reed suspect that soldiers wounded in Iraq are suffering brain trauma at a higher rate than in previous conflicts -- a trend that could reflect not just the type of warfare they're encountering but the protective gear they wear.

"I remember everything," Craft, 26, replied quickly. It happened about 7:30 in the morning on Nov. 25. He and his platoon from the 82nd Airborne Division were patrolling a road in Baghdad, looking for roadside bombs. They found one, and it exploded near Craft's Humvee.

"I felt like someone was vacuuming me out of a steel box," Craft said, lying in his bed. "I felt the worst pain I've ever felt in my life. I felt my leg crushing."

French was struck by the soldier's words. "This description of being sucked out, it's something other people have repeated," he said outside Craft's room.

The shock wave that accompanies explosive blasts could account for the vacuuming sensation Craft experienced. It also rattles heads, prompting many of the brain injuries doctors have seen at Walter Reed. The soldier would need further evaluation, the doctor decided.

"With his description, it's the kind of case I'd want to follow," French said.

Of 155 wounded soldiers at Walter Reed examined by the center's staff between August and early December, 96 -- or 62 percent -- have suffered a traumatic brain injury. In past conflicts, based on data gathered from the Korean and Vietnam wars, about 20 percent of all casualties suffered brain injuries.

French stressed that, unlike the data from past wars, the current figures do not represent a random sample because the doctors are screening only those soldiers they identify as being at risk of brain trauma based on the type of injury they suffered, including those from explosions, vehicle accidents and gunshot wounds.

The findings "suggest to me it's happening more often, but we don't have firm numbers yet to back it up," said French, assistant director for clinical services at the center. The center is surveying the casualties who arrive almost every week at the hospital in Northwest Washington.

One factor, doctors say, could be the nature of the war in Iraq. Many of the injuries to U.S. troops are caused by improvised explosive devices and rocket-propelled grenades -- weapons that are more likely to cause brain trauma than a bullet.

"Certainly we have seen a high percentage of blast-related injuries," said Laurie Ryan, a neuropsychologist with the center. "Given this, we may well end up seeing a higher number of brain injuries."

Moreover, doctors at Walter Reed suspect that the Interceptor body armor that has saved the lives of many soldiers in Iraq has meant that there are more survivors with injuries to the head, which is less protected than the torso. Ironically, the protection afforded the torso has left the brain as the most vulnerable organ, particularly to concussive impact.

The brain injury center is helping analyze whether a new helmet being worn by some U.S. troops is better suited for protecting soldiers from concussive impact than the standard Kevlar helmet most soldiers wear. The new Modular Integrated Communication Helmet includes a padded suspension system, but it is worn only by Army Rangers, various special operations forces, Marine reconnaissance units and some Army paratroopers.

The helmets worn by most troops "are great at stopping flying shrapnel," said French, but soldiers complain that they are not designed for absorbing concussive impact. "It's like having a pot on your head," said Army Staff Sgt. Tyler Hall, a Walter Reed patient who suffered serious brain trauma and other injuries from a booby-trap explosive.

The brain injury center, a collaboration between the Defense and Veterans Affairs departments, was created after the Persian Gulf War as part of an effort to better treat and research neural trauma suffered by soldiers and veterans.

Some cases of brain trauma are easy to diagnose, particularly when a soldier's head is injured by penetrating shrapnel or blunt force. But damage done by a blast's shock wave can be more difficult to detect, doctors said.

Brain trauma can cause a broad range of physical, cognitive, emotional and social problems for victims.

"I'm having memory problems, nightmares. It's a long list," said Sgt. Gregory D'Angelo. The soldier with the 432nd Transportation Company was driving a truck in Iraq this summer when it came under fire. The truck crashed trying to escape, and D'Angelo's head hit the windshield at 60 mph, French said.

D'Angelo, who is undergoing neuropsychological testing to measure his injury, shrugged helplessly when French asked him how long he had been at Walter Reed. It had been only a week, but he had no recollection of arriving.

With early detection, treatment and therapy, many victims of brain trauma "can be expected to recover fully," French said.

Yet, he added, "brain injuries are sometimes put aside as not being as important or life threatening" as more obvious cases of trauma.

At Walter Reed, many of the soldiers French is evaluating have also suffered terrible injuries to their extremities. Of the first three soldiers French visited in the hospital's orthopedic ward on a recent afternoon, each, including Craft, had lost a leg.

Hall, with the 14th Combat Engineer Battalion, was severely injured near Tikrit in August when the five-ton truck in which he was riding was blown up by a buried artillery shell. Thrown violently by the explosion, Hall landed on his face, suffering severe injury. His hands were badly burned, and his left leg so shattered that it was eventually amputated.

Much of his treatment at Walter Reed has concentrated on preparing his leg for a prosthesis and healing his burns. But the trauma to his brain was also causing problems. Hall had headaches and nausea. He suffered equilibrium imbalance and had difficulty concentrating.

"I was having a hard time," Hall said. "Riding in a car, I was totally out of it. I'd get out and be totally nauseous. I was having trouble focusing."

Doctors placed a shunt in his head to drain excess cerebrospinal fluid and relieve pressure on his brain. "Most of the fogginess went away," Hall said.

"Sergeant Hall is facing many different things, but he's made remarkable progress," French said.

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15.

Philadelphia Daily New online

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Iraq wounded: Ranks swell, unheralded

Little attention is given to a new generation of vets who must cope with injury, disability.

By Ken Dilianian

Inquirer Staff Writer

<http://www.philly.com/mld/philly/news/7327199.htm?1c>

LANDSTUHL, Germany - Nov. 15 was just another Saturday for Spec. Jason Gunn of Northeast Philadelphia. Iraq annoyed him but no longer scared him the way it did when he arrived in June, driving an Abrams tank into postwar Baghdad with the First Armored Division.

He had been shot at and mortared, and sometimes he wondered just what U.S. troops were doing there amid the decrepitude and violence. But he took solace in the laughter of Iraqi children and in the clear evidence that things in his battalion's northern Baghdad sector were improving.

Tanks are unwieldy on city streets, which is why he found himself at the wheel of a far more vulnerable Humvee that day. He drove down the middle of the road, to be as far away as possible from the blast of a roadside bomb, the kind that has killed so many American soldiers.

He doesn't recall hearing the explosion.

"I felt all this tremendous pressure coming down on top of me," Gunn, 24, recalled from his hospital bed in Germany last week. "Everything was just, like, real quiet. Everything got real dark and glazy, and then I just felt all this pain. And the next thing I knew, I could feel the Humvee just whipping around, and we hit the guardrail and we finally stopped, and that's when I opened my eyes.

"Everything was just smoky. I looked at myself - I was still smoking. There was blood all over the place, and I just thought, you know, just, I thought I was going to die."

One friend in the Humvee was already dead, he said, and one would die later, so powerful and lethal was the blast from the jerry-built 90mm mortar round. Those two joined the ranks of the 422 U.S. soldiers killed in action since the start of the Iraq war.

But Gunn, who was treated at the scene and flown out by helicopter, became part of a much larger, though less scrutinized group: the wounded in action.

According to the Pentagon, 2,054 American soldiers had been wounded by hostile acts in Iraq as of Friday, including more than 1,200 hurt after major combat operations were declared over on May 1.

Although that number is small compared with Vietnam and other major wars, it will grow steadily at the current rate of about 10 wounded per day, given the expected timetable of the U.S. occupation of Iraq. A new generation of disabled veterans promises to be among the painful, expensive legacies of the Iraq war, albeit one that hasn't received much attention. While the Pentagon regularly announces soldier deaths, it rarely identifies the injured, who often arrive in the United States at night and deplane out of sight of news cameras.

The attack on Gunn, a graduate of William Penn High School, merited a four-sentence Army news release that didn't mention his name.

He was lucky. His arms and legs were torn by bits of jagged metal, and at the moment he can barely walk. But he still has all his limbs, and he is expected to recover fully.

The same can't be said for hundreds of others who have come through the Landstuhl Army Medical Center, which is where all soldiers injured in Iraq and Afghanistan end up if they require treatment beyond what can be given in the theater where they were wounded.

Aided by bullet- and shrapnel-stopping body armor and unprecedented battlefield medical care, soldiers are surviving attacks in Iraq that would have killed them in previous wars. Many of them, however, are left with disabling and sometimes disfiguring injuries in places body armor doesn't cover: the arms, legs, face, groin.

"Body armor and Kevlar helmets have dramatically increased the survivability from torso hits and head hits," said Maj. Brent A. Johnson of DeWitt, Iowa, medical director of what Landstuhl calls the Deployed Warrior Medical Management Center. "The result of that is... we get a higher percentage of extremity wounds."

Landstuhl is a high-tech way station, a place soldiers go for a few weeks of intensive treatment before they are transferred somewhere closer to home, such as the Walter Reed Army Medical Center outside Washington. Landstuhl's permanent staff of 120 Army and Air Force doctors, plus reservists brought in for the Iraq war, see a daily parade of young troops with missing limbs, severe shrapnel wounds, and horrible burns. It takes a toll.

"Very few of the people that I see will actually be back to what they used to be," said Capt. Justin Barratt, a native of Phoenix who got his medical degree at Temple University in 2000.

"Imagine a kid who has lost both arms, asking how he is going to provide for his family," said Marie Shaw-Fievez, the hospital's Belgian-born chief spokeswoman. "It's gut-wrenching."

In addition to those injured in hostilities, Landstuhl treats deployed soldiers hurt in accidents or waylaid by run-of-the mill ailments, from kidney stones to pneumonia. As of Thursday, a total of 8,093 military personnel have been flown from Iraq to Landstuhl for treatment, Shaw-Fievez said.

Staff members say they are continually impressed by the fortitude their patients display in the face of what could be spirit-crushing injuries.

"I'm always amazed at how up they really are, and how positive they are," said Col. Ben Todd, a chaplain. "I don't know that I would be, but they are."

You won't find much self-pity at Landstuhl. You certainly won't find it talking with Spc. Matthew Van Buren, 21, of Kansas City, Kan., in a wheelchair and awaiting surgery to close a huge cavity in his leg caused by a chunk from a roadside bomb. Clutching a fatigues-clad stuffed turtle given to him by his brother when he completed basic training, Van Buren chuckled as he explained how pieces of shrapnel work their way out of his body, sometimes popping out as he sleeps.

Van Buren, also of the First Armored Division, was hit Nov. 8, in an attack that killed another soldier. "It just riddled my truck with shrapnel," he said.

Like Gunn, Van Buren says he believes in the mission of U.S. troops in Iraq and is glad to have been a part of it.

"There's a group of real good people over there, and they want just what Americans want - a job, security for their family, a nice life," he said. "The army is trying to help them get that."

Neither Van Buren nor Gunn will be going back to Iraq, but both say they will remain in the military. Gunn's next stop probably will be a rehab facility in Germany, where his unit is based and he has a steady girlfriend.

"I'm glad I don't have to go back, but in a way I'm kind of disappointed, because I won't know what's going on with the rest of the guys I was over there with," said Gunn, who enlisted in 1997.

As for the Purple Heart that comes with being wounded in combat, he said, "It's the one medal I wasn't looking forward to getting... but I'm glad I'm getting it. I feel lucky."

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<http://abcnews.go.com/Health/print?id=145001>

More Troops Returning From Iraq With Brain Trauma

Soldiers From Iraq Must Undergo Extensive Rehab

By JUDY MULLER

Oct. 8, 2004 - — War injuries in Iraq are usually obvious — from shrapnel wounds to lost limbs. But one type of wound is not so obvious. In fact, it often goes undetected.

Consider the case of Army Sgt. Alec Giess, now recovering at a Veterans Affairs hospital in Palo Alto, Calif.

Giess served in an engineering unit that built housing for Iraqis. He was riding in a truck when the driver swerved to miss an explosive device.

Giess was pinned underneath the vehicle. When they dug him out, he had lost consciousness, but not his cigar.

"The cigar was blown up in my face and I was gritting it between my teeth," he said.

Dramatic Changes

Giess, 45, soon healed from his obvious injuries, including several cracked vertebrae and a broken collarbone. But when he went home to Oregon on leave, his wife noticed dramatic changes in his behavior. He would erupt in anger and fail to complete the simplest tasks.

"She couldn't understand, actually, what was going on," said Giess. "She was afraid of me. I thought I was all right, and my behavior was not all right. Not the way I was when I left."

Giess was finally diagnosed with TBI — traumatic brain injury. It is sometimes called "the invisible handicap." Symptoms include irritability, poor memory, lack of inhibition, anxiety, confusion, unusual fatigue and persistent headaches. These problems are often dismissed as postwar stress reactions.

While an estimated 20 percent of injured veterans in past wars suffered from TBI, doctors say more than 60 percent of injured troops returning from Iraq may be afflicted. The reason: Troops have new body armor that saves lives by protecting the torso, but not the brain.

A Normal Life

Marine Lance Cpl. Raymond Warren took shrapnel to his legs, to his stomach, to his arms and to his head, which made the TBI diagnosis easy. He lost much of his memory, and must wear a protective helmet until his skull heals.

Warren could neither walk nor talk when he arrived at the Palo Alto facility in July. Now he can do both. But he has dreams of much more. "Get back to running, drive a car, stuff like that," he said. "Just the normal life of Raymond Warren."

But a "normal life" is a long way off — and may look very different than his "normal life" of the past.

Warren is one of more than 350 veterans from Iraq and Afghanistan now being treated for traumatic brain injury at a handful of VA facilities. But as wounded veterans return, the need for more beds is enormous.

"We're getting more and more every day, and it's very frustrating because we don't know when it will end," said Stephanie Alvarez, nurse manager at the Palo Alto VA hospital.

Learning to Shave — Again

The rehabilitation requires months of work with a skilled team. It also requires a great deal of patience. Warren, for example, needed to relearn basic tasks, from brushing his teeth to shaving. A chart reminds him what to do and when to do it.

"The majority of them, they're incontinent, both bowel and bladder, so we have to retrain them when to use the toilet, how to use the toilet," said Alvarez.

In all TBI patients, the frontal lobe — an area of the brain that governs impulse control — is affected. These patients often have trouble focusing if there are any distractions in the room.

"I'm a little frustrated," said Warren. "Too much going on right now. [It] boggles my mind sometimes."

The Memory Book

Each patient is given a "memory book," which outlines that day's schedule and other vital information. Warren's book even tells him how he got here.

"I had a head injury from an explosion in Iraq on June 14, 2004," he said, reading from the book. Warren adds that without his memory book, he would not know what happened to him.

In physical therapy, he exercises his muscles and brain at the same time. While cycling, Warren is asked to count by twos backward from 100.

He responds: "100, 99, 88, 84 ..."

The Scavenger Hunt

In a kitchen specially built for TBI patients, he learns how to whip up a hamburger dish. But the real challenge is a scavenger hunt, aimed at reintegrating him into the community. Even the simplest task — such as finding an item on a list — is daunting to these patients.

"They may be able to focus on one task, but external stimuli or even internal stimuli can cause them to lose concentration and be easily distracted like something beeping in the background or somebody walking by," said Karen Parecki, an occupational therapist.

Warren finds the items on his scavenger hunt check list, but struggles at the checkout counter. He tries to calculate his change on a piece of paper. But he still gets it wrong. *A Daily Struggle*

This daily struggle to relearn the simplest things can be frustrating and exhausting, no matter how much encouragement he gets. No wonder Warren's favorite activity is sleeping. "No one bothers me," he said.

This is not just a psychological reaction. TBI patients are easily tired, and prone to mood swings. "If you have a domino effect of frustration, like I've had, it leads to a very bad day, and you just want to give up," said Giess.

When asked if it gets a little depressing, Giess said, "Oh yes, yes it does. You have to realize that you aren't the same person you were. And then once you start realizing that you aren't the same person, you can start rebuilding."

This former building contractor knows something about starting from scratch. Some days are especially frustrating. Like the time he went home to attend his daughter's middle school graduation.

"I made sure I got there early, got everything ready, and then I forgot what time it was, what time the graduation was," said Giess.

He was late. And he was devastated. But his anger at himself never spills over into anger at the war. "No regrets. I'd go back over right now if I was able."

Proud to Serve His Country

Warren is also proud of his service, proud of the Purple Heart he received. But he questions the war that did this to him.

"I had lot of pride for my country and they shipped me to Iraq. With me having no say-so. I mean, look at me now, missing the top part of my head," he said.

Both men struggle to accept the reality of their situation. As do the families of TBI patients.

"They have this expectation, 'Oh, they're in a rehab unit, they'll be perfectly fine, they'll be the same as before.' And there's no way they can ever be the same as before," said Alvarez.

For everyone involved, that's a tough prognosis.

A Warm Welcome Home

When Warren went home to Los Angeles for a visit, the welcome from his family and girlfriend washed over him like a tonic.

"The doctors said it would be a good part of his rehab, you know, to help him in the recovery long term, and we definitely see that," said his mother, Cynthia Piccione.

Even Warren recognizes the change. Asked to name something he could now do that was impossible earlier, he said, "Have a normal conversation with somebody who's here."

At the same time, Warren knows he has a long way to go. Taking a shower by himself, for example, is difficult.

He still cannot be left alone. So his mother and girlfriend take turns staying home with him, even though they both have full-time jobs.

"He can concentrate on one thing at a time, he's easily distracted by the TV or other things," said his girlfriend, Vanessa Vargas. "Processing information, you know, he can tell he's a little slower."

On a recent visit, they manage to get to a swimming pool, where Warren swam a few laps. This is real progress for a young man who wasn't walking three months ago.

Many Veterans Are Undiagnosed

Even so, he still needs 24-hour supervision. In some ways, veterans with traumatic brain injury are like toddlers again, something of a sad irony.

"The majority of them join the military because they want to leave the parents or they want to leave home," said Alvarez. "And to be independent. And now they're back to square one and it's sad to see that."

Not all veterans with TBI have the kind of support Warren and Giess enjoy waiting at home. In fact, many veterans with this "invisible wound" are going undiagnosed, their families misunderstanding their behavior.

Warren, at least, has started on the road to recovery. "My hopes are very good, very good," he said.

But there are still times when he feels sorry for himself. How does he deal with that? "I just cry."

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17.

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http://www.ccmep.org/2003_articles/Iraq/111403_hidden_cost_of_bushs_war.htm*

The Hidden Cost of Bush's War - Concern about fatalities among Western forces in Iraq tends to overlook another ghastly statistic: the spectacularly mounting toll of the severely wounded. Andrew Buncombe reports on America's invisible army of maimed and crippled servicemen

by Andrew Buncombe

It has been three months since Sergeant Mike Meinen lost his right leg in Iraq and just two weeks since he received a new one. He is still getting used to the prosthetic, still adjusting to its feel, the way it looks, the way in which his injury has changed his life for ever. Remarkably, he refuses to be bitter either about the Iraqi guerrillas who maimed him or about the people in Washington who sent him to war.

"I can't be upset for what has happened. We went to Iraq for a reason, there were obviously going to be casualties," said 24-year-old Sgt Meinen, father of a five-month-old daughter, Abigail, who was born when he was in Iraq. "I can't be upset that I was among them... I am proud of what I have done."

There are increasing numbers of veterans from former wars and relatives of soldiers who fought in Iraq speaking out against the ongoing operation and demanding that the troops be brought home. They say it suits the Bush administration not to draw attention to the number of wounded and to ignore the effect on the recruitment and retention of troops as well as public opinion.

Sgt Meinen, of the 43rd Combat Engineer Company, 3rd Armored Cavalry Regiment, is among thousands of wounded soldiers who have returned from Iraq to uncertain futures, months of difficult and often painful treatment and an American public largely unaware that so many troops are being injured every day. The reality is that, just as Iraqi hospitals struggled to deal with the number of wounded civilians during the invasion of the country, so military hospitals in the US are now overflowing with wounded Americans.

Advances in body armour and battlefield medicine mean that an increasing number of soldiers such as Sgt Meinen are surviving injuries that even just a decade ago would have killed them. As a result, while the Bush administration is able to point to a relatively modest number of US fatalities in Iraq yesterday the total stood at 396 there is a huge number of severely wounded soldiers whose injuries and fate go largely unreported. Mr Bush has ordered that the media should not be allowed to photograph coffins containing the bodies of those killed in Iraq, and the return of injured US troops also goes largely unpublicized. This is no coincidence. Senator Patrick Leahy of Vermont told the Senate last month: "The wounded are brought back after midnight, making sure the press does not see the planes coming in with the wounded."

But for visitors to the Walter Reed Medical Center in Washington where Sgt Meinen and two comrades who were injured in the same rocket-propelled grenade attack were treated the wounded are very much on display. Indeed, at this hospital, which deals with injured soldiers (as opposed to sailors or marines), there is barely room for non-war casualty patients.

Last week all but 20 of the hospital's 250 beds were reportedly taken up with soldiers injured in Iraq, where there are now some 35 attacks on US forces every day. Fifty soldiers had lost limbs often more than one while dozens of others were being treated for burns or shrapnel wounds. Others require psychiatric help. Officials say that 20 per cent of the wounded have suffered "severe brain injuries" while 70 per cent had wounds with the "potential for resulting in brain injury". About 600 have been dispatched to a specialist burns unit in San Antonio, Texas.

On the fifth floor of Walter Reed, where soldiers such as Sgt Meinen and his comrades Pte Trystan Wyatt and Sgt Erick Castro receive physical therapy, staff have reportedly put up a bulletin board with their patients' photographs. It is crammed full of pictures of young men. "We didn't start the board when the war began," Mary Hannah, a therapist, told the *Los Angeles Times*. "Even the most experienced people here it's beyond their imagining. These are our babies and they just keep coming, coming, coming."

The facilities at Walter Reed, the army's main hospital in the US, are so crowded that the 600 or so rooms set aside for families of the injured are apparently insufficient and people are doubling up. The Pentagon is paying to put up hundreds more at local hotels.

"I don't think this is going to go away," said the hospital's director, Major-General Kevin Kiley. "Our people are pedaling as hard and fast as they can. We can do this for a long time but at some point if there is no let-up the casualty demand will have to start affecting what Walter Reed is. The whole hospital is on a war footing and emotionally involved. The broader challenge is how do you keep up the battle tempo for a long period of time?"

The first stopping-off point for almost all injured soldiers evacuated from Iraq is the US Regional Medical Center in Landstuhl, Germany, about 100 miles south-west of Frankfurt. To date they have treated a total of 7,714 ill and injured troops. Of these, the Pentagon says 937 had suffered so-called combat injuries, as opposed to non-hostile injuries, though these numbers are disputed by independent experts. "One is going to get you a Purple Heart [a medal for troops injured in battle] and one is not," said a Pentagon spokesman, explaining the difference. "One's for wounds inflicted by the enemy. It could be any type of injury inflicted by someone who wishes to cause you harm."

There are no comparable figures for British combatants. We know that 52 British servicemen have died in Iraq, 19 of them since "major operations" officially ended on 1 May. But the Ministry of Defense says that it cannot give any figure for the number of wounded, and none of the Defense think-tanks feels able to venture an estimate. One reason is believed to be the extensive involvement in the war of British special forces the MoD is extremely secretive about the SAS and SBS.

The sick and wounded from Iraq arrive at Ramstein Air Base near Landstuhl on huge transport planes. Around 30 new patients arrive every day, straining the resources of the hospital, which has had to request

additional doctors to boost the medical staff of 1,800. Apparently the hospital had not been expecting the number of less seriously wounded soldiers it has had to treat for road traffic injuries and ailments such as kidney stones (which were commonplace during a summer in which many troops became dehydrated).

In a recent interview with *The New York Times*, the hospital's senior officer, Colonel Rhonda Cornum, said the situation in Iraq meant that the demands being placed on the staff and resources at Landstuhl would not go away any time soon. "You can't work people 60 hours a week for ever," she said. "People have to take leaves. They've got to go to school. You can't run it as a contingency when it has obviously become a steady state."

She added: "This is never going to be a quiet medical Center again. Our people are proud and privileged to be doing it. But we don't have any illusion that it's going away."

In addition to the advances in medical treatment, more soldiers are surviving as a result of better equipment. Most troops in Iraq are equipped with \$1,600 (£950) Kevlar vests and \$325 helmets. The vests, the thickly woven material of which is designed to "catch" projectiles, are fitted with ceramic plates that cover the most vulnerable areas. As a result, most injuries two out of three involve the arms or legs. Around 100 troops have lost arms, legs, hands or feet in the operation to oust Saddam Hussein and occupy Iraq.

While the body armour cannot stop all injuries, the result is that many more troops are surviving than in previous conflicts. Estimates suggest that during the current war in Iraq the ratio of wounded to dead stands at eight to one. In the Second World War the ratio was three to one, while even in the 1991 Gulf War the ratio was four to one. Most deaths occur within half an hour of a soldier being injured, usually as a result of massive blood loss. Survival rates soar if he or she can be airlifted to a medical Center within an hour of being wounded.

Most of those seriously hurt receive excellent treatment. Sgt Meinen and his comrades have been fitted with titanium and graphite prosthetics. Speaking by telephone from his home in Colorado, close to his base at Fort Carson, Sgt Meinen was upbeat. "It's really nice," he said of the false limb. "It's better than I thought. I am doing physical therapy now I say I am on vacation."

Mr Wyatt, who also lost a leg in the same incident in the city of Fallujah on 25 August, has been fitted with a \$100,000 prosthetic that attaches to the stump of what was his upper thigh. The so-called C-leg "understands" when to bend as a result of built-in microprocessors that detect stresses 50 times per second.

"When we first got here I felt I was screwed and thought I would never walk again," said the 21-year-old. "The rocket went through my leg like a knife through butter. It was a terrible scene with the three of us... there was just blood and muscle everywhere. It's hard to see your comrades hurt, but there are a lot of people here farther down the line with the same injuries. It definitely gives you hope."

Many of the wounded appear optimistic, hopeful that with retraining and treatment they may be able to return to the armed forces and continue their careers in some sort of capacity. They hope their sacrifice has not been entirely in vain. But there are increasing numbers of veterans from former wars and relatives of soldiers who fought in Iraq speaking out against the ongoing operation and demanding that the troops be brought home. They say it suits the Bush administration not to draw attention to the number of wounded and to ignore the effect on the recruitment and retention of troops as well as public opinion.

"The general sense is that it's politically damaging to the Bush administration. It makes it more difficult for them to continue their policies in Iraq," said Wilson Powell, director of Veterans for Peace. "It may be that those policies are changing. There is a sense that they are trying to accelerate their withdrawal of troops."

Mr Wilson, 71, a veteran of the Korean War, said that for a family, the effect of a relative being wounded could be worse than that of them being killed. "Post-traumatic stress disorder goes on for decades. It can affect marriages, relationships with children," he said. "With a death people can move on, people get on with things. If they are wounded, you might have someone who is 50 per cent disabled, who has a sense of shame, who is angry or bitter."

Sgt Meinen is not in that position, at least not yet. For the time being he is focusing on getting better, on learning to use his new limb and enjoying his daughter. "I love being a father. She learns so much every day," he said.

Of what happened in Iraq he says he is glad that he and his comrades came home alive. "I always told them I would take them to the worst places in the world, but that I would always bring them out," he said. "They believed in me. All three of us wanted to be there."

18.

Further Action Needed for Soldiers Sustaining Brain Injuries in Iraq

<http://www.biamt.org/news.html>

A survey of 250 soldiers wounded in Iraq conducted at the Defense and Veterans Brain Injury Center at Walter Reed Army Medical Center in Washington, DC, found that 60 percent have suffered a traumatic brain injury. The brain injuries range from mild concussions to more serious, permanent damage. These findings will have far-reaching impact for the troops. For example, issues such as how to improve diagnosis of brain injury, whether helmets are adequately protecting the brain, the need for education of troops on brain injury, and when troops should return to duty after a brain injury, will be visited by the Army.

Soldiers in Iraq are more likely to be injured by rocket-propelled grenades, land mines, and homemade bombs than they are by a bullet. Troops who are not struck directly, also sustain brain injuries by over-pressurization or shock waves that emanate from explosions that are greater than the speed of sound. Discussions are under-way about whether or not the Army helmets can be improved for head injury protection.

Since closed head injuries are invisible and many of the symptoms to determine concussion are not clear, soldiers are being trained to recognize the major symptoms of head injuries. Doctors acknowledge the importance of recognition because concussions grow worse with repetition.

The Army is also working to determine when a soldier should return to duty after a brain injury. The Army is considering modifying civilian guidelines developed by the American Academy of Neurology to bring military relevance to these guidelines.

The Department of Defense awarded a \$2.2 million grant to the diers are still on the battlefield. This test could eventually be used in everyday settings to aid paramedics and coaches diagnosis brain injuries.

When the brain is injured, brain cells release proteins, some of which make their way into the bloodstream. Scientists are working to identify those proteins, allowing a finger prick to determine whether someone has a brain injury and the severity.

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19.

St. Petersburg Times ONLINE TAMPA BAY

http://www.sptimes.com/2004/03/25/news_pf/State/Military_drives_state.shtml

Military drives state university's study of brain injuries

Using a grant from the Department of Defense, UF researchers are developing a blood test that would quickly diagnose brain injuries.

By LISA GREENE, Times Staff Writer
Published March 25, 2004

GAINESVILLE - Some of the worst injuries of war aren't always obvious. It's an unfortunate lesson doctors are learning more about during the fighting in Iraq. When soldiers are targeted by a grenade or suicide bomber, brain injuries may not show. But those hidden hurts can get worse without speedy treatment.

Scientists at the University of Florida are working to develop a quick, portable blood test that would help diagnose soldiers with brain injuries while they're still on the battlefield - a test that eventually could help identify people injured in everyday settings, from football fields to car crashes.

"The brain is the neglected organ in many ways," said Ronald L. Hayes, director of the Center for Traumatic Brain Injury Studies at the University of Florida's Evelyn F. and William L. McKnight Brain Institute. "You're much better off having a heart attack than a brain injury. We have vastly better diagnostics and treatment available."

Hayes and his team of researchers want to change that. The university has a \$2.2-million grant from the U.S. Department of Defense and is working with the Walter Reed Army Institute of Research to develop such a blood test.

In past wars, head injuries have caused about 25 percent of combat deaths, said Frank Tortella, chief of Walter Reed's applied neurobiology department, who is working with Florida scientists. In the current Iraq conflict, researchers say they believe the proportion of brain injuries among the wounded is even higher.

Part of the problem, Tortella said, is because soldiers' body armor has become so effective. Explosions or gunfire that once would have killed are no longer fatal - but they still cause brain-shaking blasts.

"I have no doubt this (brain-injury) problem existed in World War II, Korea, Vietnam," Tortella said. "The difference is the soldiers would have died. . . . We're sort of victims of our own success."

A rapid test could help identify soldiers with head injuries and get treatment started before brain swelling or bleeding causes more damage.

Battlefield tests also could help combat medics make the hardest decisions, researchers said.

"In a way they have a horrible job," Hayes said. "Are you worth spending effort on? Do we need to risk more lives to get you out of here?"

Or picture the medic trying to treat many wounded soldiers, Tortella said. Who should be treated or evacuated first? What if medical supplies are limited?

Both Hayes and Tortella have a personal interest. Hayes is a former Air National Guard fighter pilot and Tortella has a son serving in Iraq.

Although getting the test onto the battlefield is years away, the research has sparked interest from other scientists.

"Having these kinds of tests to use in the battlefield would be extraordinarily helpful for improving outcomes," said George Zitnay, chairman of the National Brain Injury Research Treatment and Training Foundation.

Hayes spoke to Zitnay and other neuroscientists about the research a few weeks ago, when he received the foundation's highest honor, the Lance Award. Past recipients include Dr. John Jane, who treated actor Christopher Reeve after his spinal cord injury, and Graham Teasdale, co-developer of a widely used scale to the severity of comas.

Brain injuries don't get enough public attention, despite the 1.5-million U.S. residents a year who suffer traumatic brain injuries, say Hayes and Zitnay. More than 5.3-million Americans live with brain injury disabilities - more than the 4-million Americans with Alzheimer's disease, Hayes pointed out.

A rapid test could help injured civilians as well, scientists say. Paramedics could decide which car wreck victim to airlift first. Coaches would know whether to send the football player back into the game.

And if there were ever another large-scale terrorist attack, there wouldn't be time to give hundreds of CT scans, Tortella said. But a blood test could identify brain injury victims instead.

When the brain is injured, its cells release proteins, some of which make their way into the bloodstream. If scientists could identify those proteins, a quick finger prick could show whether someone has a brain injury, what kind it is and how bad it is.

Florida scientists envision combat medics using a handheld computer that tests a small blood sample to assess soldiers on the battlefield.

In lab studies, university scientists have identified about a half-dozen proteins released in rat brains after injuries, said Kevin K.W. Wang, an associate professor and director for the Center for Neuroproteomics and Biomarkers at McKnight.

Scientists identified the chemicals using powerful computer technology to map which proteins are present in samples of blood and the fluid that surrounds the brain and spinal cord.

Scientists are working with blood drawn from emergency patients to see if the same proteins show up in human patients who have brain injuries - and to make sure they're not present in people who don't.

"We would like to have a protein marker that tells us if we have cell deaths . . . or brain swelling," Wang said.

Eventually, chemical markers might be found to help diagnose other brain problems, such as stroke or substance abuse, Wang said. The scientists, along with the university, have formed a company, Banyan Biomarkers, to help produce the test.

The technology used for the test has only been available for a few years. Hayes hopes that better diagnosis will lead to the next step: better treatment.

Early treatment is especially important for brain injuries because over time, the brain can swell, blood vessels can constrict, and brain enzymes can malfunction - all compounding the damage of the first injury. "In the absence of really good diagnostics, you can't drive good treatment or therapy," Hayes said. "Without diagnostics, you're driving in the dark."

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Therapy Helps Soldiers Cope with Traumatic Brain Injury

[News & Media](#) - [News Releases](#)

http://www.armymedicine.army.mil/news/releases/20050107WRAMC_TBI.cfm

Story and photo by Michael E. Dukes

Senior Medical Writer, Walter Reed Stripe

Ordering a pizza, pressing a floor button on an elevator, paying bills—these are simple tasks for most people, but they can be a challenge for someone with a traumatic brain injury.

Doctors at the Defense and Veterans Brain Injury Center have said that early assessments of casualties from Iraq suggested soldiers are returning with a range of brain injuries—from mild concussions to coma. The injuries seems to be the result of the enemy's use of high explosives as a weapon of choice, and of U.S. protective equipment that has reduced the percentage of gunshot wounds, doctors at the Washington, D.C., center say.

Speech pathologists at Walter Reed Army Medical Center's Army Audiology and Speech Center have a variety of methods to help TBI patients cope with basic life-skills challenges.

Assessment and family education begins in one of the Washington, D.C., hospital's intensive care units for most TBI patients.

"It's pretty much a team approach with our whole clinic," said Walter Reed speech pathologist Laura Battiata. Speech pathologists here treat various speech, language and swallowing deficits during patients' stay.

During a basic bedside assessment, a patient's memory, attention span and ability to follow simple commands are evaluated. Depending on a TBI patient's needs, Battiata and Katie Sullivan offer individual and group treatment where they concentrate on higher level processing, attention, planning and organization skills.

"The group is nice because [patients] can discuss things with each other, and they have something in common with the other patients and really seem to motivate each other really well—better than we can motivate them," Battiata said of TBI group therapy sessions.

"It seems very helpful to them to have patients with similar circumstance that they can work with," she added.

The speech pathology team combined patients with varying deficits including visual, amputations, impaired writing and patients who have difficulty sitting upright due to their injuries. "Combining these patients allows for group interaction and mutual support among the Soldiers," Battiata explained.

"It's a challenge to come up with activities they can all participate in equally due to their different cognitive deficits as well as their physical deficits," Sullivan added. "It's difficult, but there's a social aspect that's so important about the group."



Spc. Hugo Gonzalez, who was wounded in Iraq, gives a presentation about the brain and the effects of TBI to his fellow patients during a speech pathology TBI group session.

They offer various team-based therapy activities during which the patients can help each other.

Group therapy focuses on the patients' executive functioning skills: organizing, planning and sequencing. "We may plan a trip, we may play games that involve memory tasks or perform language tasks," Battiata said.

"You can take a basic board game and realize how much planning, organizing and strategy is involved," Sullivan said. For TBI patients who don't have the ability to attend to a task or are easily distracted, games are "a very good way for them to work together."

Occasionally, Battiata and Sullivan take their groups on outings into the community. A trip to a movie theater, for example, requires patients to determine what time they need to be there, how they're going to get there, how much money they will need. "We try to do things that are functional to real life," Battiata explained.

One of their patients planned a wedding as part of her therapy. "It was something functional, she's getting married and needed to organize it," Battiata said.

Using search engines on the Internet has been a good activity for TBI patients, Sullivan added. The activity requires patients to decide what words should be entered to look up a particular topic.

TBI patients, especially those with frontal lobe injuries, may have problems initiating tasks. "They can sit down at a computer, but in terms of taking the steps and initiating the process to get things done—sometimes it's difficult," Battiata said.

"If we said 'Call someone up and order a pizza,' they know there's a phone and a phone book, but [it can be difficult for patients] in terms of taking the next step to find out where it is," Battiata said. "They don't properly plan the steps, their sequencing may be off, and they may do one step out of sequence or forget a step."

The only criterion for patients to participate in a TBI group or individual session is that they must have at least minimum cognitive abilities for Battiata and Sullivan to make progress.

Battiata and Sullivan's work is only one of the first steps in the road to recovery.

"Our goal is to get them to a dedicated rehab facility, such as the [Veterans Administration]," Sullivan said.

After patients have completed their medical treatment at Walter Reed, and they have completed "TBI basic training," some are transferred to a VA TBI treatment center in California. Occasionally, the patients come back to Walter Reed for more surgeries, and they may once again continue speech pathology therapy.

For immediate release, Jan. 7, 2005.

<http://www.uslaboragainstawar.org/article.php?id=5794>

Brain Injuries Lead Iraq War Injuries

by Brad Amburn, [UPI/Truthout](#)
July 24th, 2004

Brain Injuries Lead Iraq War Injuries

By Brad Amburn
United Press International

Friday 23 July 2004

Washington - Nearly two-thirds of injured U.S. soldiers sent from Iraq to Walter Reed Army Medical Center have been diagnosed with traumatic brain injuries - a percentage thought to be higher than any other past U.S. conflict, military officials told United Press International.

About 60 to 67 percent of soldiers coming through the hospital with wounds as well as injuries from blasts, severe falls and motor vehicle accidents have suffered these potentially life-altering brain injuries, said Dr. Deborah Warden, national director of the Defense and Veterans Brain Injury Center at Walter Reed, where the majority of patients with suspected head injuries from Iraq are sent.

Warden said this trend may seem grim but the increased number of cases actually serves as proof of an improved head injury survival rate from better armor, more sophisticated diagnostic tools, and soldiers and medical staff better trained to look for and treat these kinds of injuries that would have been fatal or gone unnoticed in past wars.

An ongoing investigation into the lifelong effects of war-related head injuries is at the forefront of these advancements in knowledge and treatment.

"As a medical field, we're much more sensitized to mild, closed brain injury ... and we know that there are consequences and ramifications for milder traumatic brain injury," Warden told UPI. "So we are screening and identify soldiers who have had less severe traumatic brain injury," which was not the case in Vietnam or earlier wars.

With the development of more sophisticated body armor and helmets made of Kevlar - a bullet resistant material - the survival rate of soldiers with traumatic brain injuries has greatly improved, whereas in past wars similar injuries would have been fatal, Warden explained.

She said soldiers who survive head injuries often suffer from a range of cognitive and emotional problems, including difficulty with memory, attention and reasoning, as well as high rates of depression, alcohol use, post-traumatic anxieties and irritability.

During the Vietnam era, brain-scanning technology, such as magnetic resonance imaging, did not exist to detect the extent of brain injuries, said Dr. Karen Schwab, assistant director at the Walter Reed brain injury center. This likely resulted in under-detection of traumatic head injury and inadequate treatment, she added.

This led to the beginning of a long-term investigation studying the effects of penetrating brain injuries on Vietnam veterans. A penetrating brain injury is one where a bullet or piece of shrapnel has passed through the skull and pierced the brain. The study is now entering its third phase of research at the National Naval Medical Center in Bethesda, Md.

The study was started in the 1960s at Walter Reed by Dr. William Caveness, who wanted to investigate how penetrating head injuries affected epilepsy in soldiers - who had a high incidence rate of the disease, said Jordan Grafman, chief of cognitive neuroscience at the National Institute of Neurological Disorders and Stroke and the study's principal investigator.

Grafman and fellow investigator, Dr. Andres Salazar, wanted to expand the scope of the investigation to learn more about cognition and brain function, yielding results that improved the evaluation of patients with head injuries and identified key components to their long-term outcomes.

"If you have a brain injury and you can no longer do a specific task then it is likely that that area of the brain was very important - perhaps stored the memories that enabled you to do that task," Grafman told UPI.

"We knew the patients' long-term outcome was going to depend a lot more on their cognitive status than it would on whether they had epilepsy or not," Grafman continued. "And we probably would learn a whole lot about how the brain works and help the military change how they handle head injuries because during Vietnam there was no real standard of care."

In the early 1980s, the Department of Defense granted funding for the second phase of the study, to conduct a 15-year follow-up evaluation of 520 Vietnam veterans with head injuries who had participated in the first phase of research.

The investigation led to many neuropsychological advances that proved the importance of the prefrontal cortex in social functioning, and showed the Army that veterans with head injuries still experienced cognitive deficits - in social behavior, reasoning, attention and planning - that needed effective diagnosis and rehabilitation.

"We were able to see that many of these guys were not worked up or evaluated well after Vietnam, which led to new (head injury) units being established in military hospitals," Grafman said. "It also got the military, especially the Army, just extremely interested in head injuries in general and trying to figure out ways to minimize injuries when they occur medically or even prevent them by changing the helmet. So it had a powerful clinical impact."

The development of better helmets has reduced the number of penetrating head injuries in Iraq, but internal, concussive head injuries are more of a problem in this war, Warden said, particularly among paratroopers injured by rough landings.

The brain injury center has worked with the Army to develop even better helmets that provide more internal cushioning to prevent against concussions. These helmets currently are being integrated into service, Warden said.

Despite "great improvements in body protection," however, the head still is the most vulnerable part of the body to injury, Grafman said, so even though shells and fragments might be blocked, that still will not prevent traumatic injuries to the brain through weaponry that causes damage by impact and sound waves.

"Given this, it becomes even more important to better evaluate and provide good rehabilitation for soldiers," he added.

The third phase of the study currently under way at the NNMC could provide important clues to improved rehabilitation by "looking at cognition in a slightly more sophisticated way," said Dr. Vanessa Raymont, NNMC's head neuropsychiatrist.

The 30-year follow-up of the same Vietnam veterans will evaluate more social and everyday cognition, Raymont said, by focusing on how these injuries continue to affect executive functioning in the brain, including decision-making and reasoning.

This part of the study also will involve a genetic analysis of blood samples from participating veterans to see if there are any specific genetic markers indicating some soldiers might be more susceptible to developing problems from these types of injuries, Raymont said.

Although the study has covered only 12 veterans since its launch last April, Raymont said preliminary reports suggest a higher incidence of short-term memory problems, which may indicate people with head injuries are more prone to memory difficulties.

Psychological problems also seem to continue for many participants who suffer from depression and anxiety disorders and use alcohol to cope with the problems they have experienced, she said.

This study focuses on penetrating head injuries instead of internal ones more prevalent in current conflict, Raymont said, "(so) it is very feasible we could be looking at different outcomes" for veterans of the Vietnam war and the war in Iraq.

Grafman said the study's findings still will help soldiers in Iraq know what to expect with these injuries and will drive the importance of long-term rehabilitation.

"In the case of more blast injuries, it is likely they're going to affect more widespread parts of the brain than the typical shell fragment would," Grafman explained. "The more we learn about individual areas of the brain and how they function, the more knowledge we'll have about the kind of impairments that can occur" and more specified and effective treatments can be developed.

Treatment already is improving for brain injury sufferers, Schwab said.

"Clinicians tell us here, that when people are brought back for follow-up a year after their treatment, how well they're doing. It's impressive," she said. "People continue to make recovery, which is not to minimize their injuries when in fact a lot of them will need ongoing help."

The study will conduct a fourth phase in another 10 to 15 years to further examine long-term effects on these veterans.

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http://seattlepi.nwsourc.com/national/182691_iraqbrain19.html

Another news article from the Group Health Cooperative site.

Monday, July 19, 2004

Traumatic brain injury, a 'silent handicap,' affects many Iraq vets

By MATTHEW B. STANNARD
SAN FRANCISCO CHRONICLE

Sgt. 1st Class Alec Giess clenched his eyes shut as he struggled to recall how his fellow Oregon National Guardsmen found him after a truck, swerving to avoid a suspected land mine, ejected him onto an Iraqi roadway -- then rolled on top of him.

"If my boots weren't sticking out from under the truck, they probably wouldn't have found me. It was like the Wicked Witch of the East in ... " He paused, his face a mask of concentration. "What is that? Oh, yeah, 'The Wizard of Oz.' "

That effort to recall a film known and beloved by nearly every American is one Giess must bring to all his activities now, from remembering to eat lunch to arriving on time at his daughter's middle-school graduation.

Giess has more or less healed from many of the injuries he suffered when the transport truck landed on his body and gave him cracked vertebrae, a broken collarbone and shoulder and bruises where his life-saving body armor pressed into his skin.

But he still suffers from traumatic brain injury, or TBI, a wound that has proved unusually common in the Iraq conflict, in which new body armor saves soldiers from injuries that would have killed them in the past but can't keep their brains from banging against the walls of their skulls.

Giess, who reaches his 45th birthday this month, is being treated at the Veterans Hospital in Palo Alto, Calif., home to one of just seven centers in the nation dedicated to researching and treating traumatic brain injury in veterans.

While experts say that perhaps 20 percent of injured veterans of past wars suffered from TBI, early estimates from screening at Walter Reed Army Medical Center in Washington of injured troops returning from Iraq deemed at high risk for TBI suggest that, whatever their other wounds, as many as two-thirds also had brain injuries.

The numbers are still being studied, but several factors may be contributing to the increase, researchers say. They say better medical technology and awareness may be leading doctors to look more carefully for signs of TBI. Researchers also blame modern warfare and the unique nature of the Iraq conflict.

Modern armor is strong enough to let a soldier shrug off a direct hit from a rifle round, and cutting-edge battlefield medicine is keeping more casualties from becoming fatalities. But the standard-issue helmet doesn't guarantee protection against impacts that cause brain injury, and battlefield medics can do little to treat it.

And the weapons preferred by those attacking U.S. troops in Iraq -- land mines, improvised explosives, mortars -- deliver exactly the kind of concussive blast that can cause TBI, even if soldiers suffer no obvious external injury, researchers say.

The results can easily be overlooked, even by sophisticated medical tests. Soldiers have checked out of hospitals without knowing they had a brain injury.

"They were just sent home, and we found out only retrospectively that there were many, many problems," said Henry Lew, medical director of the Palo Alto VA's Comprehensive Rehabilitation Center.

The symptoms of traumatic brain injury -- irritability, poor memory, disinhibition, anxiety and depression -- can make day-to-day life a struggle. In severe cases, it can lead to inexplicable, violent confrontations with strangers or family members.

But unlike amputation, paralysis, burns or other physically disfiguring wounds of war, TBI's scars and symptoms are subtle and all too easily dismissed as personality quirks or moodiness that seem natural after combat.

"TBI is a silent handicap," Lew said. "If you met (a patient) on the street or in a bar or anywhere, you would never notice they had TBI."

Take Army Spc. Rigoberto Ocegüera, a 23-year-old Chico, Calif., native now convalescing with Giess in Palo Alto. Without close inspection, little on his body betrays the fact that he barely survived, plummeting hundreds of feet from the sky, when his Chinook helicopter was shot down by a missile outside Fallujah in November.

The attack killed 16 soldiers and injured 26, including Ocegüera. Today, his lungs are free of blood, his broken pelvis is healing, his eye is back in its socket, and healing scars hide where his spleen was removed. On the outside, he looks much like the young man who joined the Army with dreams of making its tae kwon do team, maybe turning military service into a career, with time out to compete in the Olympics.

"I can still kick," he said proudly during a recent interview. "Yesterday was my first day to run. I ran around the hospital."

But some problems haven't gotten better. Ocegüera, never a strong student, once harbored hopes for college. Now, he has even more trouble learning. And inside his head, he has other scars, other losses.

The last memory he has of his time in Iraq is watching the movie "Resident Evil" with some buddies sometime around Halloween.

His next memory is of coming to his senses in a bed at Walter Reed.

"It felt like I fell asleep in Iraq, and I woke up in the States," he said. "I didn't know what had happened to me."

Ocegüera can't recall the accident, which killed one of his Army buddies. He couldn't recall the man's name until he saw his face on a memorial Web site. He can't remember the first time his family visited him at Walter Reed, when, his mother says, he seemed to think he was still in the war, maybe imprisoned. He can't recall "President whatshisname ... Bush" visiting Walter Reed in mid-December.

And he can't recall re-enlisting, an event that occurred sometime between "Resident Evil" and the crash, but which Ocegüera only discovered when he noticed that his identification card -- with a photo of him in a coma -- had a separation date three years later than the one he remembered.

"Weird" is the only word he can think of to explain how he feels.

Most symptoms of TBI are so subtle that it is often a family member who first detects a problem, Lew said.

Giess' wife, Shana, noticed after his return that the easygoing, relaxed dad who went to Iraq had become a quick-tempered man who couldn't remember the family's daily schedule, jumped up screaming when the family cat landed on his bed and couldn't tolerate crowds.

The world inside his head, Giess said, was even stranger: He felt bewildered, with no sense of time other than "daytime" and "nighttime." He also felt cut off from his emotions.

"When my kids come and hug me, I don't feel a thing," he said.

In retrospect, Shana Giess said, much of her husband's behavior reminded her of the special-needs children she works with as an educational assistant.

"When they finally diagnosed him, it all made sense," she said.

After some errors he made filling out a standard military form brought him to the attention of a neurophysiologist, Giess was transferred to Palo Alto, where he has been trying to reconstruct his old self through a program that uses intensive scheduling and repetition to try to retrain the damaged mind.

"You teach yourself something, then the next day you've got to teach it again. And again. And again." Giess said. "Remembering how to remember."

INJURY SYMPTOMS

These are some of the common symptoms experienced after a brain injury. Veterans or their family members with questions about TBI can contact their local Veterans Affairs hospital or the Defense and Veterans Brain Injury Center at 800-870-9244 or www.dvbic.org.

- Persistent headaches
- Difficulty remembering
- Trouble concentrating
- Feeling unusually tired
- Changes in sleep
- Mood changes
- Ringing in the ears
- Confusion
- Irritability

Source: Veterans Affairs Palo Alto, Calif., Health Care System

NOTE: The Giesses live in Cannon Beach, Oregon

23.



War vets suffer frequent head trauma Two out of three troops treated at Walter Reed have head injuries

By Jim Miklaszewski

Correspondent

NBC News

Updated: 7:50 p.m. ET Dec. 8, 2004

In the sixth floor speech therapy lab at Walter Reed Army Medical Center in Washington, Specialist Hugo Gonzalez is working to rebuild what he's lost.

"Sometimes the word... sometimes the word that I really know, that I really want to use, sometimes they just don't come out," says Gonzalez.

Gonzalez sustained a serious brain injury in a roadside bomb blast and firefight one night in Iraq. It was captured on film although he never saw it coming.

"I didn't realize what happened to me until four days later when I wake up from a coma," says Gonzalez.

His doctor is Lou French.

"If he had not received immediate medical intervention, it's unlikely that he would have survived," says Dr. French.

He's not alone. Physicians at Walter Reed are treating brain injured soldiers from Iraq and Afghanistan with greater frequency than in past wars. Today, nearly two out of every three soldiers injured in combat, who end up at Walter Reed, also have some type of brain injury — blast injuries mostly.

"In terms of the doctors who are taking care of these patients, we're pretty busy right now," says Dr. Deborah Warden at Walter Reed.

Part of the reason is that doctors are better at spotting mild brain injuries they once might have missed. But modern body armor also means soldiers are surviving injuries to their torsos that once might have killed them. Yet, even with helmets, their heads are still vulnerable.

For Gonzalez, the violent shockwave from the blast severely rattled his brain, causing potentially fatal swelling. Battlefield surgeons removed 20 percent of his skull to relieve the pressure. That piece of skull will be re-implanted next month. In the meantime Gonzalez wears a helmet for protection. He's had a lot of time to think about what happened.

"I wasn't playing with GI Joes up there," says Gonzalez. "That was real war. Real bullets flying over our heads."

Gonzalez and his family know he is lucky. His prognosis is good.

"I have a lot... a great will to live. I am going forward," he says.

There are those with brain injuries who aren't so lucky. The battlefields of Iraq, it seems, have found a new kind of victim.

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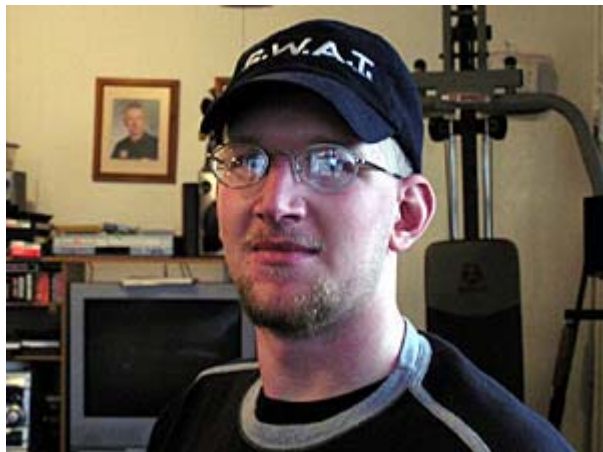
URL: <http://msnbc.msn.com/ID/6679140/>

http://news.minnesota.publicradio.org/features/2004/12/31_postt_injuredsoldier/

Minnesota soldier recovers after being injured in Iraq

by [Tim Post](#), Minnesota Public Radio

December 29, 2004



Sgt. Jim Vandenhoevel spent about a year in Iraq with a National Guard Military Police unit based in southern California. He was injured February 11th, 2004 by a roadside bomb. (MPR Photo/Tim Post)

Some 1,300 soldiers have been killed in the war in Iraq. The number injured is much higher. According to the Department of Defense, nearly 10,000 soldiers have been injured, about half have been sent back home because of their injuries. One of those soldiers is from the small central Minnesota town of Pierz. He planned for a career in law enforcement after the war. But now, like many seriously injured soldiers, he faces an uncertain future.

Pierz, Minn. — Jim Vandenhoevel, 24, has returned to the home where he grew up. He's dressed in a sweatshirt and track pants, and a baseball cap hides scars on his head. A cane leans against his chair, and there's an orthopedic shoe on his left foot. The sole is several inches thick. It helps him walk on a leg that's eight centimeters shorter than it was before he left for war.

Growing up, Jim dreamed of becoming a State Patrol trooper. After graduating from Pierz Healy High School in 1999, he took law enforcement classes at a technical college.

Then came the perfect chance to build his resume. He joined a National Guard Military Police unit based in southern California. The unit was sent to Iraq in April 2003.

"I remember most of being in Iraq," Vandenhoevel says. "I don't remember the day of the attack or a couple of days before ... I don't want to remember anything that happened to me that day. If I remember, it'll keep me awake at night, I'm not going to be able to sleep and I'll cry my eyes out."

Sgt. Jim Vandenhoevel's job in Iraq was to help protect contractors working around Abu Ghraib prison. On Feb. 11, 2004, he was in a convoy of three Humvees on patrol outside the prison.



"I was with my team leader and my driver. We're only six clicks away from the camp, only 6,000 meters," Vandenneuvel says.

Jim doesn't remember what happened next, but others have told him. He says they were heading out into the desert. His Humvee was in the middle of the pack, about 250 feet behind the lead vehicle.

[Jim's leg](#)

"We drove over an IED, an improvised explosive device. It was one 55-millimeter shell, pretty damn big. We drove over the top of it, and it blew up. It blew the Humvee up into the air and kicked it off into the desert," Vandenneuvel says.

The blast instantly killed the driver. Another soldier, who survived, was blown out of the Humvee. Jim, still in the back, was in bad shape.

"They heard me moaning. They opened up the back door. My name was covered up, my face was all full with blood. There was no way of telling who I was, except they could tell by my blonde hair. They knew it was me because of my blonde hair," Vandenneuvel says.

Medics started work on Vandenneuvel immediately. He was losing lots of blood, he was burned, full of shrapnel, and had serious injuries to his head and legs. Jim was sent to a military hospital in Germany. And after a couple of months he was transferred to Walter Reed Medical center in Washington D.C.



He doesn't remember anything from the time of the attack in February until sometime in the summer, when he was transferred to the Minneapolis VA hospital. After spending eight months in various hospitals, Jim came home this fall to the family farm near Pierz.

[Jim Vandenneuvel after law enforcement training](#)

He's able to get around the house with the use of his cane. But the severity of his injuries is obvious when Jim lifts a pant leg. His right calf is gone, blown away by the blast. What's left of the muscle below the knee squirms under a thin layer of skin and scar tissue.

Most of the muscle from his left hip is gone too. His left leg is the one that was shortened, as muscle and bone were blown away.

Jim removes a baseball cap, revealing the injuries to his head. Scars peek out underneath his short, fuzzy blonde hair.

"I think most of my head is titanium plates," Vandenneuvel says.

It's the traumatic brain injury he suffered that will give Jim the most trouble. He says he's doing much better after a few months of speech therapy, and his memory is also improving. But he still struggles from time to time in conversation.

Jim Vandenneuvel is dealing with injuries that would have killed a soldier a few decades ago. That's due in part to better care for injured soldiers in the field.



[Working out](#)

Dr. Barbara Sigford with the Minneapolis VA Hospital says when soldiers are hurt, they're quickly transferred to major medical centers. And after they've been patched up, they're given better rehabilitation.

"We certainly do have a lot of new technology available to us, and I think we're doing a better job of rehabilitation in terms of getting things done quickly," Sigford

says.

Dr. Sigford says there's also been a change in how they deal with injured soldiers' long-range needs. She says those hurt in World War II, Korea or Vietnam, didn't get the attention they needed down the road.

"There may have been a very lengthy inpatient period of rehabilitation, and then essentially they were not followed for the long run," says Sigford. "Often times this made a significant impact on their life, and there was no one to turn to for help after they were discharged from their inpatient care."

Sigford is working to get injured soldiers the followup care they need, both physical and emotional. Her goal is to help soldiers return to their lives in the best shape possible.

"I have known enough people to come through very severe trauma, and still be able to lead a very meaningful life, and play a meaningful role in their families and in the community ... even though that might be a different from what it might have been," Sigford says.

Jim Vandenheuvel's goal right now is to get stronger. He works out every day on a weight machine in his family's living room. He still holds on to the ultimate goal of working as a cop, maybe a State Patrol trooper. His whole motivation behind signing up for the Guard was to get experience for that job.

"Now that I've been injured, it's a different story. I don't what a hiring board would say," Vandenheuvel says.

Jim doesn't get too worried about his future. He'll be able to do something, he says, even if it's not law enforcement. For now he's happy be back home.

25.



2005

Living With Brain Injury

Defense and Veterans Brain Injury Center

Formerly the Defense and Veterans Head Injury Program (DVHIP)

What are the risks and costs of traumatic brain injury (TBI) for military personnel and veterans?

In prior conflicts, TBI was present in at least 14-20% of surviving combat casualties; preliminary information from the current conflict in the Middle East suggests that this number is now much higher.

In peacetime, over 7,000 Americans with TBI are admitted to military and veterans hospitals each year.

TBI is a major cause of life-long disability and death.

Certain military assignments, such as airborne operations or policing in combat areas, carry above average risk for TBI.

Blast injuries are a growing cause of TBI in combat.

What is the Defense and Veterans Brain Injury Center (DVBIC)?

DVBIC is a group of seven TBI Programs in Department of Defense (DoD) and Department of Veterans Affairs (VA) hospitals and a civilian TBI rehabilitation program. These DVBIC sites work collaboratively to provide and improve TBI care for active duty military, veterans, and their eligible beneficiaries.

What is the goal of DVBIC?

Our goal is to provide expert case management and to insure individualized, evidence-based treatment for each patient to maximize function and decrease or eliminate disability. We work together to provide services and supports to help the individual with TBI return to duty, work and community.

What value is added to a site's TBI program from being a part of DVBIC?

Collaboration with DVBIC enhances a site's

- Communication among member programs
- Patient case management
- Clinical care practice
- Provider, patient and family education capability
- Funding for TBI research
- Access to collaborators for multi-site studies

How is DVBIC different from the National Institutes of Health (NIH) and other brain injury research programs?

- Focuses on well-being of those who put themselves in harm's way for our country
- Conducts the only clinical studies with Active Duty military personnel
- Focuses on the unique needs of military and veteran beneficiaries including return to duty considerations, continuity of care with military and veterans hospitals and TRICARE

What type of care is available for persons with TBI through DVBIC sites?

Each facility provides brain injury evaluations. Each individual evaluated at a DVBIC site receives a comprehensive assessment that may include any of the following examinations:

- Psychosocial
- Audiologic (including formal audiometry)
- Electroencephalographic (EEG)
- Neurological
- Neuropsychological (including comprehensive neuropsychological testing)
- Laboratory (Blood work)

Additionally, persons admitted to inpatient TBI rehabilitation programs at a VA site receive:

Other evaluations (i.e., neuro-ophthalmology, dental, ear/nose/throat (ENT), vestibular [balance] testing and treatment, psychiatry, etc.) may be obtained if a need for these services is identified. Treatment is based on individual goals in a multi-disciplinary team setting. Persons who require community re-entry rehabilitation in a residential setting can receive it at our civilian partner site, Virginia NeuroCare in Charlottesville, VA.

Is there a specific set of treatments or services DVBIC sites provide?

Traumatic brain injury results in a broad range of physical, cognitive, behavioral, emotional and social challenges. DVBIC sites provide a consistent standard of clinical care and rehabilitation; however, each person has a plan of care that addresses the individual's needs. Persons with TBI have access to ongoing DVBIC clinical research trials.

Where are DVBIC sites located?

DVBIC sites located at:

Military Treatment Facilities (MTF):

Walter Reed Army Medical Center, Washington, DC
Wilford Hall Medical Center, Lackland Air Force Base, TX
Naval Medical Center San Diego, San Diego, CA

Veterans Affairs (VA) Sites:

Hunter McGuire VA Medical Center, Richmond, VA
James A Haley VA Hospital, Tampa, FL
Veterans Affairs Medical Center, Minneapolis, MN
VA Palo Alto Health Care System, Palo Alto, CA

Civilian Partner Site:

Virginia NeuroCare, Charlottesville, VA

Who is eligible for referral to DVBIC?

Persons with TBI who are eligible for TRICARE or VA benefits may be referred to DVBIC.

How can a patient be referred to DVBIC?

Contact a site directly to begin the referral process that includes a review of all related medical documentation or you may contact headquarters at either 1-800-870-9244 or info@dvbic.org. Headquarters will direct your referral to the appropriate staff.

Where can one learn more about brain injury and DVBIC?

Visit www.DVBIC.org for updates on clinical treatment, research, and educational programs/ materials available from DVBIC. Our web site also has numerous links to other brain injury web sites.

Physiatric assessment
Occupational Therapy
Rehabilitation Nursing
Vocational Assessment
Other rehabilitative therapies as indicated
Physical Therapy
Speech Therapy
Cognitive Therapy
Therapeutic Recreation
Psychology

Published 2/05

26.

USA Today

Posted 3/3/2005 11:12 PM

Key Iraq wound: Brain trauma

By Gregg Zoroya, USA TODAY

A growing number of U.S. troops whose body armor helped them survive bomb and rocket attacks are suffering brain damage as a result of the blasts. It's a type of injury some military doctors say has become the signature wound of the Iraq war.



Shaun Radhay , a Marine, suffered brain damage and other injuries in a mortar blast.

By H. Darr Beiser, USA TODAY

Known as traumatic brain injury, or TBI, the wound is of the sort that many soldiers in previous wars never lived long enough to suffer. The explosions often cause brain damage similar to "shaken-baby syndrome," says Warren Lux, a neurologist at Walter Reed Army Medical Center in Washington.

"You've got great body armor on, and you don't die," says Louis French, a neuropsychologist at Walter Reed. "But there's a whole other set of possible consequences. It's sort of like when they started putting airbags in cars and started seeing all these orthopedic injuries." (**Related item:** [TBI gallery](#))

The injury is often hard to recognize — for doctors, for families and for the troops themselves. Months after being hurt, many soldiers may look fully recovered, but their brain functions remain labored. "They struggle much more than you think just from talking to them, so there is that sort of hidden quality to it," Lux says.

To identify cases of TBI, doctors at Walter Reed screened every arriving servicemember wounded in an explosion, along with those hurt in Iraq or Afghanistan in a vehicle accident or fall, or by a gunshot wound to the face, neck or head. They found TBI in about 60% of the cases. The largest group was 21-year-olds. (**Related story:** [Survivors struggle to regain control](#))

From January 2003 to this January, 437 cases of TBI were diagnosed among wounded soldiers at the Army hospital, Lux says. Slightly more than half had permanent brain damage. Similar TBI screening began in August at National Naval Medical Center in Bethesda, Md., near Washington. It showed 83% — or 97 wounded Marines and sailors — with temporary or permanent brain damage. Forty-seven cases of moderate to severe TBI were identified earlier in the year.

The wound may come to characterize this war, much the way illnesses from Agent Orange typified the Vietnam War, doctors say. "The numbers make it a serious problem," Lux says.

An explosion can cause the brain to move violently inside the skull. The shock wave from the blast can also damage brain tissue, Lux says. "The good news is that those people would have been dead" in earlier wars, says Deborah Warden, national director of the Defense and Veterans Brain Injury Center. "But now they're alive. And we need to help them."

Symptoms of TBI vary. They include headaches, sensitivity to light or noise, behavioral changes, impaired memory and a loss in problem-solving abilities.

In severe cases, victims must relearn how to walk and talk. "It's like being born again, literally," says Sgt. Edward "Ted" Wade, 27, a soldier with the 82nd Airborne Division who lost his right arm and suffered TBI in an explosion last year near Fallujah. Today, he sometimes struggles to formulate a thought, and his eyes blink repeatedly as he concentrates.

27.

Brain injuries range from loss of coordination to loss of self

By Gregg Zoroya, USA TODAY

Posted 3/3/2005 10:23 PM - Updated 3/3/2005 11:17 PM

RICHMOND, VA. — Marine Cpl. Shaun Radhay, 22, survived a mortar blast near Fallujah on Nov. 27. After suffering brain damage in the explosion, he had to learn to walk and talk and dress himself again. (Photos: [Iraq war's legacy](#))



Shaun Radhay works on maintaining his balance with Stewart Mullin at McGuire Veterans Administration Medical Center. - H. Darr Beiser, USA TODAY

"He wants to be the person he was before," says Radhay's mother, Dollie, who moved from Jersey City to a hotel near the Veterans Administration hospital here. For the past two months, she has watched her son learn to use a walker. He was discharged Thursday.

In each war, a new wound emerges — an injury or illness that comes to typify the conflict, says Craig Hyams, a doctor and Veterans Administration official who has done a study of war wounds. In World War I, poison gases damaged lungs. In World War II, radiation from atomic bombs caused cancer. In Korea, the intense cold led to circulation problems. And in Vietnam, Agent Orange led to skin disorders.

Military doctors describe Radhay's injuries as the emerging signature wound of the Iraq war. And they say the wound — called traumatic brain injury — carries many consequences. **(Related story: [Key Iraq wound: Brain trauma](#))**

Army National Guard Chief Warrant Officer John Sims, 51 and now retired, nearly died when his Black Hawk helicopter crashed in Iraq in 2003. He lost a civilian career as a commercial airline pilot because of brain damage he suffered. Worse, he almost lost his wife of seven years, Violeta, because he suddenly saw her as a stranger.

"Six months after the injury, he received amnesia and forgot who I was," Violeta Sims says. "This is a person with the same body, but he's different, very different."

Advances in body armor and helmet design, along with improved emergency medical care and rapid evacuations, have created this new class of injuries. The advances mean troops have a greater chance of surviving major explosions, but many also sustain damage to neurological fibers as a result of the jarring effects of the explosions.

Warren Lux, deputy director of the Defense and Veterans Brain Injury Center at Walter Reed Army Medical Center in Washington, says the brain has a consistency similar to Jell-O. "If you just whip this around in space, you would stretch and tear those nerve fibers," Lux says. "That's what a core injury is in traumatic brain injury."

Roadside bombs, rocket-propelled grenades and mortar rounds are among the most common weapons used against U.S. troops in Iraq. Brain damage can result if a soldier or Marine is thrown by an explosion, injured by shrapnel or merely caught in the blast shock wave, Lux says.

In some cases, troops were close to an explosion but suffered no visible wounds. Later, a wife or supervisor noticed behavioral changes, and the servicemember was diagnosed with TBI.

"They look fine. They think they've just had their bell rung," says Henry Lew, who treats TBI patients at a veterans hospital in Palo Alto, Calif. "But when they get home, they find out they have a lot of problems with daily functioning." Lux says the number of undiagnosed cases is unclear.

"You've got to believe that there are some other people who are exposed to blasts, but don't get serious systemic injuries from it, but may have mild TBI," he says.

The symptoms vary and aren't always obvious. Dizziness, nausea, insomnia, behavioral or concentration problems, irritability, depression and anxiety all might be signs.

"It's so important for that information to get to families and commanders to look for those types of changes," says Thomas DeGraba, neurologist at Bethesda Naval Medical Center near Washington.

Treatments include physical and psychological therapy to help the brain heal, and, on occasion, drugs to assist the servicemember in focusing attention and overcoming depression and insomnia. DeGraba says doctors are developing ways to limit the damage of the wounds, such as quickly restoring blood flow to certain parts of the brain.

In cases of moderate to severe TBI, the most dramatic brain recovery occurs in the first three to six months. Slower healing can take years, and there is almost always some permanent neurological damage. The vast majority of troops diagnosed with mild TBI should fully recover in three months, neurologists say.

This is what should happen in the case of Army National Guard Maj. Russ Smith, 43, who was struck by part of a missile that was fired into the U.S. Embassy in Baghdad on Jan. 29. Two other Americans were killed in that attack.

The blast knocked Smith unconscious, and he suffered burns on his face and received stitches on the back of his head. He lost substantial hearing, developed headaches, and found himself more short-tempered and impatient. After failing short-term memory tests, Smith was diagnosed with mild TBI.

"I try to be conscious of my moods because I know I'm irritable," says Smith, who is married and the father of two girls. He is a patient at Walter Reed. "When I first got back to the States, I realized the most comfortable I was, was in a room by myself."

Neuropsychologist Louis French, who is treating Smith, says the major should fully recover.

Sgt. Edward "Ted" Wade, 27, a soldier with the 82nd Airborne Division, has a more severe case of TBI.

Wade was riding in the back of a Humvee on Feb. 14, 2004, near Fallujah, when a "daisy chain" of buried artillery rounds detonated behind and beneath his vehicle.

The explosion broke Wade's right leg and shredded his right arm. It later was amputated. The blast also blew his helmet off his head, leaving the harness with his chin strap still in place. He lost massive amounts of blood and slipped into a coma.

But after months of rehabilitation, Wade looks much recovered. He is learning to use a prosthetic for his missing right arm, amputated above the elbow. Doctors can only hope time will heal lingering brain damage.

"We've been fortunate in that his personality is very much the same," says his wife, Sarah, who became engaged to Wade before his Iraq tour and married him last November. "Just simple tasks

are more difficult now. Most of his problems are organizational and problem-solving skills. Sometimes his speech can be a little slow, a little slurred."

She's annoyed that people don't grasp what's happened to him.

"It will be the clerk at the store giving him a hard time because he's counting the money and people are waiting," she says. "If it was Down syndrome or something that was obvious, they would be more patient."

28.

Veteran's TBI Resource Information

<http://www.dvbic.org/education.html>

Defense & Veteran's Brain Injury Center

Education

A major focus of the Defense and Veterans Brain Injury Center (DVBIC) is to improve care for TBI patients, provide support to families and facilitate recovery from TBI; therefore, we have developed a range of training and educational materials designed to increase awareness of the effects of TBI. By using web-based technology, we aim to provide TBI specific training for medical providers, family-oriented, informational resources, and access to important new research findings. Click [here](#) to download the DVBIC informational brochure. You will need Adobe Reader to view this document. If you don't have Adobe Reader, click on the following image

Listed below are additional informational resources on brain injury that are available on the web through DVBIC and other organizations.

INDEX

- [Coming Soon](#)
- [Now Available](#)
 - [Heads Up: Brain Injury in Your Practice Tool Kit](#)
 - [National Educational Resources Database](#)
- [Fact Sheets](#)
 - [DVBIC](#)
 - [Defense and Veterans Brain Injury Center Fact Sheet](#)
 - [GENERAL INFORMATION](#)
 - [Traumatic Brain Injury Overview \(Fact Sheet\)](#)
 - [MEDICAL PROVIDERS](#)
 - [Traumatic Brain Injury Facts: Emergency Medical Services \(Fact Sheet\)](#)
 - [When Your Child's Head Has Been Hurt \(Fact Sheet\)](#)
 - [REHABILITATION / EMPLOYMENT / EDUCATION](#)

Coming Soon

An independent study program on a range of TBI specific topics has been developed by the Veterans Health Administration in collaboration with DVBIC. This program will soon be available on-line at <http://www.va.gov/vhi/> This program is one in a series of Veterans Health Initiatives (VHI) published by the VA's Employee Education System and made available to VA, DoD and other interested medical providers. The goal of this program is to prepare providers to better serve veteran patients. VHI courses are fully accredited for continuing education credits by The Accreditation Council for Continuing Medical Education, the American Nurses Credentialing Center's Commission on Accreditation as well a number of other associated health professions. Courses on additional health related topics relevant to veterans may also be found at <http://www.va.gov/vhi/>.



Now Available

[Index](#)

[Heads Up: Brain Injury in Your Practice Tool Kit](#) Designed by the Centers for Disease Control (CDC) this tool kit provides physicians with specific information on mild traumatic brain injury (MTBI) prevention, early diagnosis, and medical management.

[Index](#)

[National Educational Resources Database](#) This database contains specific bibliographic and order information for videotapes, audiotapes, and unpublished printed materials on TBI. Some materials are available as downloadable files. The database was created as a collaborative effort between the National Institute on Disability and Rehabilitation Research, U.S. Department of Education and the Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

29.

Fact Sheets

[Index](#)

DVBIC

[Defense and Veterans Brain Injury Center Fact Sheet](#) This fact sheet defines TBI, lists the costs and risks of TBI for Americans and military personnel, and describes the mission and work of DVBIC.

[Index](#)

GENERAL INFORMATION

[Traumatic Brain Injury Facts](#)

Fact sheet on Traumatic Brain Injury including information on The Problem, Consequences, Causes, Cost, Groups at Risk, Prevention Strategies, CDC Activities, Prevention Tips, Related Resources, References.

[Index](#)

MEDICAL PROVIDERS

[Traumatic Brain Injury Facts: Emergency Medical Services \(Fact Sheet\)](#)

This publication lists the possible symptoms that individuals should look for after sustaining a brain injury. This fact sheet is designed for prehospital providers to distribute to individuals who have sustained a brain injury.

[When Your Child's Head Has Been Hurt \(Fact Sheet\)](#)

This publication helps families, school nurses, pediatricians, and other children's health specialists identify post concussive disorders after discharge from the emergency department or hospital.

[Index](#)

REHABILITATION / EMPLOYMENT / EDUCATION

[Traumatic Brain Injury Facts: Vocational Rehabilitation and Employment Services \(Fact Sheet\)](#)

This fact sheet provides an overview of TBI for vocational rehabilitation counselors. It also offers strategies for improving employment outcomes after a brain injury.

[Traumatic Brain Injury Facts: Children and Youth \(Fact Sheet\)](#)

This fact sheet provides the medical and Individuals with Disabilities Education Act definitions for traumatic brain injury (TBI); describes the causes and consequences of TBI for children and youth; and describes the educational supports available for students with TBI and their families.

<http://www.hhs.gov/newfreedom/final/vafull.html>

See separate file for copy of page & Report

Delivering on the Promise

[Table of Contents](#)

U.S. Department of Veterans Affairs

[PDF = 46K]

Self-Evaluation to Promote

Community Living for People with Disabilities

Report to the President

on Executive Order 13217

<http://www1.va.gov/vhi/> Veteran's Health Initiative

TBI Independent Study Course

http://www1.va.gov/vhi/docs/TBI_final_www.pdf

VA Self-Evaluation 2003

[U.S. Department of Health & Human Services](#)



[Initiative](#) ~ [Executive Order](#) ~ [HHS Role](#) ~ [News & Additional Resources](#)

Delivering on the Promise

[Table of Contents](#)

U.S. Department of Veterans Affairs

[PDF = 46K]

Self-Evaluation to Promote
Community Living for People with Disabilities
Report to the President
on Executive Order 13217

[Executive Summary](#)

[Veterans Benefits Administration](#)

- I. [Description of Services](#)
- II. [Eliminated Barriers](#)
- III. [Remaining Barriers](#)

[Veterans Health Administration](#)

- I. [Description of Services](#)
 - 1. Health Care Benefits
 - 2. Specialty Services
 - 3. Home and Community Services
 - 4. Access to Services
 - 5. Consumer and Stakeholder Involvement
- II. [Eliminated Barriers](#)
 - 1. Reduced Admissions and Lengths of Stay
 - 2. Homemaker, Home Health Aide, Respite and Adult Day Health Care Services
 - 3. Mental Health Services
 - 4. The Veterans Health Care Eligibility Reform Act of 1996 (Public Law 104-262)
 - 5. Veterans Millennium Health Care and Benefits Act of 2001 (Public Law 106-117)
 - 6. The Veterans Benefits and Health Care Improvement Act (Section 221 of Public Law 106-419)
- III. [Remaining Barriers](#)
 - 1. Community Services

Executive Summary

The primary mission of the Department of Veterans Affairs (VA) is providing for the needs of veterans, offering them a range of compensation and pension benefits, vocational counseling and rehabilitation, health care and memorial services. In addition to these benefits, VA also administers education and home loan programs. President Abraham Lincoln's pledge to "care for him who shall have borne the battle" is a constant reminder to VA employees that veterans are at the heart of our daily business.

Joining the Interagency Council as a voluntary partner enabled VA to conduct a full evaluation of our programs and services, identifying barriers to community access and developing an action plan to eliminate those barriers. Our Department self-evaluation resulted in the understanding that while we have already removed a significant number of barriers through changes in policies, Federal regulations and law, VA is still hindered in its ability to provide veterans with services necessary to allow them to remain in their homes and communities. While VA has identified the remaining barriers, we are still in process of reviewing these barriers and determining the appropriate action.

Veterans Benefits Administration

I. DESCRIPTION OF SERVICES

1. **The Veterans Benefits Administration (VBA) provides disability compensation and pension to more than 2.7 million veterans each year.** Disability compensation is a monetary benefit paid to veterans with service-connected disabilities. "Service connected" means that the disability was a result of disease or injury incurred or aggravated in line of duty during active service. Disability compensation is graduated according to the degree of the veteran's disability.
2. **Veterans with nonservice-connected disabilities may be eligible for VA pension programs, which provide income support to veterans with wartime service who become permanently and totally disabled as a result of nonservice-connected conditions.** Pensions may also be paid to the survivors of wartime veterans. Entitlement to pension is subject to income limitations. In Fiscal Year (FY) 2001, VBA estimates paying \$22 billion in disability compensation, survivor benefits and disability pension to 3.2 million people.
3. **VBA offers additional programs to support the needs of disabled veterans:**
 - **Vocational Rehabilitation and Employment (VR&E)** -- The VR&E Program provides comprehensive services and assistance necessary to enable veterans with service-connected disabilities and employment handicaps to become employable, and obtain and maintain stable, suitable employment. When the severity of a veteran's disability prohibits suitable employment, the program offers services and assistance to enable the veteran to achieve maximum independence in daily living.

Program services may include evaluation of rehabilitation needs, employment services, medical and dental care, financial counseling, and where needed, education or training to develop marketable job skills. Veterans pursuing education or training may also receive a subsistence allowance.

In addition to administering the VR&E Program, VBA's VR&E Service administers a program of education and training benefits for certain dependent children who have spina bifida as a result of a parent's active service in Vietnam. The VR&E program also provides educational and vocational counseling for eligible service members, veterans, and dependents. This counseling service assists the participant in selecting educational or vocational goals and the facilities through which those goals may be reached.

- **Aid and Attendance/Housebound Status** -- Disabled veterans in receipt of service-connected compensation or nonservice-connected disability pension who are determined by VA to be housebound or in need of regular aid and attendance services are eligible for additional monetary compensation or pension. These additional funds can be used to pay for home care services received through home care agencies or provided by family members.
- **Specially Adapted Homes** -- Veterans who are permanently and totally disabled due to service-related conditions are eligible for a grant of up to \$43,000 to purchase or remodel a home to assist with accessibility and independence. Veterans who are permanently and totally disabled due to service-connected blindness in both eyes or loss of use of both hands are also eligible for a grant of up to \$8,250 to adapt a home to assist with accessibility and independence. The VA awarded 590 new grants in FY 2000, totaling over \$22.5 million in benefits.
- **Automobiles** -- Veterans who have, through their service, lost hands, feet or vision may be eligible for \$8,000 toward the purchase of a specially-adapted automobile.

- **Clothing Allowance** -- Veterans who have service-connected disabilities requiring use of prosthetic or orthopedic appliances that wear out or tear clothing are eligible to receive annual clothing allowances.
4. **These compensatory and rehabilitation benefits allow millions of disabled veterans to live independently and to maximize their potential.**

II. ELIMINATED BARRIERS

VR&E has begun new initiatives to reduce or eliminate barriers in identifying needed vocational rehabilitation services, delivering the needed services, and breaking down employment barriers experienced by people with disabilities.

- **Separation Physicals** -- VA has partnered with the Department of Defense to streamline the compensation claims process through conducting one physical examination for all military personnel separating from active duty that serves as the military separation physical and the VA compensation physical. This change in policy has reduced duplication, resulting in one physical exam rather than two, and allowed claims for VA service-connected disabilities to be processed more quickly.

Contributors to this goal include:

- relocation of VR&E staff to be more proximate to the veteran population;
 - use of contract service providers to augment VR&E staff and to help reduce the workload and expedite rehabilitation evaluations;
 - use of portable computer and video conferencing tools that allow case managers to do their jobs virtually anywhere; and,
 - use of "distance learning," such as the Internet, as avenues for training and employment that have not been previously available.
- **Employment Assistance** -- The vocational rehabilitation and employment for service-disabled veterans is a job-focused program to help eligible, service-disabled veterans prepare for, obtain and maintain suitable employment. In some cases, the veteran possesses adequate job skills and needs assistance in marketing those skills. In other cases, due to the lack of developed job skills or the handicapping aspects of the veteran's disabilities, the veteran is assisted in choosing a viable occupation and an Individualized Written Rehabilitation Plan (IWRP) of services is developed. Necessary services often include training or education, and VR&E provides for all authorized expenses of school, including tuition, books, and fees. A veteran may be ready to go to work, but may need assistance with effective job-hunting. VR&E has participated in the following programs or initiatives:
 - The Disabled Transition Assistance Program (TAP) briefings conducted at selected military discharge sites can assist service members who may need rehabilitation services and are pending discharge or medical retirement. In many cases, service members can begin working on the objectives of the rehabilitation plan prior to their separation or medical discharge.
 - Through the assistance of our partner agencies and stakeholders, service-disabled veterans are identified and assisted in obtaining suitable employment, or exploring the option of self-employment.
 - The Employment Specialist Pilot Program, which works with employers on the advantages of hiring vocational rehabilitation graduates and which examines job market trends. Trend data are used to assist veterans in selecting viable vocational goals and in tailoring training programs to meet the current and projected needs of employers.
 - **Case Management of VR&E Services** -- Each veteran participating in a VR&E program is assigned a case manager to coordinate the services the veteran receives and to follow the veteran from onset of services through placement in suitable employment. To facilitate case management, the VR&E Service has:

- Developed and deployed a state-of-the-art electronic case management system that tracks the veteran's progress in his/her program, authorizes required tuition, books, fees, supplies and equipment for the veteran, and expedites payments to the vendors.
- Developed and implemented a streamlined system that allows case managers to provide the right services at the right time, on an individualized basis, while reducing or eliminating work processes which are not sufficiently productive.

III. REMAINING BARRIERS

- **Backlog of unprocessed claims** -- Currently, VBA has a backlog of 661,000 claims for 2.7 million veterans and survivors. The latest caseload numbers to be published the budget is 2.3 million in FY 01 and 02 and 2.4 in FY 03.
 - Secretary Principi has established a team at the Cleveland VBA Regional Office that will focus initially on the longest pending claims and the claims of the oldest veterans.
 - The Secretary has instructed the Veterans Health Administration (VHA) to work in cooperation with VBA to quickly schedule and complete physical and psychological examinations as part of the compensation and claims process.

Veterans Health Administration

The Veterans Health Administration (VHA) operates 172 medical centers, more than 800 ambulatory care clinics, 137 nursing homes, 43 domiciliarys, 206 readjustment counseling centers and 73 comprehensive home care programs. VHA has a comprehensive array of services for disabled veterans, including state-of-the-art treatment for spinal cord injury, blind rehabilitation, chronic mental illness, traumatic brain injury, amputations, brain dysfunction, post-traumatic stress disorder (PTSD), and substance abuse. Nine VHA research centers of excellence conduct studies emphasizing wheelchair design and technology, brain rehabilitation, spinal cord injury and multiple sclerosis, early detection of hearing loss, orientation techniques for blind persons, amputation prevention and joint replacement. In addition, VHA has the largest network of homeless assistance programs in the country. The primary objective of VHA's programs is to achieve the maximum independence for veterans by restoring lost function or decreasing the impact of their disabilities. VHA has a Central Office position of Coordinator for Special Disability Programs.

For most of its 70-year history, VA was primarily an inpatient, facility-based system. In the 1990s, the health care industry in America changed dramatically, with demands for lower costs, greater accountability and higher quality. The basic system of health care delivery was reformed from hospital-centered care to managed, patient-centered primary care and necessary specialty care. Beginning in 1995, VHA began a fundamental transformation, developing into the largest integrated health care system in the Nation. Inpatient wards were closed as care shifted to ambulatory settings and primary care models. The number of bed days of care per 1,000 users of acute care facilities was reduced by 21 percent between FY 1995 and FY 1996. Since 1995, VA has eliminated more than 6,000 inpatient beds and established over 2,000 psychosocial residential rehabilitation beds. Lengths of inpatient admissions were drastically reduced, the bulk of care was provided in outpatient clinics, and VA began to expand home-based services.

I. DESCRIPTION OF SERVICES

1. **Health Care Benefits** -- VA provides a comprehensive package of outpatient and inpatient services.
 - a. **Primary Health Care** assure that one team of providers oversees all of the health care services provided to veterans in their panels. Primary care providers offer the full range of services, including preventive care and treatment for acute and chronic medical conditions. The advantage to the veteran is that she/he is seen by the same provider or team of providers at every visit, allowing for the development of longer term treatment relationships. The primary care team members have longitudinal experience in caring for the veteran, reducing the need to recapture the same medical information and history at each visit and allowing providers to quickly recognize changes in health status.

By October 1996, 97 percent of VHA facilities had developed primary care teams; all VHA facilities had such teams as of FY 2001. Each veteran receiving care in VHA is now assigned

to a primary care team and a primary care provider. The interdisciplinary primary care team typically includes physicians, physician assistants, nurse practitioners, registered nurses, licensed practical nurses, social workers and clerical staff. Additional services are provided by registered dietitians, pharmacists, psychologists and chaplains.

Each veteran followed by a primary care provider and team receives a comprehensive biopsychosocial assessment, which identifies health, mental health, and psychosocial needs and problems. For example, veterans identified who have suffered sexual trauma are referred for mental health treatment services if they choose.

The assessment process is designed to identify veterans who are at high medical or psychosocial risk. High-risk criteria include the following:

- chronic, unstable medical or psychiatric condition;
- catastrophic illness or injury;
- frail elderly;
- suspected abuse or neglect;
- incompetent or in need of a payee, guardian or conservator;
- homeless with no apparent fixed or temporary shelter; and,
- unable to care for self (physically, emotionally or mentally).

Nurse and social worker case managers are assigned to primary care teams to work closely with high risk veterans, many with disabilities, to assure that their special needs are met. Case managers typically conduct thorough assessments of their patients, including home visits to determine the need for home equipment and home and community services and for assessing the safety of the home environment, the ability of the veteran to perform activities of daily living, and the availability of support systems.

Case managers provide a variety of supportive and psychosocial services to allow disabled veterans to remain in their homes and in the community in the least restrictive environment, addressing health and psychosocial problems early to prevent unnecessary admissions to hospitals or institutions. Case managers maintain frequent contact with the veteran and family members, building strong relationships and serving as the liaison for the veteran and family with the VHA medical facility and with community agencies. They make referrals for additional services from VA, from other governmental programs and from community agencies and track the appropriateness and quality of those services. Case managers offer patient and family education as well as counseling services.

- b. **Preventive services**, including immunizations, screening tests, and health education and training classes, are available to all enrolled veterans.
- c. **Diagnostic and treatment services** determined to be necessary for the care of veteran patients are provided.
- d. Necessary **surgical procedures** are provided. Over the last five years, VHA has offered more outpatient surgery, in many cases eliminating the need for inpatient admission.
- e. Comprehensive inpatient and outpatient **mental health and substance abuse treatment** services are available. Veterans assigned to primary care teams are routinely screened for depression and referred for treatment.
- f. **Home health care** services such as home-based primary care and homemaker and home health aide services, are available.
- g. **Respite, hospice care and palliative care** are offered for inpatients and outpatients.
- h. **Urgent and limited emergency care services** are provided in some VA facilities.
- i. VHA provides all medically necessary **drugs, pharmaceuticals and supplies** for enrolled veterans. Nonservice-connected veterans are subject to a small co-payment, generally much less than private insurance plans. VA physicians prescribe atypical

antipsychotics and other medications to enhance functioning of seriously mentally ill veterans, allowing them to remain in the community with their symptoms under control.

2. **Specialty Services:**

- **Spinal Cord Injury and Disorders Treatment** -- Services include acute inpatient, rehabilitation, outpatient, and home-based care as well as annual health examinations and all medically necessary equipment and supplies. Each VHA facility has a spinal cord injury coordinator who oversees the services provided to veterans with spinal cord injury. There are 23 VHA spinal cord injury centers across the country. The goal of spinal cord injury and disorders rehabilitation is to allow veterans to live independently or with supportive community services when independent living is not realistic.
- **Blind Rehabilitation** -- The Blind Rehabilitation Service provides programs to enhance the quality of life for eligible blinded veterans through identification, treatment, education and research programs. This is accomplished through Visual Impairment Services Team Coordinators at every VHA facility; 10 VHA Blind Rehabilitation Centers; and 20 Blind Rehabilitation Outpatient Specialists located nationwide and in Puerto Rico. These programs and services assist visually impaired veterans in adapting to community living.
- **Traumatic Brain Injury (TBI)** -- Services include evaluation and referral to a VHA TBI center, which is accredited by the Commission on Accreditation of Rehabilitation Facilities. TBI centers provide comprehensive assessment, acute rehabilitation and neurobehavioral management, outpatient services, referrals for community-based support care and all medically necessary equipment and supplies. There are four VHA TBI centers, 22 supporting network centers and 26 TBI coordinators who facilitate referrals and coordination of services.
- **Mental Health** -- Services include acute inpatient, outpatient, rehabilitation and residential mental health treatment. Mental Health services are comprehensive and offer substance abuse treatment and specialty treatment for post-traumatic stress disorder.
- **Homeless Veterans** -- VA provides a wide range of services for homeless veterans. VA staff conduct outreach to area homeless shelters, network with community agencies to facilitate referral of veterans to VA facilities, and organize annual stand-down events across the country. VA also assists homeless veterans with accessing medical and other VA benefits and services. Case management services are offered, as well as all necessary medical and mental health treatment services. Several different types of residential care and transitional living options are available. In addition, non-profit organizations and local governments may apply for grants under the VHA Homeless Grant and Per Diem Program to construct, acquire or remodel buildings for housing or service centers for homeless veterans. Organizations and agencies awarded such grants may be eligible to receive per diem payments from VHA for homeless veterans receiving services.

3. **Home and Community Services:**

- **Contract Nursing Home Program** -- Each day, VHA pays for skilled nursing care in contract community nursing homes for more than 3,600 veterans. Each VHA facility has a community nursing home program coordinator who oversees appropriate community placements, monthly nursing and social work visits to veterans in nursing homes, and annual inspections of each nursing home under contract. The care provided to each veteran is closely monitored.
- **VA Nursing Home Care** -- There are 137 nursing homes operated in VHA facilities. Many of these nursing homes have a rehabilitative mission, with the goal of returning veterans to the community with maximum functioning and supportive services.
- **State Veterans Homes in Partnership with VA** -- VA provides per diem payments for veterans residing in state veterans homes.
- **Contract Adult Day Health Care Program (CADHC)** -- VHA pays for adult day health care services in the community for veterans who would otherwise be placed in institutions. CADHC allows veterans to remain in their homes and allows caregivers to work outside the home, knowing that the veteran is under the care of health care professionals for up to eight hours per day, five days per week.

- **Homemaker/Home Health Aide Program** -- VHA offers homemaker and home health aide services to disabled veterans, allowing them to remain in their homes even when their caregivers are unable to provide for all of their care.
- **Respite and Contract Respite Programs** -- VHA offers up to 30 days per year of respite care services to veterans. VA nursing homes and intermediate care units have designated respite beds, and many VHA facilities offer contract respite services in community nursing homes for veterans with special needs. The respite services allow caregivers to take vacations and have a break from the pressures of providing 24-hour care to a disabled loved one.
- **Caregiver Support Services** -- VHA offers caregiver support, including facilitated support groups, information and education, and counseling services. Such supportive services assist caregivers in keeping disabled veterans in their homes.
- **Home-Based Primary Care (HBPC)** -- There are 73 HBPC programs in VHA facilities nationwide. Physicians, nurse practitioners, registered nurses, social workers, dietitians and occupational and physical therapists comprise the HBPC teams. Each week, several team members make home visits to disabled veterans enrolled in the program. They provide medical care, nursing and dietary instruction, home evaluations, psychosocial interventions and case management services. Nearly 15,000 veterans received care through HBPC programs in FY 2000. The average number of veterans receiving such care on any given day is 7,312.
- **Hospice Services** -- VHA offers in-home and medical center hospice and palliative care services for terminally ill veterans.
- **Community Residential Care** -- VHA assists veterans with the financial means to pay for residential or board and care services in finding an appropriate facility. VHA social workers negotiate rates with community residential care operators to assure veterans pay reasonable rates. VHA teams conduct annual inspections of each facility.
- **Domiciliaries** -- VHA operates 43 domiciliaries, which function as intermediate treatment and transitional living facilities for disabled veterans.
- **Transitional Residential Rehabilitation and Treatment Programs** -- VHA has a variety of residential rehabilitation programs for veterans, most of whom are homeless and have a mental illness or disability. One hundred three Psychiatric Residential Rehabilitation Treatment Programs provide residential treatment and/or transitional housing services to approximately 15,000 veterans suffering from substance use disorders, post-traumatic stress disorder or other serious mental illnesses, and many of whom are also homeless. VHA contracts with over 250 halfway houses and community-based residential treatment programs to provide residential care for over 4,500 homeless veterans each year. In addition, under the Homeless Providers Grant and Per Diem Program, VHA offers grants to state and local governments, nonprofit organizations and Indian tribal governments to help develop transitional, supportive housing programs for homeless veterans.

From FYs 1994-2000, VHA offered \$53 million in grants to help establish approximately 5,000 supportive housing beds. In FY 2000, 2,326 beds were operational, and VHA provided per diem payments to offset the costs of these programs. Over 3,500 homeless veterans were served in these community-based supportive housing programs in FY 2000.

- **Partial Hospitalization and Day Treatment Programs** -- These programs are designed to provide comprehensive psychiatric rehabilitation services that allow veterans with serious mental illnesses to remain in community settings and to improve their quality of life.
- **Home Improvement and Structural Alterations Grants** -- Prosthetic and Sensory Aids Service provides a grant of up to \$4,100 for veterans with service-connected disabilities for access and necessary alterations to a disabled veteran's home to enable continuation of

medical services. Nonservice-connected disabled veterans may be eligible for a maximum of \$1,200.

- **Compensated Work Therapy (CWT)** -- As part of transitioning veterans into the community, VHA offers 100 CWT programs serving 14,000 veterans each year. CWT allows veterans to learn job skills and to earn wages, some for the first time in years. CWT generates more than \$30,000,000 in income each year for veterans from its agreements with participating companies. Upon having demonstrated their abilities, graduates of the program go on to regular employment. CWT also provides treatment in a transitional residential model, where veterans work in CWT and live in one of 40 transitional residences located at one of 30 VHA medical centers. The program is authorized by law to charge participants a fee from their CWT earnings. The fee is used to support operating and maintenance costs for the residences.
- **Senior Companion/Peer Counseling Services** -- Homebound, disabled and frail elderly veterans benefit from enrollment in senior companion programs and from receipt of peer counseling services. Senior companions and peer counselors visit veterans in their homes to provide emotional support, recreational activities, and friendship. They also alert VHA primary care team members of concerns about the veteran's health and well-being.
- **Durable Medical Equipment, Prosthetic Devices and Orthopedic Appliances** -- Veterans found to have a medical need for such equipment, devices and appliances can receive them from VHA. These items include hospital beds, regular and motorized wheelchairs, motorized lifts, adaptive equipment for automobiles and vans, home safety equipment, home oxygen, artificial limbs, etc.

4. **Access to Services:**

- **Community-Based Outpatient Clinics** -- In an effort to assure easy access to health care, VHA has established a network of community-based outpatient clinics (CBOCs). The CBOCs allow veterans to receive care in their communities rather than traveling great distances to VHA medical centers. These access points have allowed an additional 500,000 veterans to receive VA health care services. VHA operates more than 800 facility and community-based outpatient clinics, which offer primary care services, management of acute and chronic illnesses and conditions, and referrals for subspecialty care. Many CBOCs provide mental health services and referrals for specialty mental health care. Eighty-seven percent of all veterans who are enrolled live within 30 miles of a point of service.
- **Beneficiary Travel** -- VA pays mileage for use of personal vehicles and for ambulances and wheelchair vans for some veterans receiving outpatient care from VHA facilities. This financial assistance helps low income, disabled veterans receive needed health care services.
- **Disabled American Veterans (DAV) Transportation Services** -- The DAV has entered into agreements with VHA to provide wheelchair vans and drivers to ferry veterans to VHA facilities for medical appointments and care. Without such services, many of these disabled veterans would be forced into institutional settings or would forgo needed health care services.

5. **Consumer and Stakeholder Involvement:**

VA continually seeks to involve veterans, family members, advocacy groups, veterans service organizations and other stakeholders in all plans for providing services and health care to veterans. Most VHA facilities hold regular formal meetings with veterans organizations to keep them informed, listen and respond to their input and concerns and involve them in planning activities. On the national level, there are a variety of consumer task forces and panels that meet regularly with top VA officials. VHA Mental Health officials have worked with a National Mental Health Consumer Liaison Council that includes community mental health organizations, veterans service organizations and Substance Abuse and Mental Health Services Administration. The partnership has resulted in the development of many locally-affiliated mental health consumer councils at VHA medical centers.

II. ELIMINATED BARRIERS

1. **Reduced Admissions and Lengths of Stay:**
 - Restructuring VA health care and opening community-based outpatient clinics have allowed VA to treat more veterans closer to home at less cost.
 - Primary care and case management have reduced unnecessary admissions and lengths of admissions for persons with physical and mental disabilities.
 - Ambulatory surgery and other procedures have reduced unnecessary admissions.
 - Veterans living in VHA long-term care settings (psychiatric units, nursing home care units and domiciliaries) have been provided with the equipment, community-based services and medications to allow them to reside in a less restrictive environment.
2. **Homemaker, Home Health Aide, Respite and Adult Day Health Care Services:**
 - The ability of VHA to provide or pay for these services has allowed countless numbers of veterans to remain in their homes rather than be placed in institutions.
3. **Mental Health Services:**
 - **Mental Health Intensive Case Management Programs** -- Previously called intensive psychiatric community care, these programs are designed to help veterans who are frequently admitted or who are frequent walk-in patients live more successfully in the community. The programs utilize intensive case management services with a low staff to veteran ratio using evidence-based assertive community treatment principles.
4. **The Veterans Health Care Eligibility Reform Act of 1996 (Public Law 104-262):**
 - **Made Eligibility the Same for Hospital and Outpatient Care** -- VHA facilities no longer have to admit veterans in order to make them eligible for outpatient care and medical and prosthetic equipment.
 - **Clarified VA's Authority to Furnish Preventive Services to Veterans Not Otherwise Receiving Care** -- Prior to passage of this legislation, VHA could only provide outpatient care to nonservice-connected veterans as follow-up to inpatient treatment. There had been no previous authority for VHA to provide preventive and primary care services.
 - **Eliminated Certain Restrictions on Furnishing Prosthetics for Nonservice-Connected Disabilities to Veterans Receiving Outpatient Care** -- Inpatient admissions were no longer required for eligibility.
 - **Required VA to Establish an Annual Patient Enrollment System** - VHA established seven enrollment categories, based on special disability groups and income. Enrollment in FY 2001 grew to 6 million veterans, approximately 20 percent of the total veteran population.
 - **Required VA to Maintain its Capacity to Treat Veterans Requiring Specialized Treatment or Rehabilitation** -- The treatment of disabled veterans continues to be the foundation of VHA health care services. This section of the law required VA to maintain its capacity in special emphasis programs. VHA identified twelve special emphasis programs:
 - Blind rehabilitation
 - Geriatrics and long-term care
 - Homelessness
 - Persian Gulf Veterans programs
 - Post-traumatic stress disorder
 - Preservation Amputation Care and Treatment
 - Prosthetics
 - Readjustment counseling services
 - Seriously mentally ill
 - Spinal cord injury and disorders
 - Substance abuse treatment
 - Women veterans programs
 - **Authorizes VA to contract with community providers for the sharing of health care services** -- This has allowed VHA to establish contract community-based clinics in regions of the country with insufficient veteran populations to support a VA-staffed clinic.
5. **Veterans Millennium Health Care and Benefits Act of 2001 (Public Law 106-117):**

- **Provides Mandatory Nursing Home Eligibility for Service-Connected Veterans** -- Requires VA to provide or pay for nursing home care for veterans who are rated 70 percent or more disabled and those needing nursing home care for a service-connected condition.
 - Requires VA to provide an extended care benefits package that includes both institutional and non-institutional benefits, such as adult day health care, community nursing home care, domiciliary care, geriatric evaluation and respite care.
 - Requires VA to provide alternatives to institutional care for elderly and disabled veterans.
 - Changed the previous six-month limitation on adult day health care services for some disabled veterans to an indefinite benefit based on the needs of the veteran.
 - Requires VA to maintain the level of services and staffing in long-term care programs provided nationally in VHA facilities during Fiscal Year 1998.
 - Authorizes VA to fund pilot programs for the provision of all-inclusive care for elderly veterans.
 - Authorizes VA to fund a pilot program for the provision of assisted living services.
 - Establishes a special eligibility category for VA health care for veterans awarded the Purple Heart.
6. **The Veterans Benefits and Health Care Improvement Act (Section 221 of Public Law 106-419):**
- **Authorizes VA to provide temporary lodging services for veterans and those providing familial support.** This gives VHA statutory authority to provide or to pay for temporary lodging for veterans living too far to commute to the closest VHA facility for outpatient care and procedures.
 - Authorizes VA to accept, maintain and operate Fisher Houses, donated to the Department by the Fisher House Foundation to temporarily lodge family members of hospitalized veterans.

III. REMAINING BARRIER

1. Community Services:

- **Limited community resources in rural communities** -- For disabled veterans living in rural parts of the country, the necessary community services may not exist to allow them to remain in their homes. Even if VA is willing to pay for homemaker and home health aide and adult day health care services, if no high quality community agencies are available to provide the care, the veteran suffers. Adequate mental health services in the community may not exist to allow seriously mentally ill veterans to reside in the community.
- **Transportation** -- Transportation to VHA facilities continues to be problematic in rural parts of the country, despite the Disabled American Veterans transportation network. Some veterans in these areas have no means of private transportation, even if they are eligible for VA beneficiary travel reimbursement.
- **Availability of geropsychiatric services** -- As seriously mentally ill veterans age, their overall health can deteriorate and they can develop health care problems associated with old age (dementia, Alzheimer's disease, etc.). These veterans with both physical and mental health disabilities are in need of specially structured environments and services to assure their health, safety and well-being. There is a paucity of geropsychiatric services available both within and outside VHA.
- **Mental Health in CBOCs** -- Some VHA community-based outpatient clinics (CBOCs) do not offer basic mental health services. Recently the Assistant Deputy Under Secretary for Health has required that all facilities submit plans for the provision of mental health services to veterans receiving care in CBOCs in fiscal year 2002. L

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