Extraordinary War Wounds

Richard (Sal) Salcido, M.D., Ed.D.
The Erdman Professor Of PM&R University of Pennsylvania.
Editor In Chief of Advances In Skin And Wound Care
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Goals of the Discussion

- Review national scope of health needs and long term cost after 15 years of war
  - Cost in Human terms
  - Cost in Health care
- Signature Wounds
- Current Wound Warrior Care
- Private –Community-Government Relationships
- Advances in Military Wound Care
- Discussion

The Only Winner In War Is Medicine

- Whether you support or oppose the current armed conflicts in the Middle East-Operation Iraqi Freedom and Enduring Freedom in Afghanistan (OIF-EFA); “I believe we can all agree that the common denominator of war is loss of life and limb.” (Salcido 2007)
- “If war is the dark side of humanity, then military medicine is the light,” (2013) Dr, Jonathan Woodson is the Assistant Secretary of Defense for Health Affairs

Estimated War Cost

Pentagon War Appropriations
Pentagon Base Budgets, Interest Payments Veteran's Care, Homeland Security, & War-related Aid

Economic Costs Summary: $4.4 Trillion and Counting

Human Cost

- 6,800 American SM's have died in the wars in Iraq and Afghanistan
  - deaths include IEDs, hostile fire, vehicle crashes, illness, and suicide
- An estimated 6,790 private contractors working for the US have died in the war zones.
  - In recent years, contractor deaths have exceeded uniformed deaths.
- Coalition partners: 30,500 uniformed Afghans, Iraqis and other allies have died since 2001
- High percentage of returning young veterans have died
  - as a result of drug overdose, suicide or vehicle crashes
  - The suicide rate doubled in the Army during the first decade of the wars among both the deployed and the non-deployed

References:

U.S Battlefield Casualties and Post-Combat Disability Claims
Families & Communities’ Assume Burden

- 2.5 million SMS deployed since 2000, nearly half with multi-deployments
- Burden falls to families and to Communities
- Child Abuse in Army families three times higher with parent deployment
- From 2001 through 2011, alcohol use associated with physical domestic violence in Army families increased by 54%, and child abuse by 49%
- Related issues:
  - Suicide, unemployment, preexisting conditions, high mortality in auto crashes

Five Myths: Military Suicide

1. Suicides have increased because we have overstretched our troops.
2. Suicides should decline with the end of the Iraq and Afghanistan wars.
3. Suicides have increased because the military lowered its recruitment standards and forced soldiers to remain on active duty.
4. The weakest troops are most at risk.
5. This is a problem unique to the military.

Long Term Care: Iraq & Afghanistan

- Traumatic Brain Injury
- PTSD, Moral Injuries
- Mental Health Issues
- Musculoskeletal
- Blast Injuries [IEDs]
  - Extremity Amputations
  - Complex Perineal Injuries
  - Pulmonary
  - Abdominal

Signature Wounds

- Evacuation Chain

From Injury to Definitive Care

THE GOLDEN HOUR

Injuries

Groin Injuries


Mine-Resistant, Ambush-Protected (MRAP)


CFI BAMC: San Antonio

Naval Medical Center San Diego's Comprehensive Combat and Complex Casualty Care (C5) facility

Advances in Military Wound Care

- U.S. Department of Defense’s Committee on Tactical Combat Casualty Care (CoTCCC) updated its guideline recommendations to include Hem Con’s ChitoGauze hemostatic chitosan-coated gauze product (2014).
- Pocket-sized imaging devices like the ultrasound technology initially developed for military deployment and are being used in emergency rooms.
- Resusix, a spray-dried pooled plasma replaces lost blood on the battlefield. It is stored in two pouches, one containing powder and the other reconstitution fluid. When the seal is broken, the two mix together and can then be delivered to the wound.

- Versajet (TM) “hydro-surgery” Debridement
- Silver Containing wound plasters
- Topical Negative Pressure
- Extra cellular Matrix (collagen, Elastin and Fibrinogen) a regrowth lattice
- Procellera® Antimicrobial wound dressing microcurrent technology
- Enluxtra HumifiberT Wound Dressings are intended as an effective barrier to reduce microbial penetration through the dressing.

The Defense Advanced Research Projects Agency

The foam-based product developed by Arsenal Medical for DARPA can be injected into a wounded soldier on the battlefield to slow blood loss until the patient can be transported to an appropriate medical facility. DARPA recently awarded a $15.5 million Phase II contract to Arsenal Medical to continue development of the treatment system and support regulatory submission. DARPA anticipates continuing the Wound Stasis program through at least FDA approval of a prototype device.

Intrepid Dynamic Exoskeletal Orthosis IDEO


Endo Prosthesis, Robotics, Exoskeletons & Orthotics

Master Sergeant Leroy Petry, Medal of Honor

Jul 12, 2011
Army Sgt. Jerrod Fields

An Army World Class Athlete Program sprinter and Paralympic hopeful, and a veteran of the U.S. Olympic Training Center in Chula Vista, Calif. Above, the former amputee, Fields won a gold medal in the 100 meters with a time of 12.15 seconds at the Endeavor Games in Edmond, Okla., on June 13, 2009.


Endo Prosthesis

http://www.jisrf.org/images/OsteointegrationNaziad2010/figure1.jpg

Hand/A X transplant Surgery for Wounded Warrior: Dr. W. P. Andrew Lee, Johns Hopkins University

SGT. Brendan Marracco & W. P. Andrew Lee, M.D., Chairman of the Department of Plastic Surgery and Reconstructive Surgery, Johns Hopkins Medicine

"Let us strive on to finish the work we are in; to bind up the nation's wounds; to care for him who shall have borne the battle and for his widow and his orphan; to do all which may achieve and cherish a just and lasting peace among ourselves, and with all nations."

Abraham Lincoln
16th U.S. President