Lessons Learned: Civilian to Military

Challenges and Best Practices: A Systems Approach
Achieving Zero Preventable Deaths
Bethesda, Maryland
April 19, 2017

Advancing the science and practice of trauma care together...
Winds of WAR on medicine...

• Turn to surgery and care of the injured.....
  History shows there is no greater stimulus to the advancement of the care of the injured than war...
  Hippocrates, Pare, Larrey, Billroth.....
  ....Churchill, Debakey, Hughes, Rich.....
  ....Pruitt, Trunkey, Carlton...
  WWII, Korea, Viet Nam, Iraq & Afghanistan....
  each responding to more devastating weapons, different types of war and conditions of care for the combat soldier  ...advanced medicine forever!

And together!!!!!
Objectives
Civilian to military…

• Explore the history** of military-civilian collaborations in the US (readiness).
  – Trauma: Systems, Centers and People
  – Some key innovations, treatments, and approaches translated from the civilian sector…
    …Minimal Acceptable Care at Intervals…
  – Lessons of 1:1 teaching, mentoring, and always
    …“just a phone call away”…
Time Periods

1775---1975

Post Viet Nam

1991-1996

2001-2003
• Expertise 1942–1975*. Civilian to military (consultants, reservists, and visionaries)
History: military medical readiness

- VN bidirectional flow ends  
  *(Barry plan and draft)*
- Kuwait & Somalia
  - Trunkey Arch Surg 1993; 2008*
  - GAO 92, 93 and 96 reports
  - Pilot program Houston*
  - DOD assigns (gs) to civilian TCs
    - Fellowships—incubation of leaders
  - Mil-Civ Trauma Training Centers
History: civilian trauma readiness

- **1970-99 ACS-COT** “resource documents” - definitions, standards, policy
  - Refinements: data-MTOS, trauma registries, QA-QI-PI, ATLS, state based designation, *leaders emerge, NTDB*
  - Systems literature, Regionalization

- **1989--? Urban Firearm War**
  - Different weapons
  - High death tolls
  - Conventional approaches poor
  - DOD Fellows “at the table”, in the classrooms & at centers.

- **2003** DOD “fellows” deploy.
- **2006 SVS** (consultants)
TRAUMA CENTER

Trauma Center

A specialized hospital facility distinguished by the immediate availability of specialized surgeons, physician specialists, anesthesiologists, nurses, and resuscitation and life support equipment on a 24-hour basis to care for severely injured patients or those at risk for severe injury.

ACS Resources for optimal care of the injured patient, 1999
Figure 2 Components of an inclusive trauma care system. The components in this model are based on the components described in several trauma care resources. (Adapted from Trauma Care Systems, a position paper from the Third National Injury Control Conference, “Setting the National Agenda for Injury Control in the 1990’s,” p. 388.)
2014...13 years of war, they created a continuous learning system designed from the civilian model, identified the gaps and recrafted to fit a battle space with remarkable results .... delivering critical care across the globe.

Military Medical Forces became THE EXPERTS ...
Combat causality back in US with family average 4 days
ICU Care

Introduction

Each battlefield ICU should have a dedicated intensive care physician, due to the severity and lethality of blast and high-velocity wounds, and the need for ongoing resuscitation of casualties requiring damage control.

Damage control is the initial control of hemorrhage and contamination followed by intraperitoneal packing and rapid closure, then resuscitation to normal physiology in the intensive care unit and subsequent definitive re-exploration. This places large logistic requirements on the ICU. This may include rewarming, large volume resuscitation, blood products, vasoactive drugs, and mechanical ventilation.
Damage Control:

• **1992-2002:** conditions, surgery, *philosophy*…
  – Control of bleeding and contamination
  – abbreviated & staged surgical procedures
  – ICU care, ACS, open abdomen,
  – Delayed definitive repair
  – Complex abdominal wall reconstruction

At the table, in the classrooms, at the *center!*
Hemostatic Efficacy of Two Advanced Dressings in an Aortic Hemorrhage Model in Swine.
Bijan S. Kheirabadi, PhD; Eric M. Acheson, MD; Rudolfo Deguzman, MS; Jill L. Sondeen, PhD; Kathy L. Ryan, PhD; Angel Delgado, PhD; Edward J. Dick Jr, DVM; John B. Holcomb, MD
JTRAUMA, Volume 59:1 25-35 July 2005
Battle/Site of Injury

1000m

10 km

Battalion Receiving Hospital
(50 tents/1 building)

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ICU

ORs

HMMV HMMV HMMV

Damage Control

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OR

ICU

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OR

ICU

CSH
Damage Control:

- **1992-2002**: conditions, surgery
  - Control of bleeding and contamination
  - abbreviated & staged surgical procedures
  - ICU care, ACS, open abdomen, reconstruction

- **2003-2015**: pathophysiology, system response
  - Resuscitation strategies and “pro-coagulants”
  - Validation on the battlefield
  - “System” wide applications
  - Civilian disaster application
Assignment of military surgeons “at the table”

Civilian-Military Partnerships....Trauma and SCC Fellowships
THREE Military Civilian Training Centers …created 1998

Interviews, visits and literature…

Personal commitments of the combined staffs and leaders…..OMG!!!!!

• Ongoing & shared sense of mission.
• Large numbers
  – > 10000 AD, R, NG
    • Physician, Nurse & AHP teams and individual trainees
• Positive impact (subjective)
• Best practices emerged
• Mutual benefit
• Cross pollination: clinical & scholastic
• DOD research potential
• MIL group (Trainers) are honed for READINESS response…
  – Deployed and Homeland
• Use: not well coordinated: who goes, interval with deployment
• No common curriculum
• Lack rigor of academic program
• No external assessment
• Best practices informally shared
• Convoluted command structure
• MIL Leaders change
• Uncommon TEAM to take call together
• Cycle of trainer deployment

Schwab JACS 2015
“Priceless”...
Imagine Military Training Trauma Centers

2500 Admissions & 175 GSW; Burn Center and Pediatric Hospital
The sacrifices made by the men and women of the U.S. Armed Forces deserve the profound gratitude of our Nation. For all those who served and gave so much, we thank you. Medical history has been made with the delivery of clinical care under conditions and in environments that few of us can imagine.

We must now honor the sacrifices of a generation by ensuring that the lessons learned over the longest period of armed conflict in the history of the United States are not lost.
In the past, military medical leaders—such as Walter Reed, Leonard Heaton, Robert Brown, and Basil Pruitt—freely sought help from their civilian counterparts, and the likes of Evarts Graham, Edward Churchill, Isidore Ravdin, Michael DeBakey, and Tom Shires regularly responded with helpful largess. However, this fruitful civilian–military, collegial medical relationship eventually eroded—not by design, but by simple neglect. This is a propitious moment for both parties to renew the spirit of the past and harvest their joint potential for meeting the widely varying demands that all know are a part of the game, and the think tank should be an ideal venue for restoring this relationship. The issues that merit “out of the box” thinking have been given just a light touch here. Each potential solution has substantive pros and cons that require in-depth and expeditious exploration for the immediate need, but the nature of the issues is such that they will also engender worthy clinical research projects. We are convinced that