"Trauma Care for a 21st Century Military"

Army Medicine…NCO Strong!

ATACCC Conference 2009: Army Vision for Trauma Care

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The Army Surgeon General and

Commanding General, US Army Medical Command

10 AUG 2009

Army Medicine Strategy Map

January 2009

Mission

- Promote, Sustain and Enhance Soldier Health
- Train, Develop and Equip a Medical Force that Supports Full Spectrum Operations
- Deliver Leading Edge Health Services to Our Warriors and Military Family to Optimize Outcomes

Vision

America's Premier Medical Team Saving Lives and Fostering Healthy and Resilient People
Army Medicine...Army Strong!

Strategic Themes

- Maximize Value in Health Services
- Provide Global Operational Forces
- Build the Team
- Balance Innovation with Standardization
- Optimize Communication and Knowledge Management

SUSTAIN PREPARE RESET TRANSFORM

ENDS — Patient/Customer/Stakeholder

- CS 1.0 Improved Healthy and Protected Families, Beneficiaries and Army Civilians
- CS 2.0 Optimized Care and Transition of Wounded, Ill, and Injured Warriors
- CS 3.0 Improved Healthy and Protected Warriors
- CS 4.0 Responsive Battlefield Medical Force
- CS 5.0 Improved Patient and Customer Satisfaction
- CS 6.0 Inspire Trust in Army Medicine

WAYS — Internal Process

In Support of The Army Family Covenant

- IP 7.0 Maximize Physical and Psychological Health Promotion and Prevention
- IP 8.0 Improve Quality, Outcome-Focused Care and Services
- IP 9.0 Improve Access and Continuity of Care
- IP 10.0 Optimize Medical Readiness
- IP 11.0 Improve Information Systems
- IP 12.0 Implement Best Practices
- IP 13.0 Build Relationships and Enhance Partnerships
- IP 14.0 Improve Internal and External Communication
- IP 15.0 Leverage Research, Development and Acquisition
- IP 16.0 Synchronize Army Medicine to Support Army Stationing & BRAC

MEANS — Learning and Growth

- LG 17.0 Improve Recruiting and Retention of AMEDD Personnel
- LG 18.0 Improve Training and Development
- LG 19.0 Promote and Foster a Culture of Innovation
- LG 20.0 Improve Knowledge Management

MEANS — Resource

- R 21.0 Optimize Resources and Value
- R 22.0 Optimize Lifecycle Management of Facilities and IT Infrastructure
- R 23.0 Maximize Human Capital

Feedback Adjusts Resourcing Decisions

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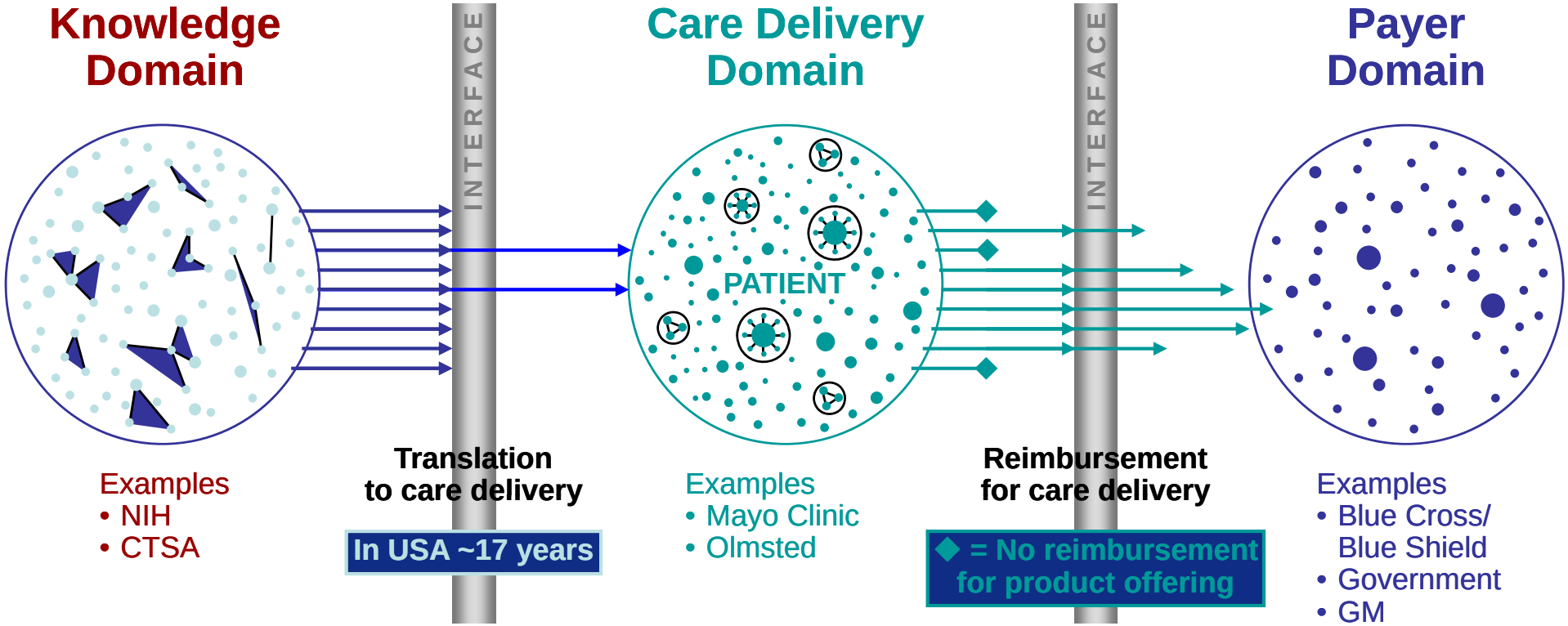
Three Domains

Systematic View of Health Care



Individualized Medicine

Science of Health Care Delivery

Create Value

Coordinated/ Integrated Care

Pay for Value

Insurance for All: FEHBP Model

Vision

A comprehensive evidence-based, outcomes-focused system for providing state-of-the-art trauma care for the combatant and an environment of trauma research for the clinician.

Trauma Care is Joint Care

- **Joint Center of Excellence for Battlefield Health and Trauma Research**
- **Leverages strengths of each Service**
- **Building research facility next to the Army's only Level 1 trauma center and ABA verified Burn Center**

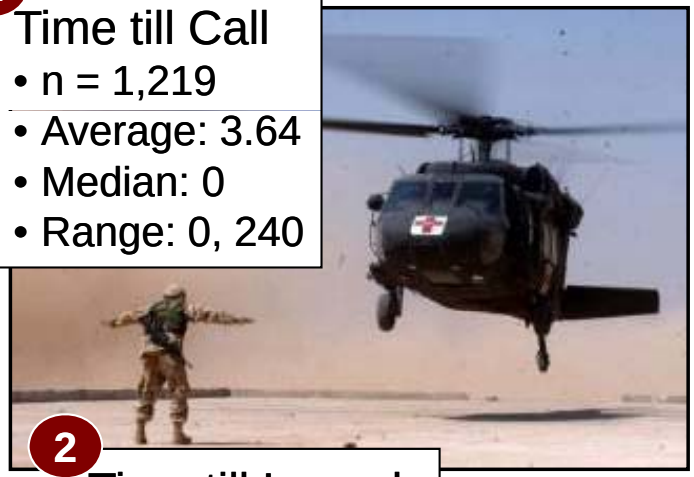
JTTS - Comprehensive Trauma Care

- **Spans the spectrum from preventive measures, wounding, treatment through to rehabilitation and return to duty**
- **Systematic and integrated**
- **Focus not just on writing papers but on functional products**
- **Knowledge-based as well as product-based**

Recent Products

- **Combat Life Saver – remove IV training to focus on hemostasis and hypothermia prevention**
- **Evacuation time research and mortality – Led to changed Air Evac posture in Afghanistan**
- **Combat Gauze**

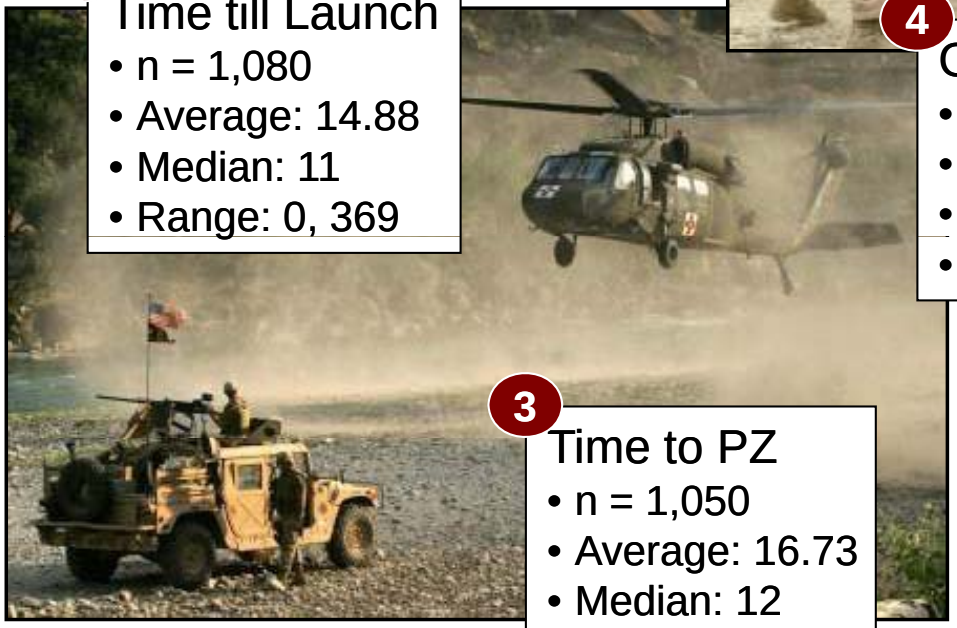
MEDEVAC Service Times



1 Time till Call
- n = 1,219
- Average: 3.64
- Median: 0
- Range: 0, 240

5 Time to MTF
- n = 1,026
- Average: 17.42
- Median: 11
- Range: 0, 147

2 Time till Launch
- n = 1,080
- Average: 14.88
- Median: 11
- Range: 0, 369



4 Ground Time
- n = 1,152
- Average: 7.38
- Median: 4
- Range: 0, 106

3 Time to PZ
- n = 1,050
- Average: 16.73
- Median: 12
- Range: 0, 165

★ Overall Service
- n = 1,071
- Average: 57.3
- Median: 43
- Range: 4, 247

NOTE: All times are shown in minutes

Post 9/11 Fielded Products Hemostasis

HemCon Bandage

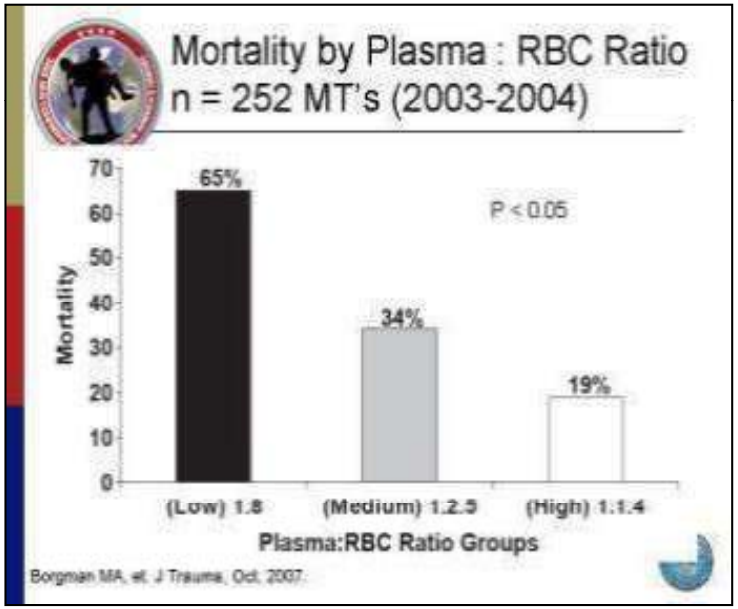
QuikClot

New, Combat Gauze

Woundstat

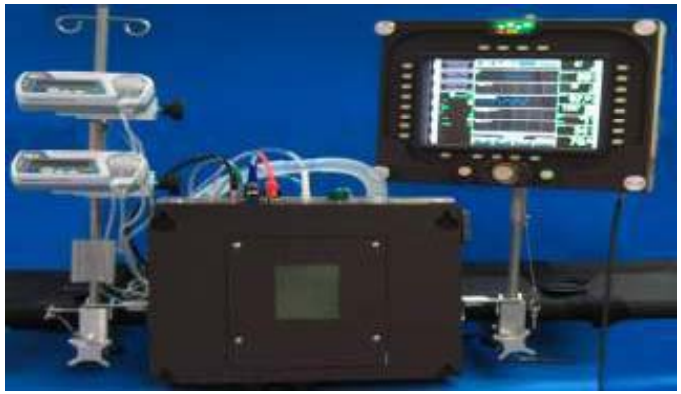
Combat Application Tourniquet (CAT)

Novoseven
Injectable
Clotting Agent



Future Products

- Freeze dried plasma
- New Methods to correct hemostasis
- Wireless Vital Signs Monitors
- Miniature wearable medical sensors
- Computer-assisted burn resuscitation
- Objective diagnostics for TBI (e.g. serum biomarkers)
- Neuroprotectant drugs for TBI



Neurotrauma

- **Diagnostics:**
  - **BANDITS**
  - **Non-invasive neurodiagnostics and monitoring**
- **Therapeutics:**
  - **NNZ 2566**

Regenerative Medicine

- **AFIRM**
- **Not just preserving function but restoring lost function**
- **Driven by massive combat wounds with complex tissue loss**
- **Restoring amputated body parts and organs**

Regenerative Medicine

Five Areas of Emphasis:

Cranio-Facial Reconstruction

Healing Without Scarring

Limb and Digit Salvage and Reconstruction

Compartment Syndrome

Burn Repair

Ethical Research

- **Not driven by monetary considerations**
- **Post licensing surveillance**
- **Office of Research Protections**
- **Strict Animal and Human subject use guidelines**
- **Example: Woundstat**

WoundStat (WS)

- Deployed to the field
- Researcher concern led to further testing
- Problem noted before used in combat
- Product pulled

(a) Kerlix (b) Combat Gauze (c) WoundStat

Smectite (Aluminum Phyllosilicate)

Closing Comments

- ***Thank you*:**
  - **for all you do for the Warrior and the defense of the Nation—you provide invaluable support to the Warrior…**
  - **for your leadership in using data-driven, outcomes-focused methods to improve care—maintain this resolve…**
  - **for your teamwork and collaborative, scholarly and "products-focused' work—you get things done!**

Backups

Engineered Skin: Medical Needs

- Survival
- Earliest closure
- Least donor skin
- Minimum scar
  - Acute burns
  - Burn scars
  - Congenital lesions
  - Chronic wounds