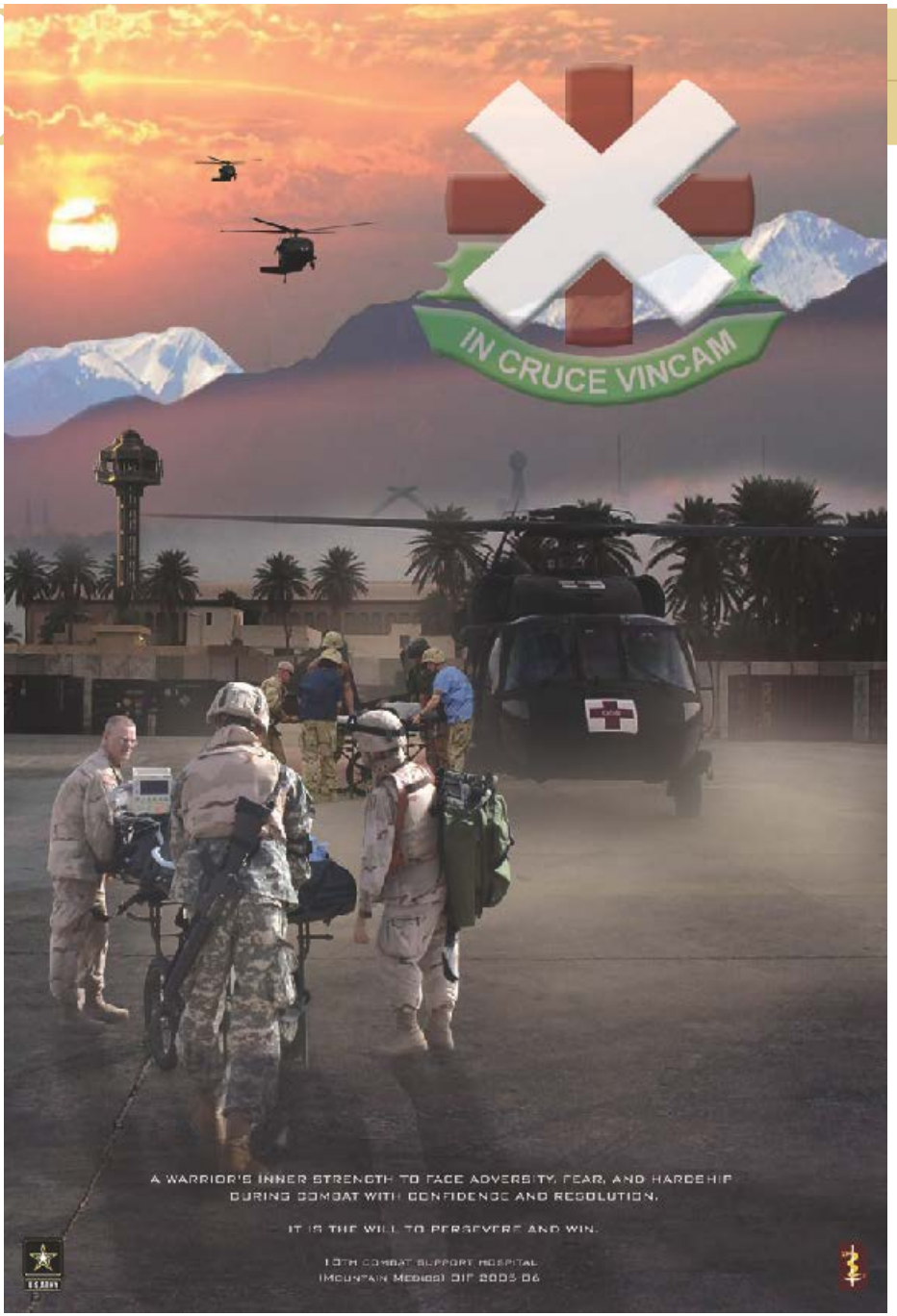
Lessons Learned in Baghdad



United
Health
Services
Trauma
Conference

17 April
2010

LTC
John T Groves

The Worthiest of Missions

Objectives

1. Describe lessons learned on the battlefield that can be translated and used in a civilian trauma center
2. Outline key concepts in team training to manage multiple patients with traumatic injuries
3. Identify principles for successful training of emergency personnel in a Mas Casualty event

Memorable Quotes

"It will be the best and worst times of your life"

CPT Tara Hayden
31st Combat support Hospital

Battlefield Nursing Challenges

- What is a Combat Support Hospital?
- What is the ER Staff made up of?
- Where is Ibn Sina?
- How did we prepare?

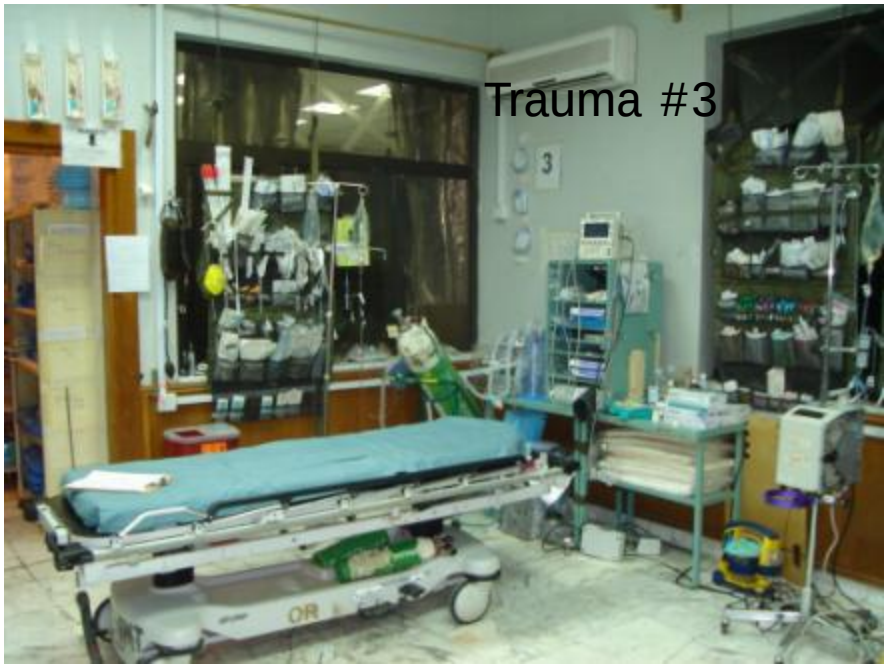
Combat Support Hospital

- The mission of the 10th Combat Support Hospital (CSH)
- Not the front line
- Most patients via MEDEVAC Helicopter
- Personnel

Combat Support Hospital

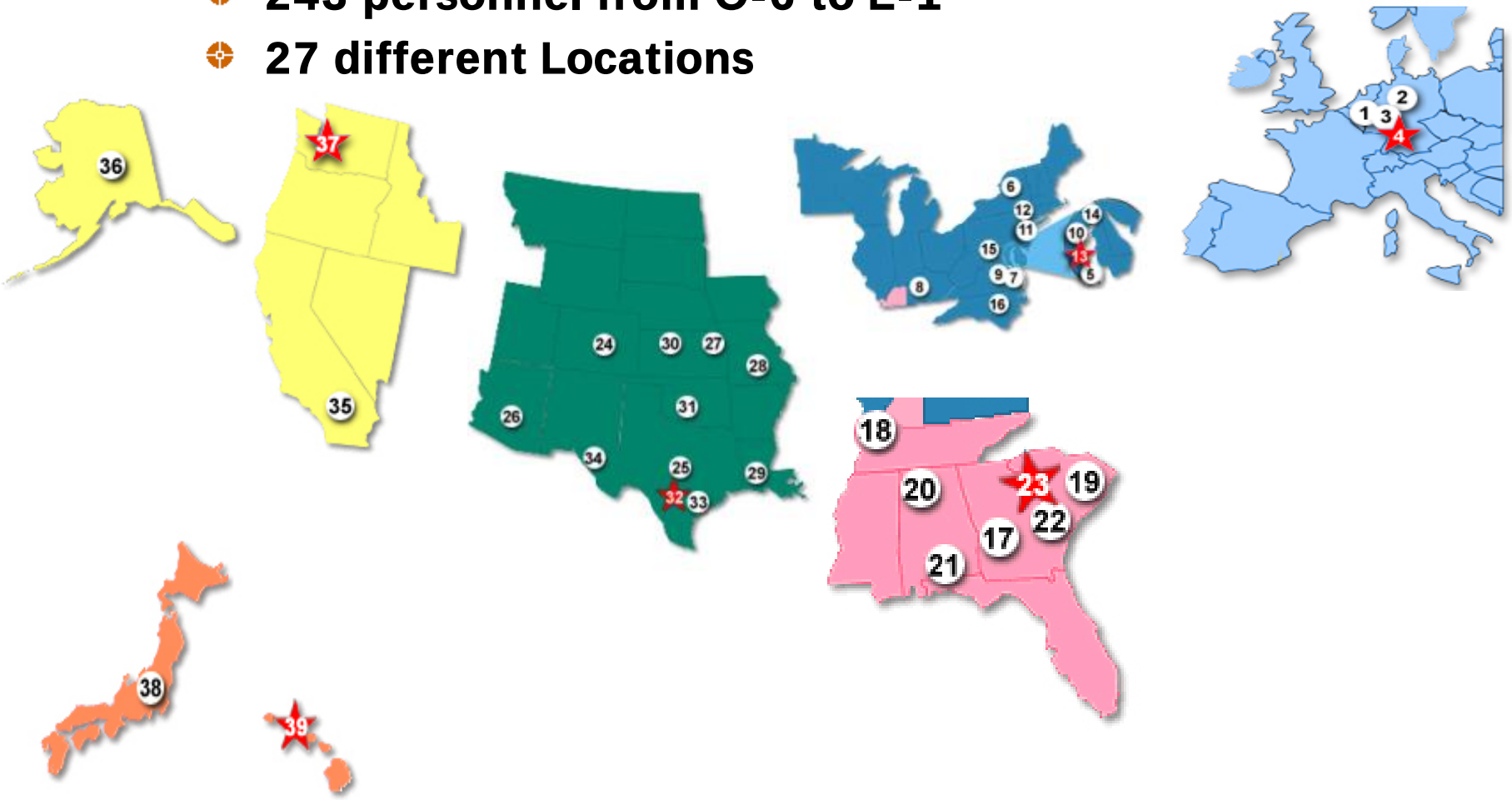
Ibn Sina

Trauma Rooms



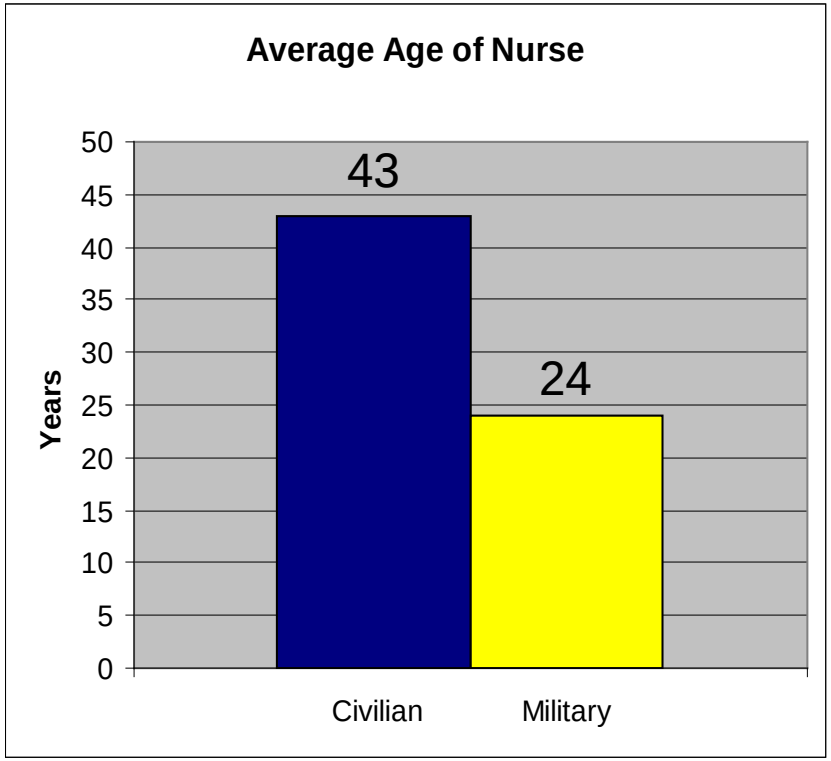
BUILDING A TEAM

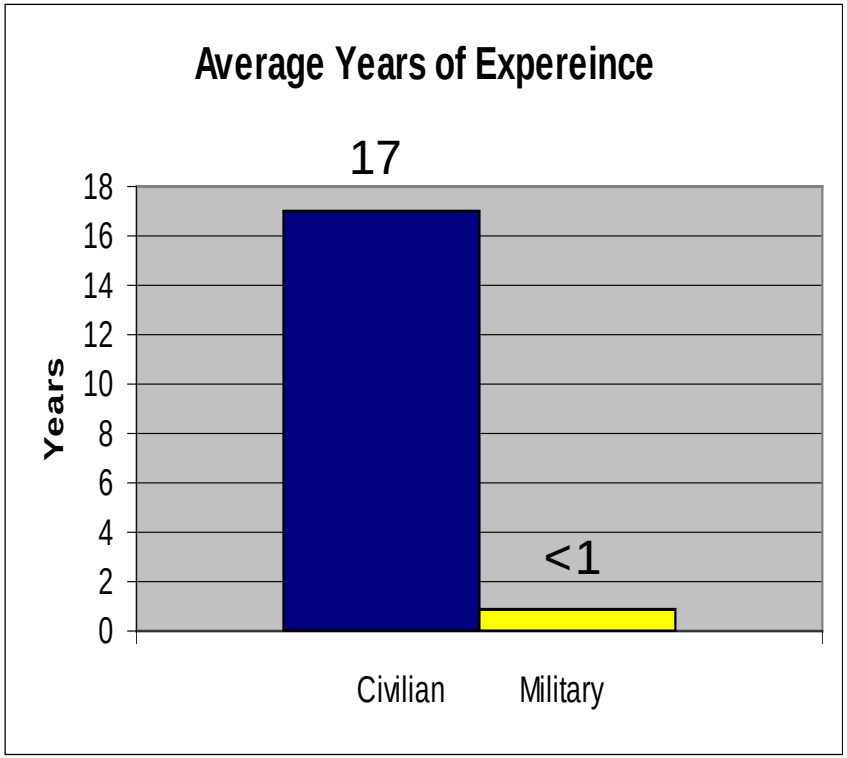
- 243 personnel from O-6 to E-1
- 27 different Locations



Who are these guys?

ER Staffing: Civilian vs Military





- ATTC staff
- 10th CSH EMT staff

Call to Arms

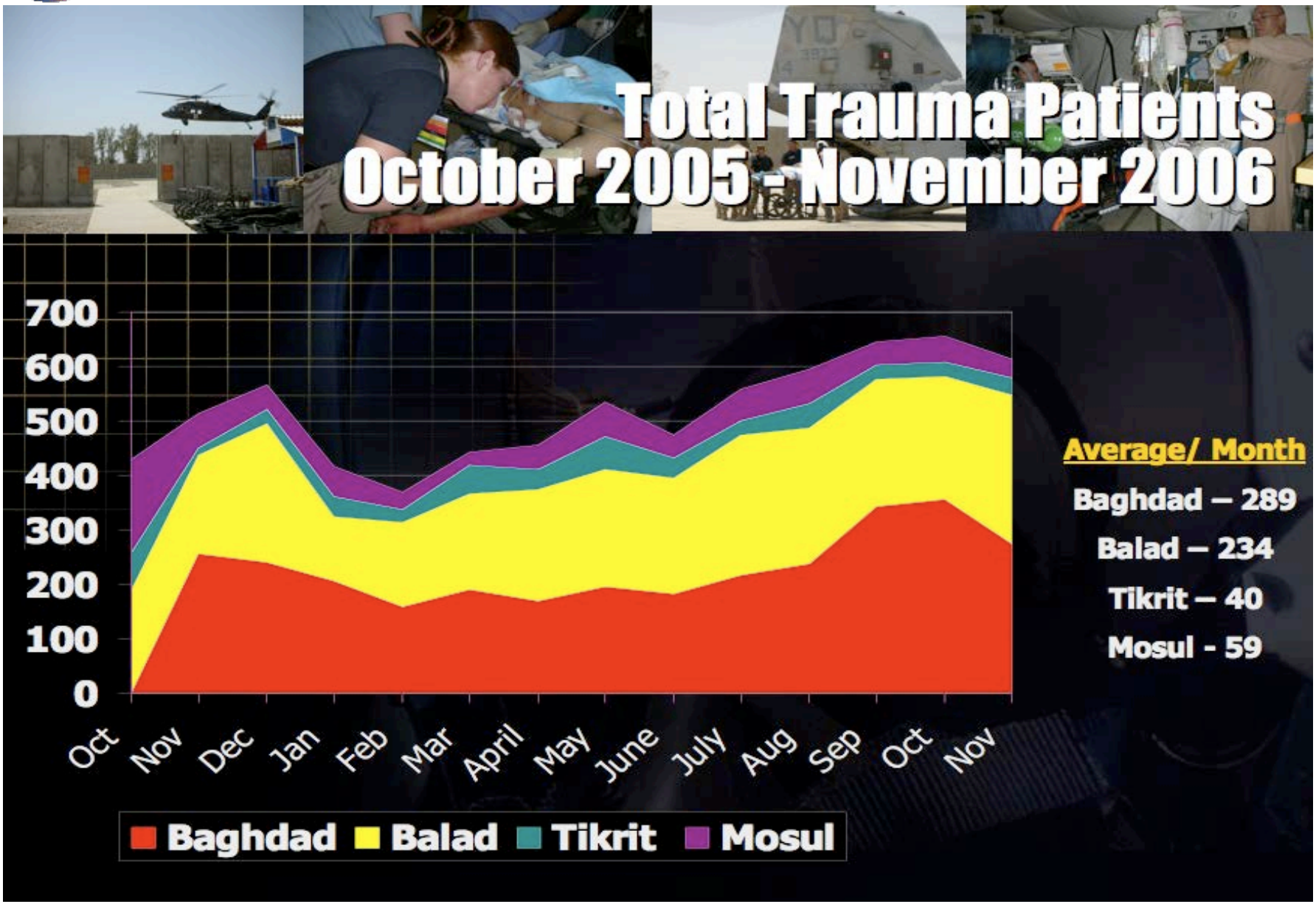
- “Other armies have brave people, other armies have smart people, the difference between us and other armies is the way we train”

Surgeon General

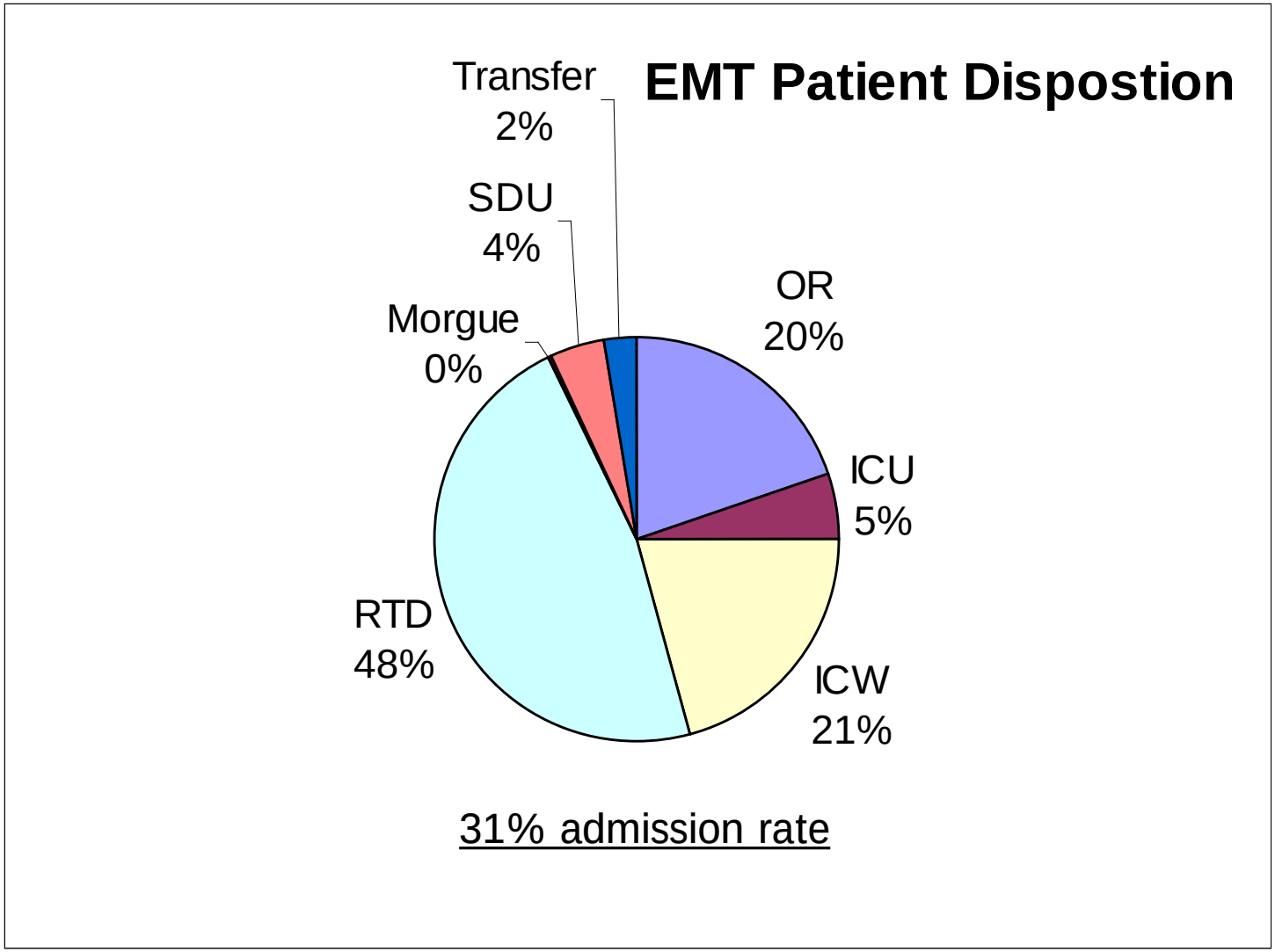
Clinical Challenges

- Unprecedented Volume and acuity
- Unique Physiology
- Poly Trauma Challenges
- Inexperienced staff

High Volume Trauma

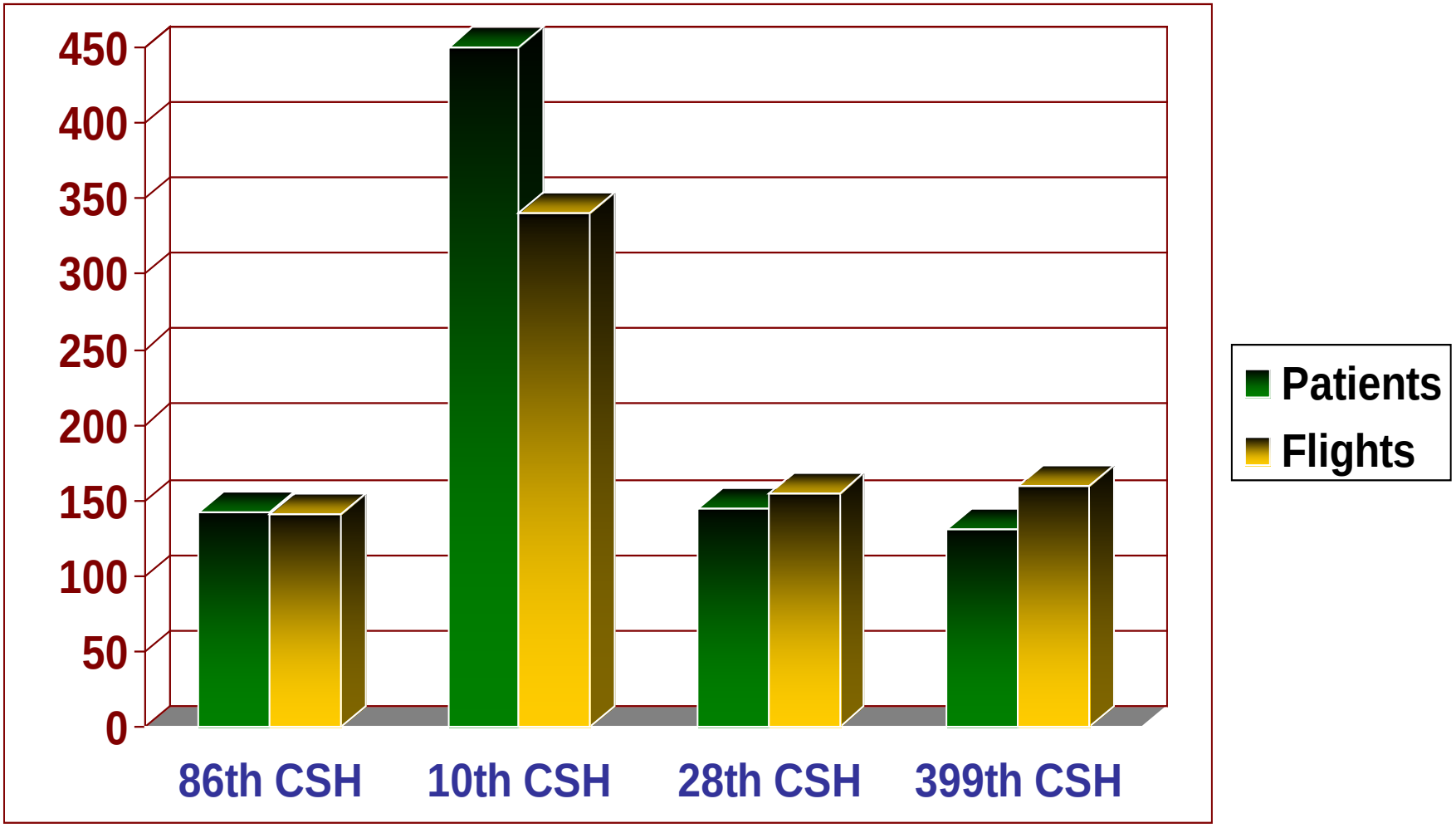


CSH Acuity



31% admission rate

MEDEVAC Transport Data

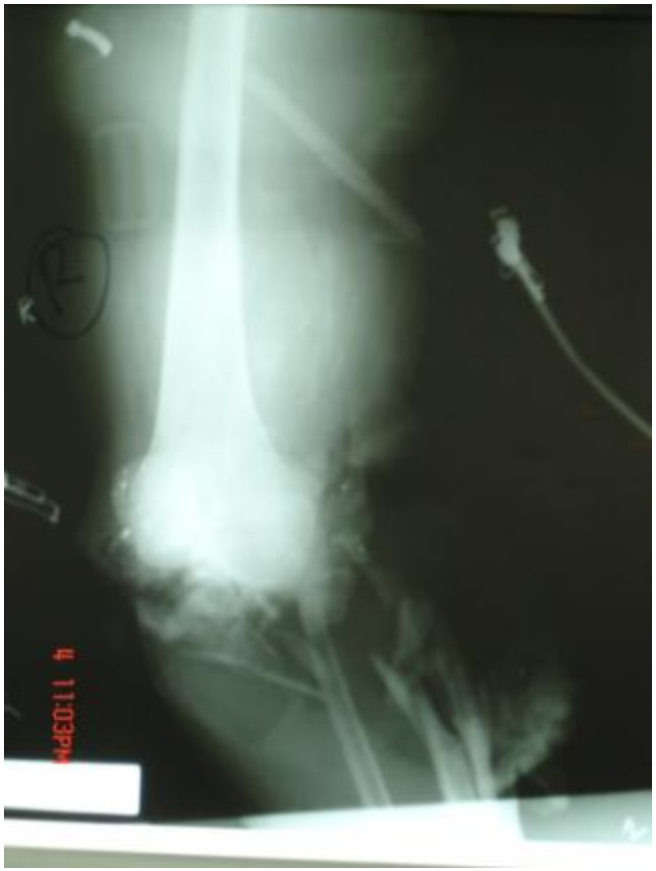


How sick are these patients?

Clinical Challenges

- Poly Trauma
  - Pre-hospital care
  - Coagulopathy (Factor VII, Mass Transfusion, plasma)
  - Hypotensive resuscitation
- Neuro Trauma
- Pediatric Trauma
- Burns
- Evacuation

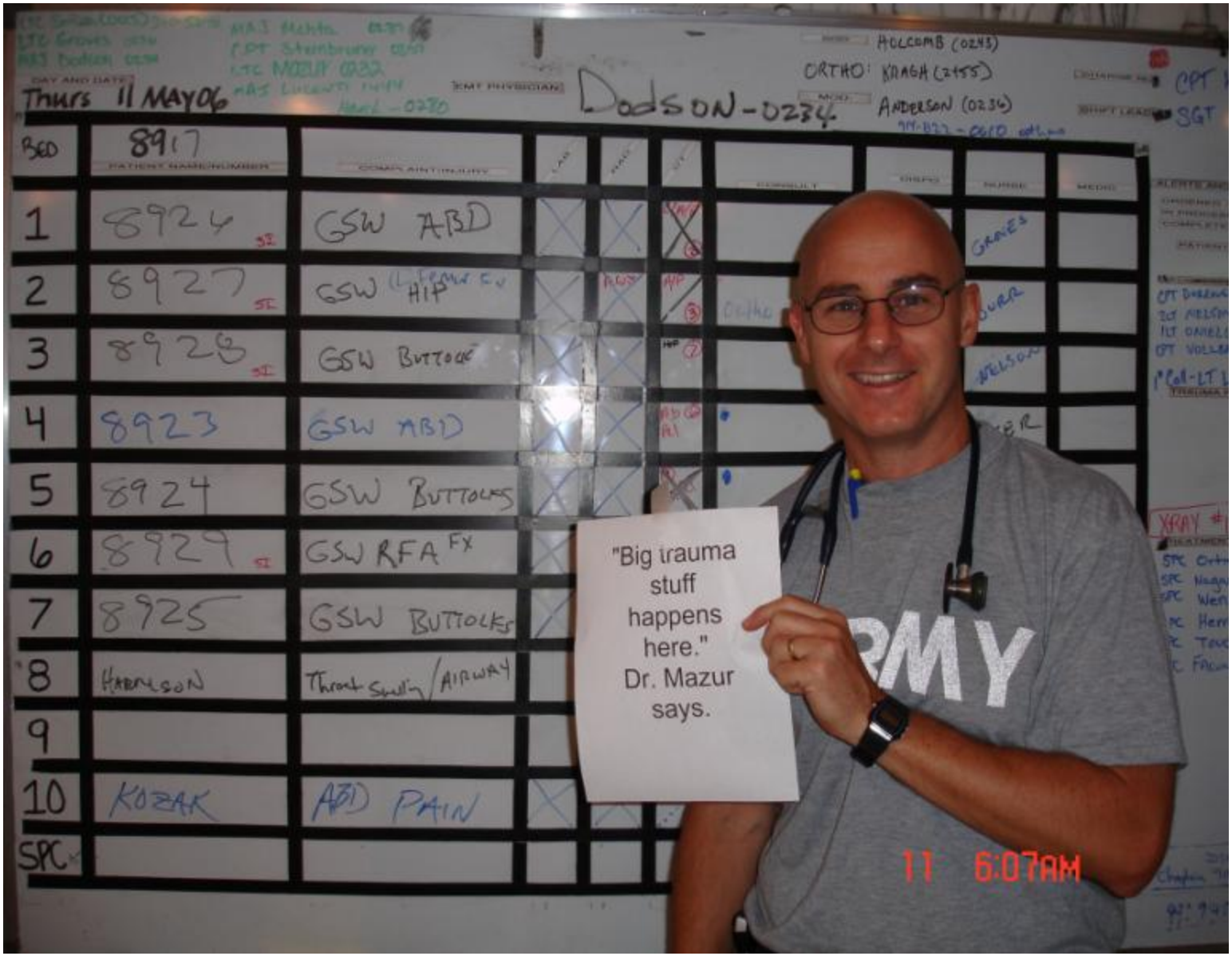
IED's



Wounding Patterns

- Protective Gear – extremity
- Types of ammunitions - IEDs
- Point of impact - buttocks
- Vehicle position – retroperitoneal injuries

Memorable Quotes



Historical KIA rates

- WWII – 22.8%
- Vietnam – 16%
- OIF/OEF – 8.8%

- 94%-97% survival rate at IBN Sina

Training assessment

- Pre-deployment Field Training Exercises Field Training Exercises (FTX's) helped ID some key leaders
- Biography sheet
- Initial counseling "oh my God….."
- Raise your hand if….

Education classes

- ABLS and TNCC classes taught by experts.
- Case Studies taught by us
- ER needed more train up – Skill stations

Assessing personnel

- The “Comfortable Test”
- Early strengths and later weaknesses:
- Invest in your best and brightest (they may be the most inexperienced)
- Set expectations early

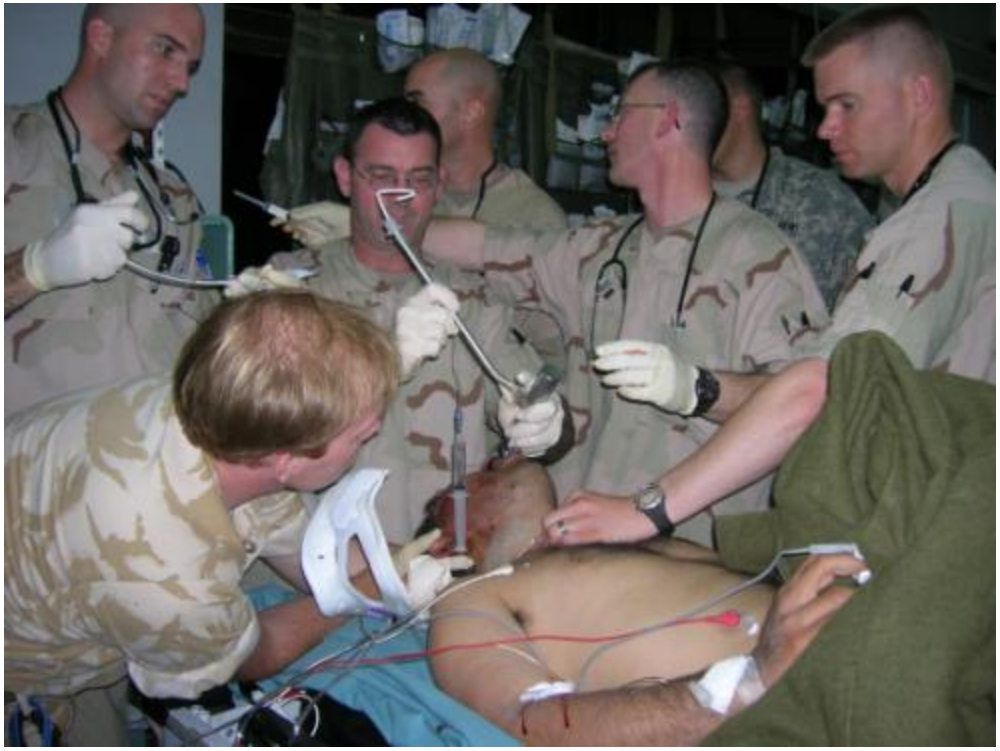
Team Model Development

- Special Operation Forces community
- Army Trauma Training Center - Miami/Forward Surgical Team Lessons learned
- Alternate role identification for resuscitation Models
- New Technology (i.e ISTAT/Ultra Sound/Access issues)

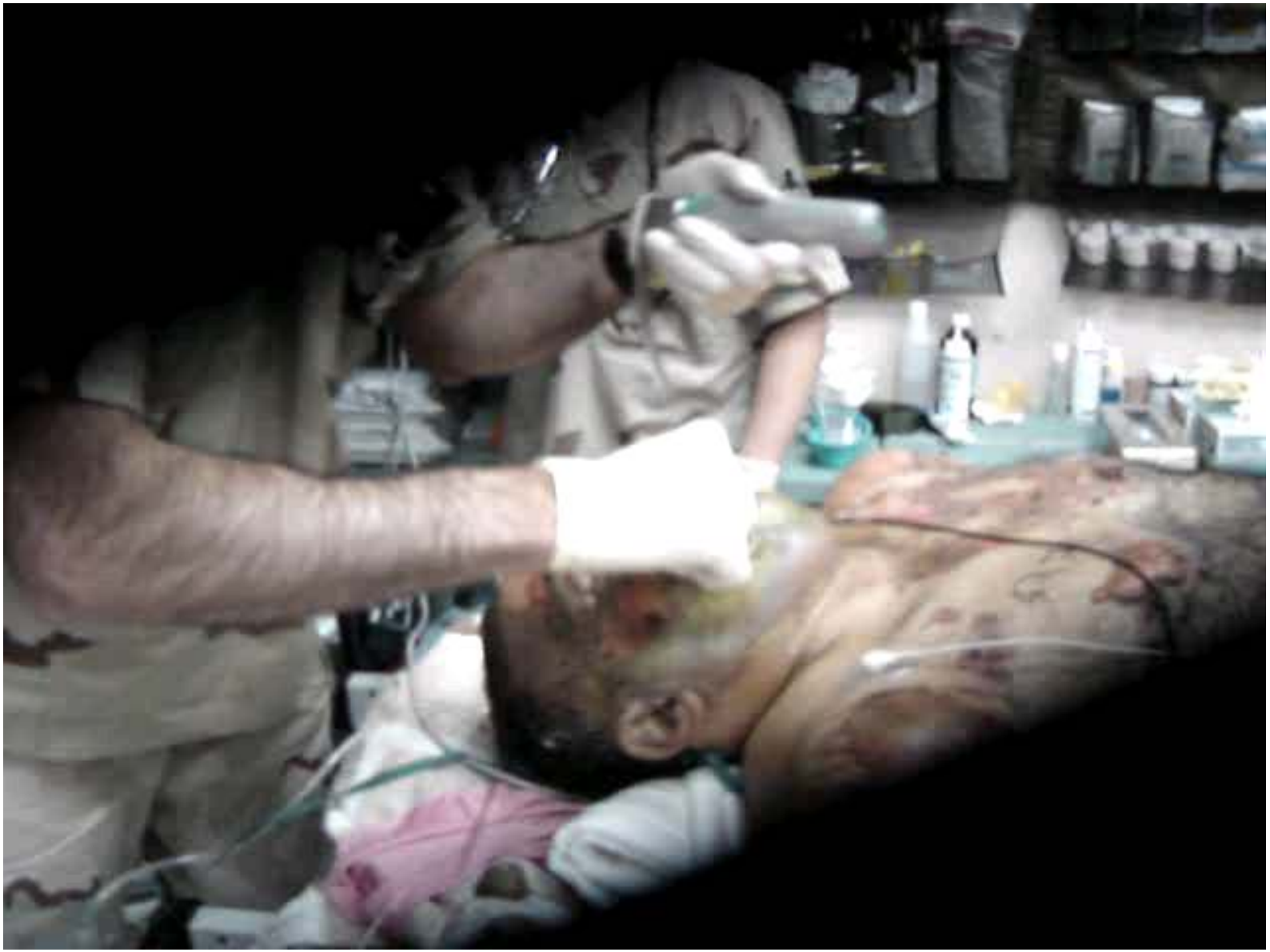
The birth of "Egoless Medicine"

- "How do you do what you do here?"
- Everyone is expected to contribute
- Physician buy in
- Senior clinical nursing leadership
- Based on mutual respect

Physician buy-in



Physician Leadership



The "Backbone" of the Army

Senior Nursing leadership

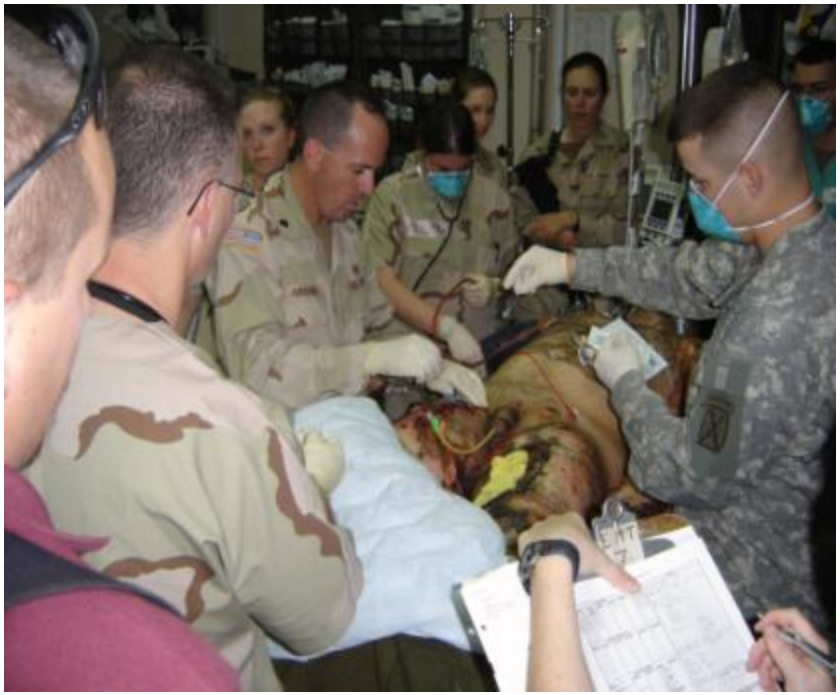
- “Tell me what you see”
- “Who is the sickest patient in the room?”

"Friendly confines"

- No "Saving Private Ryan" moments allowed in medicine
- It's not "our" Emergency...

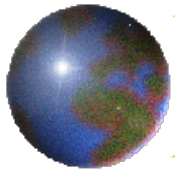
Provide "Top Cover"

- Minimizing distracters permits faster time to proficiency
- People want to play on a winning team
- Gulliani Lessons
- Fair and consistent
- Keep teams together



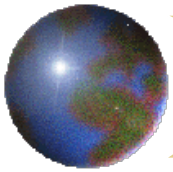
Leadership Challenges

- What core skills did most have?
- What core skills did they need?
- Leadership Books (Jim Collins)
- Egoless Medicine filled in the gaps quick



Leadership Lessons

- Arrogance Vs Ignorance test
- Behavioral and clinical
- The team will never suffer for the actions of one
- Keep it in the ‘fairway’



Fail safe procedures

- Prefilled syringes
- Standard blood replacement
- Pre-set Ventilators
- Bellmont infuser
- EZ IO
- Central line access
- End Points of Resuscitation parameters
- Charts thrown in the trash

What did you learn today?

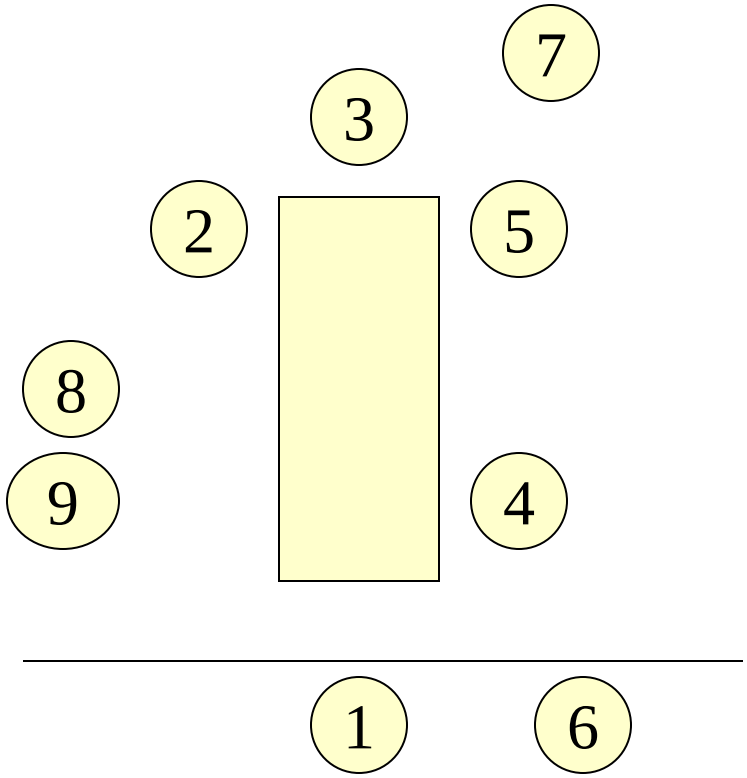
"I learned today that when you start CPR not everyone dies"

2LT Riane Nelson

Valentines Day

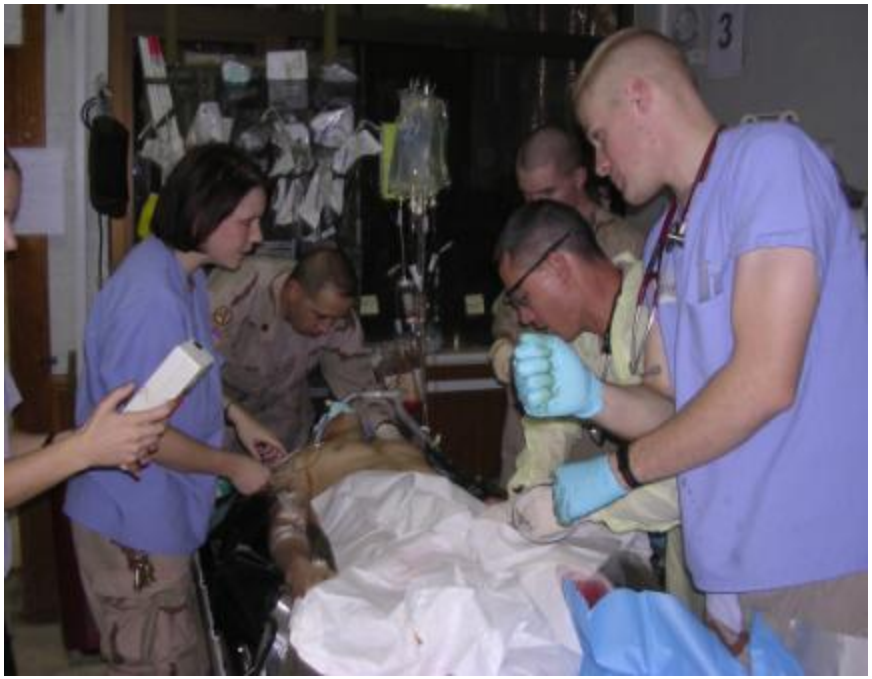
Standard Trauma Team

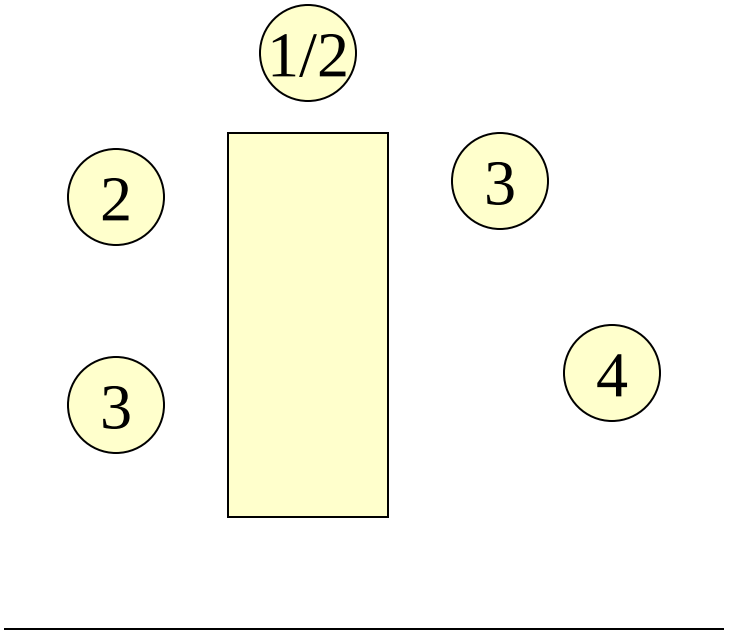
1. Command Physician
2. Primary Resuscitator
3. Anesthetist
4. Assistant Surgeon
5. Trauma Nurse
6. Recorder
7. Respiratory Technician
8. X-Ray Technician
9. Lab Technician



10th CSH - Trauma Team

1. Command Physician
2. Trauma Nurse
3. Medic
4. X-ray Technician



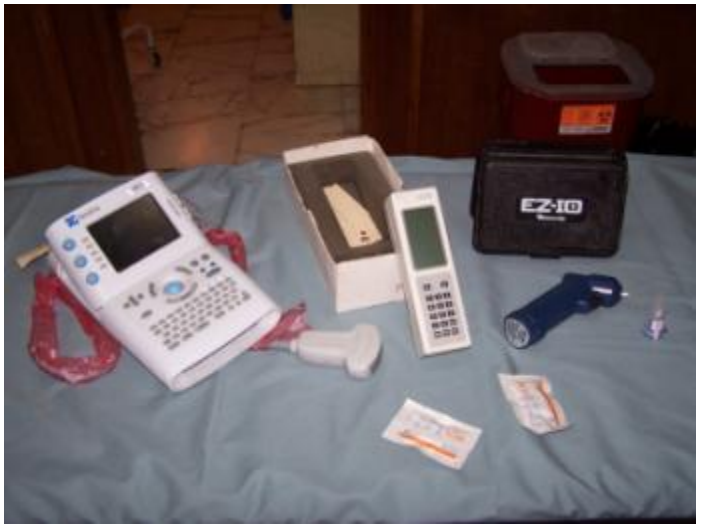


Nurse/Medic role expectations

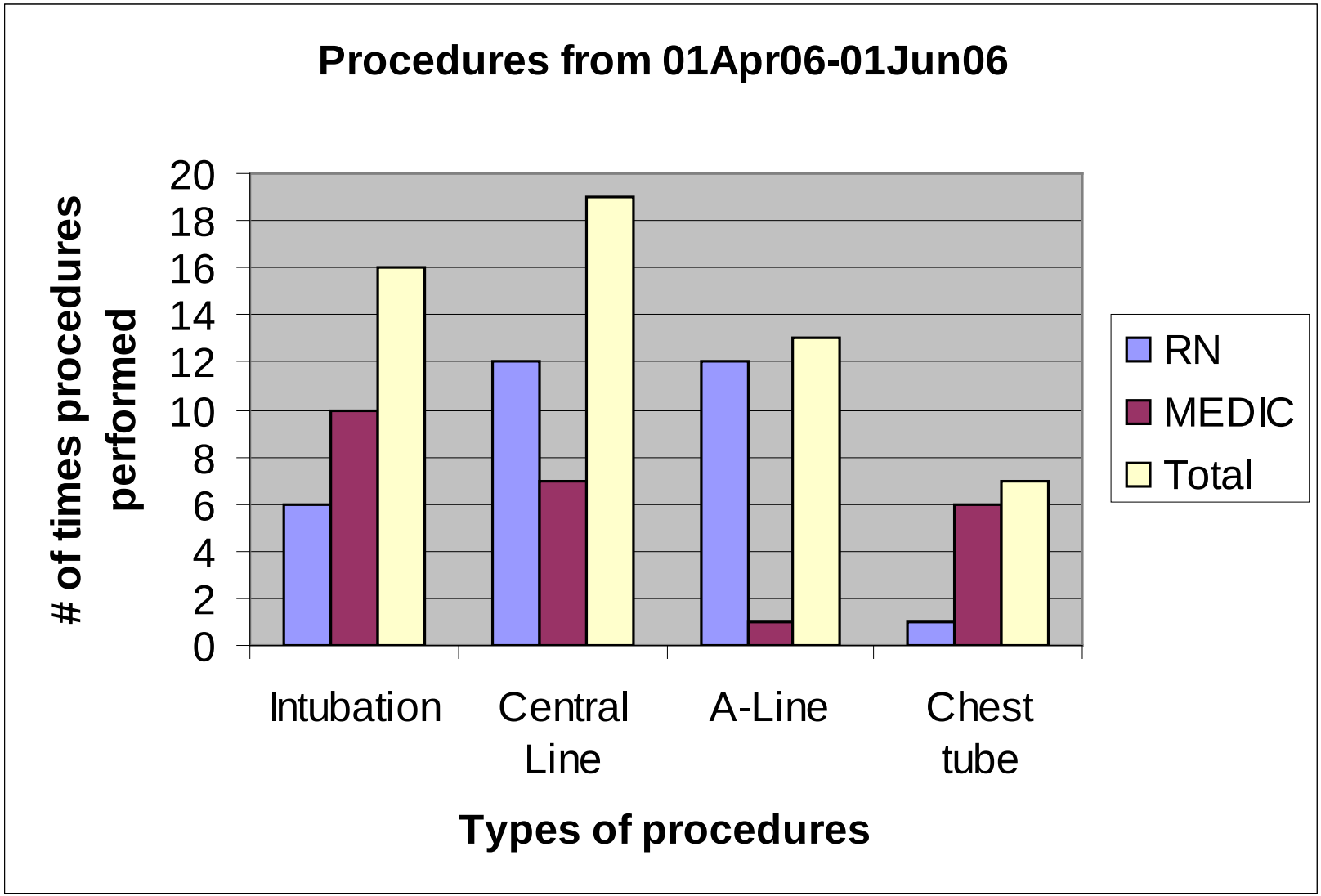
- Quick exposure, VS, peripheral access, Femoral arterial blood sample, Ventilator management
- Rapid infuser, Airway assistance, Tourniquets Rapid sequence intubation medications
- Central access, coordination for diagnostics/OR
- Rapid blood release and administration with Factor VII
- Sedation and paralytic management

Advanced Skill Sets

- Vascular Access (IO and Central)
- Fast Exams
- Chest Tube placement
- Airway management
- Rapid Blood infusion
- Arterial lines
- End points of resuscitation BE, INR, HGB
- Critical Care skills (Ventilators, RSI)



60 Days in the CSH



12 Months is a Sentence

- Watershed moments
- Continuous education opportunities
- Changing resuscitative models
- Feb 2007 JEN, 1LT Matt Bowe

Watershed moments

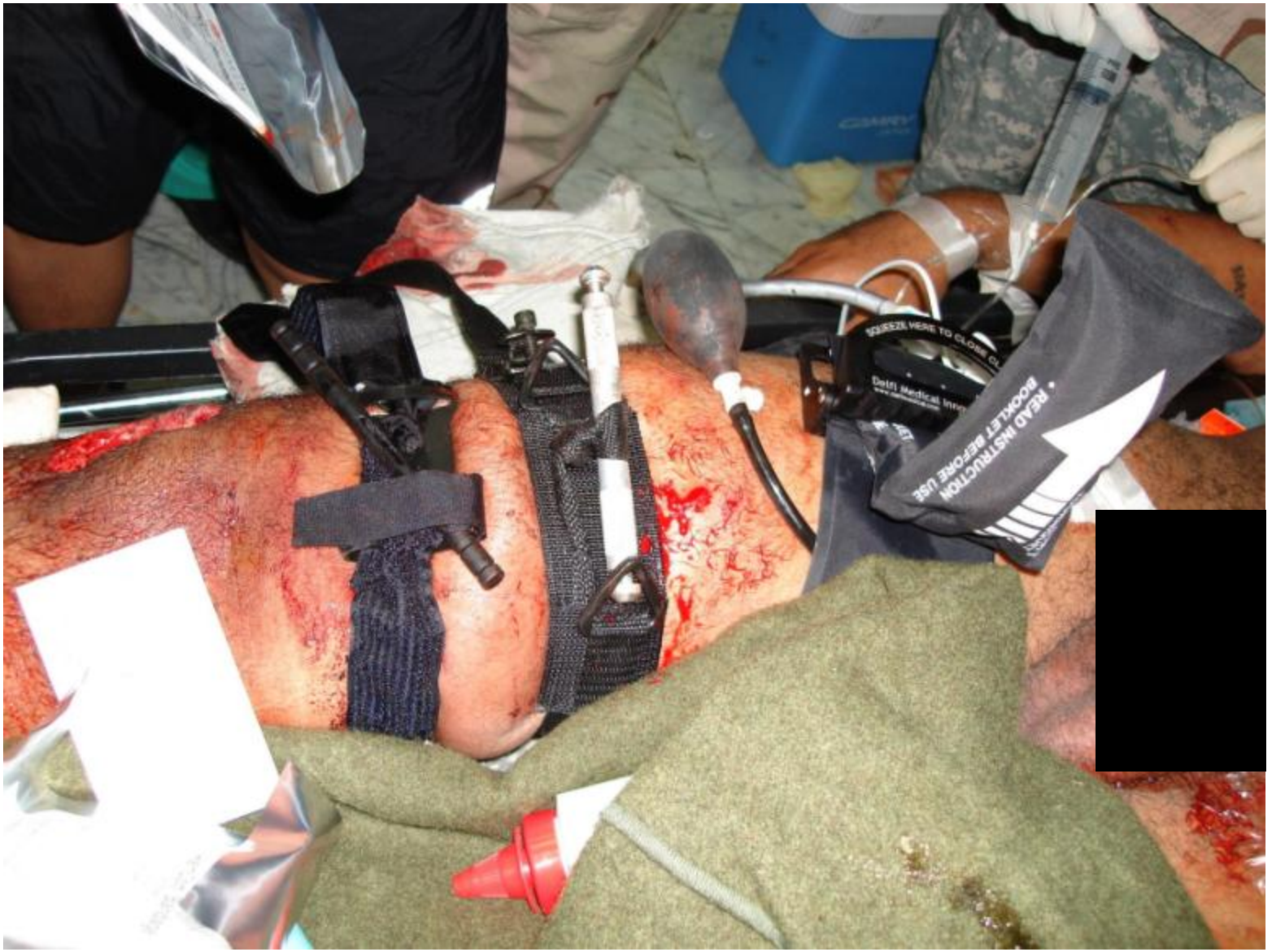
- Halloween
- Christmas Day
- Valentines Day
- Memorial Day

Changing resuscitative models

- Weekly After action reviews
- Morbidity and Mortality reviews
- “That works lets do more of that”

Col Don Jenkins

Tourniquets save lives



Personal Challenges

- Like watching your child learn to walk
- When to let them fly
- They don’t know what they don’t know
- Minimize distracters – Hard won battles
- “Hey someone put an “N” on your uniform

Memorable Quotes

"We are saving a lot of lives ma'am"

"This is not normal"

LTC John Groves

Mass Cal

- 4 Jan 06
- 31 Casualties
- Treated in 2 hour
- Disposition
  - 5 to OR
  - 18 to ICU/ICW
  - 2 Urgent Evac
  - 3 Fatality
  - 3 RTD

Mass Cal injuries

- Fragments Bilat Upper ext
- Frags to legs and arms
- Left hand amputation
- CHI
- Left Tension, R Femur Fx
- Abd hemorrhage
- R Pneumo, L elbow fx
- Left leg amputation, R tension
- Right Tib/Fib Fx
- GSW to back
- Lower Ext fragments
- Left Tension, left lower ext fragments
- LOC, Tib.Fib Fx
- R tension, fragments to hip
- L Scapular Fx
- Knife to right leg
- Right leg fragments
- Blunt abd injury unstable
- Subdural hematoma
- Fragments to head and left elbow

Mascal Triage

Case Study

Pulse less double amputee

November 29 2005

Presentation

- 24 y/o AD soldier presents to EMT pulse less with RUE and LLE amputations
- CPR in progress, medic states “we just lost a pulse as we landed”
- Tourniquets applied in the field appeared to be effective S/P IED

Initial Assessment

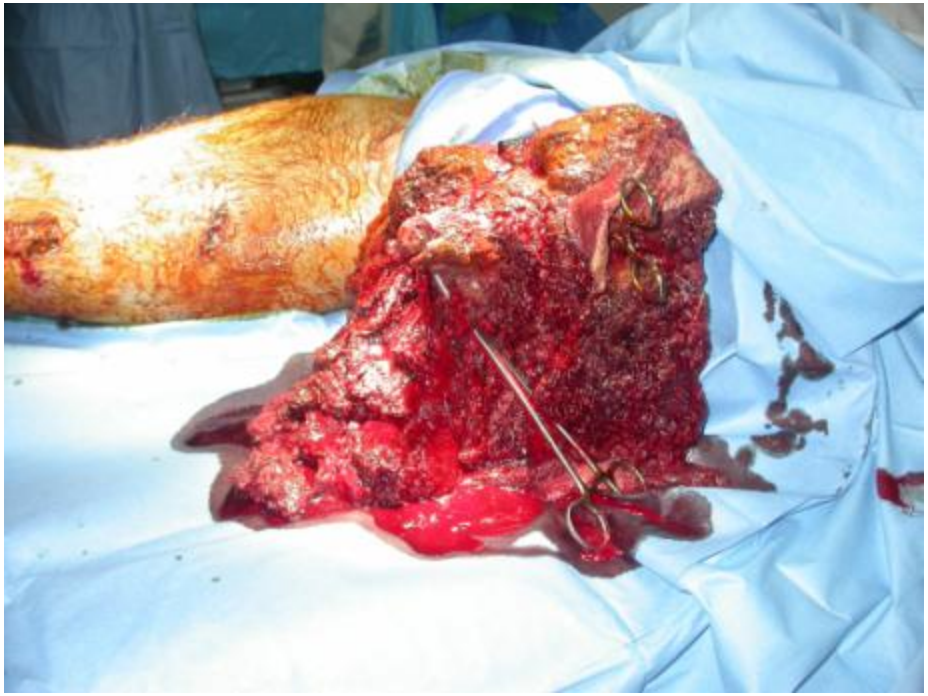
- Physical Exam
  - HEENT: Skin pale and cool
  - Neck: flat neck veins
  - CV: pulse less
  - Lungs: after intubation, bilateral breath sounds
  - Abdomen: soft, non-tender, non-distended FAST Negative
  - Ext: extensive soft tissue damage to both amputations and obvious deformity to RLE
  - Neuro: Unresponsive GCS 3

Initial Intervention

- Medic
  - Assists with Emergency Intubation
  - Femoral artery stick for ISTAT
  - After initial 2 units of blood
  - Requiring clamping of spurting blood vessels
  - Foley
- RN
  - Right Femoral Artery cannulated during CPR
  - 6 units of PRBC’s given via Belmont rapid infuser
  - Continue to monitor ABC’s

Diagnostic Results

- ABG:
  - Ph 6.87
  - BE -26
  - Hbg 7.5
  - Hct 22



Hospital Course

- Patient received 8 units of PRBC's and 1 Liter of crystalloid
- Factor VII
- Rapid Sequence Intubation meds given
- After intubation and first 2 units of blood patients pulses returned
- 26 min later taken to OR for completion of amputations ORIF of left humerous, radius and ulna and Right leg faciotomy, right ankle fracture, fractured spleen and pelvic fracture with large retroperitoneal hematoma

Follow up

- Report from field patient thrown 80 meters from explosion that killed three other occupants of the vehicle
- Remained critically ill for several days with coagulopathic issues.
- Transferred to Germany and Walter Reed where on the 18 of Feb was released on pass with his wife.

Scene of IED

CPT (ret) Ryan Kuhles and family

Cpt (ret) Ryan Kuhles

Mascal Lessons learned

- Don’t change key people
- Train like you fight
- Practice on every patient like it’s a Mascal
- 12 Mascals

Battlefield Lessons Learned

- High volume and acuity drive this model
- Young soldiers are up to the challenge
- Make tough personnel decisions early
- Share this training philosophy

Battlefield Lessons Learned

- Must have key leader buy in
- Minimizing distracters permits faster time to proficiency
- Very high survival rates can be achieved with inexperienced staff
- Recruiting challenge - bring on the kids
- Invest in your best and brightest

This Generations "Best"

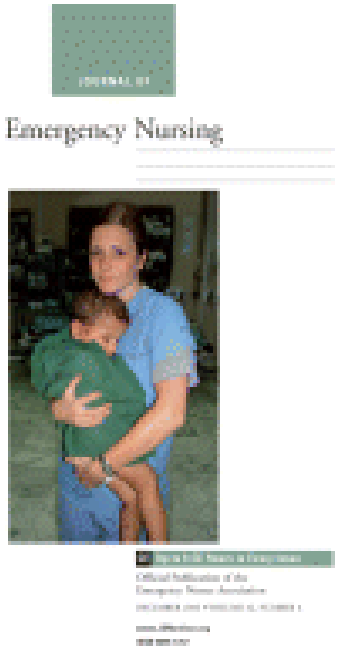
- 94% survival rate
- Over 7,000 Patients treated
- 12 Mascal – 200 patients
- 109 successful flights
- PI of MEDEVAC
- 7 CEN's
- 8 articles published

Memorable Quotes

"this is the best job in the world...not because of all the cool trauma we get to do...but because of who we are taking care of..."

1Lt Matt Bowe

Questions



- AEJN July-Sept 2007
- CNN Combat Hospital
- JEN Feb 2007
- National Geographic Dec 2006
- www.caringbridge.org (Ryankules)

john.groves@us.army.mil

What it's all about