Continuous (En Route) Care

Current Route from Injury to Definitive Care

BAS
Level 1

CASEVAC
1 Hour

Forward Surgical teams
Level 2

TACTICAL EVAC
1-24 Hours

Combat Support Hospital, EMEDS, Fleet Hospital
Level 3

STRATEGIC EVAC
24-72 Hours

Definitive Care
Level 4

Surgical Capability

Components of care

1. We learned well- are we static and (perhaps complacent) ?
2. We must not plan based upon the past
3. Lightweight/modular/mobile/core capabilities and Life Saving Interventions
4. I will try to make my case for the opportunities at hand

Myths and stretches

- There is a Golden _____
  (Hour, time span, opportunity, minute, day)
- The Myth of the Golden Hour is leveraging an enormous cost on the Medical Corps
- FACT- previous data has affirmed that 87% of our casualties die before reaching a Surgically capable facility

- We are smart enough to sort this out– but must not shrink from the opportunity to break a few paradigms and assumptions

Let me explain- current theater

CASEVAC
1 Hour

TACTICAL EVAC

BAS
Level 1

Point of Injury

?

En route Care/Transport

Is this the Golden Hour

LSI surgery

LSI Airway

LSI Blood component(s)

LSI Tension PTX

LSI tourniquets

LSI Hemorrhage control

LSI LTOWB

advanced medical/surgical care

Combat Support Hospital, EMEDS, Fleet Hospital
Level 3

En route Care/Transport

Definitive Care
Level 4

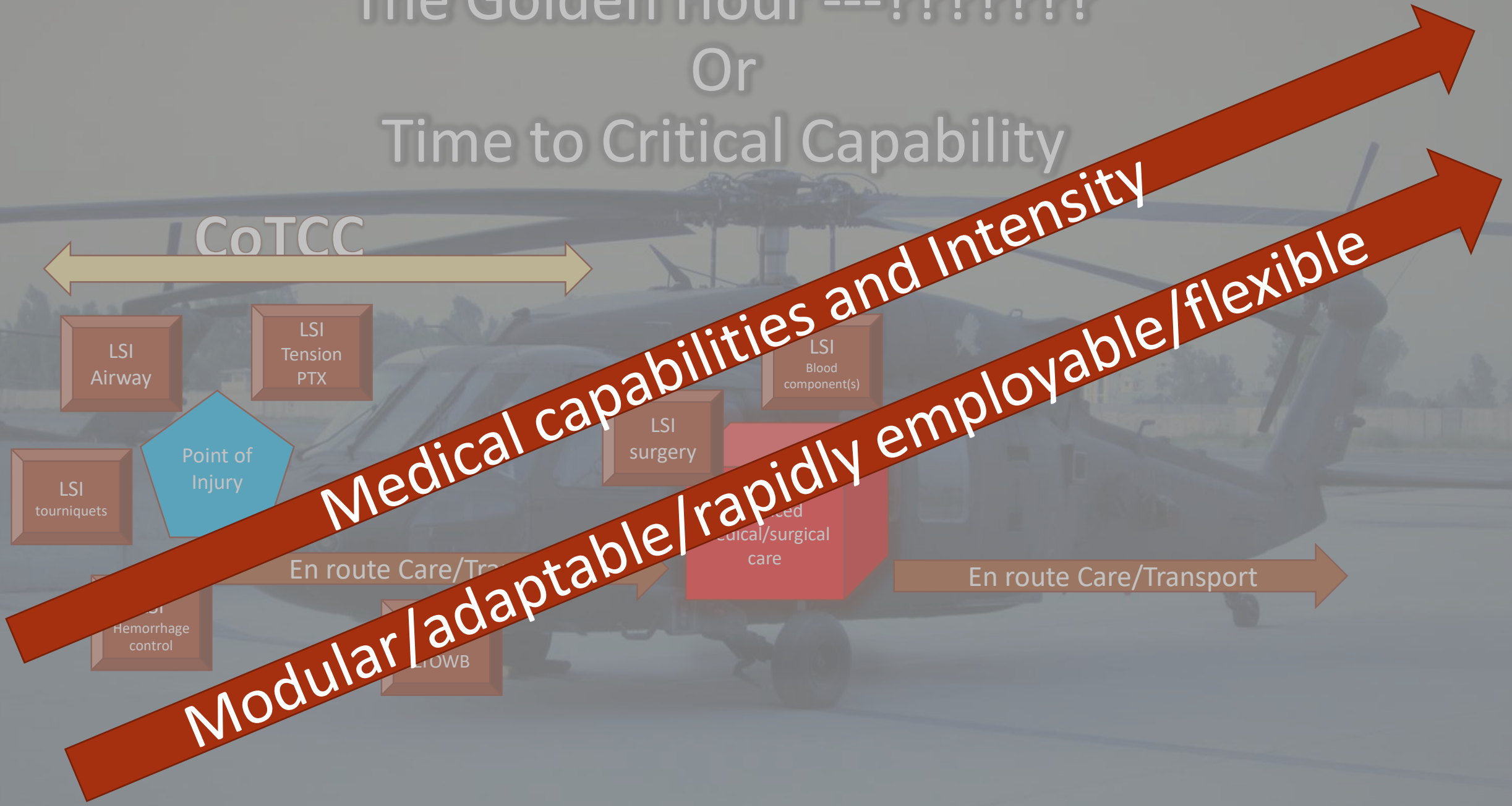
Surgical Capability

Let me explain- current theater

Opportunity

- Future analysis of death(s) on the battlefield need to start afresh and abandon the "Golden Hour paradigm
- Analyze data on
  - Why
  - When
  - Where
- Example
  - Examine casualty data based upon if, and how many LSI's were performed from POI onward
  - When and Where did they occur
  - When death occurs; how many LSI were performed
- Match these casualties who had LSI prior to arrival at Role II to those that did not
- Some LSI(s) may be anticipated to extend survival more than others

The Golden Hour ---???????
Or
Time to Critical Capability



Opportunity -

- We (care providers) must responsibly report these opportunities
- To do so requires data
  - Data acquisition is the Achilles heel of the DoDTR and our ability to analyze
  - < 50% of casualties have a CoTCCC card filed
  - The data quality of the DoDTR may be seriously wanting; not for lack of effort but as the result of the enormous challenges of collecting data in a combat zone
    - Care providers
    - Data capture (pencil and piece of paper) ?Seriously?
    - Data transmission
    - Data verification

The Setting


WELCOME TO JALALABAD AIRFIELD

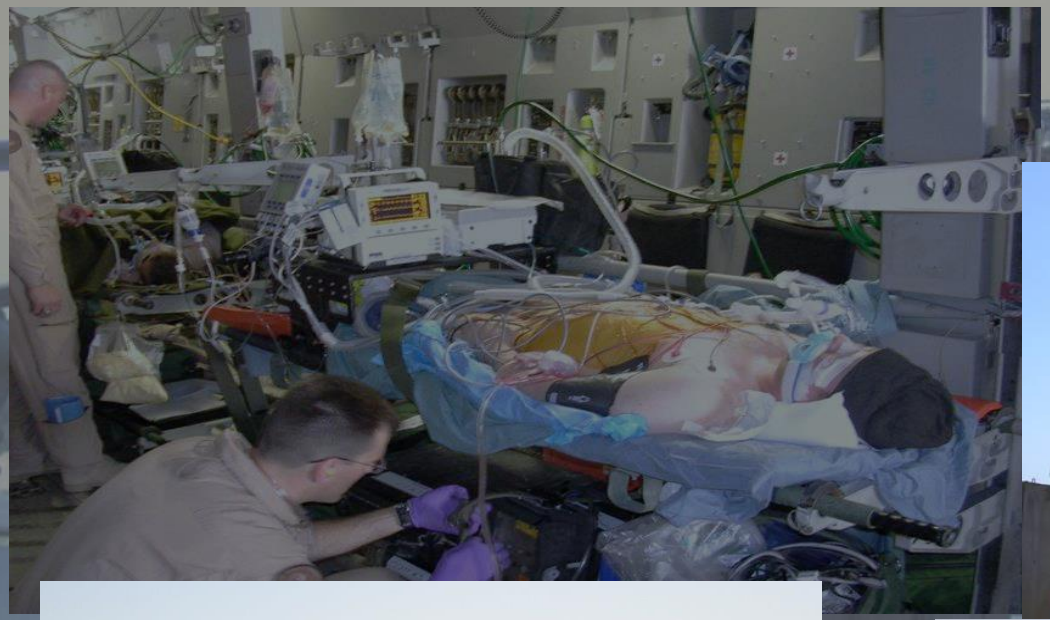

Afghanistan
Pakistan
Kabul
Jalalabad
Peshawar
Abbottabad
Srinagar
Jammu and Kashmir
Wah
Islamabad
Ghazni
Gardez
Gizab
Loman
Day Chopan
Jammu
Adamkay
Sialkot
Gujranwala
Himachal Pradesh
Sargodha
Amritsar
Laskar Gah
Kandahar
Faisalabad
Lahore
Shimla
Chaman
Layyah
Sahiwal
Chandigarh
Gulistan
Kuchlak
Loralai
Multan
Punjab
Quetta
Mastung
Sibi
Hasilpur
Bahawalpur
Haryana
Rahim


Local
EXIT


KNIGHTS

Damage Control-extend the survival

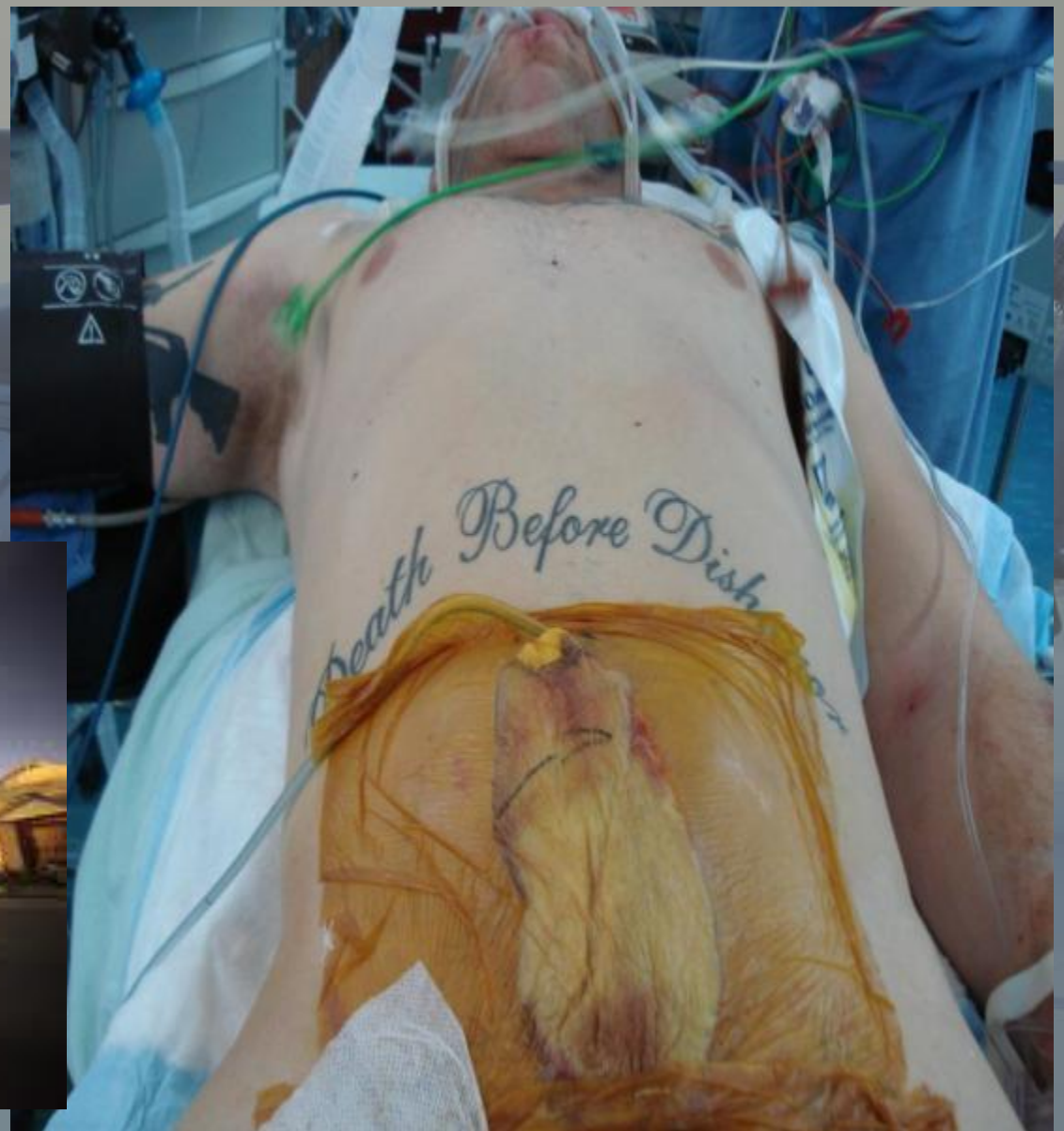
By any means- Enroute Care



Role III – Incredibly capable, but often because of force of personality rather than sustained planning

Come on folks- help me here

If we can do it in a tent------
Surely, we can do it here in the US.



The VTC is an incredibly powerful tool

CCATT= Enroute Care

CCATT Teams

Intensivist Physician

Critical Care Nurse

Respiratory Therapist

6 patients/3 intubated

Mission duration 8-12 hours


LANDSTUHL
REGIONAL
MEDICAL
CENTER

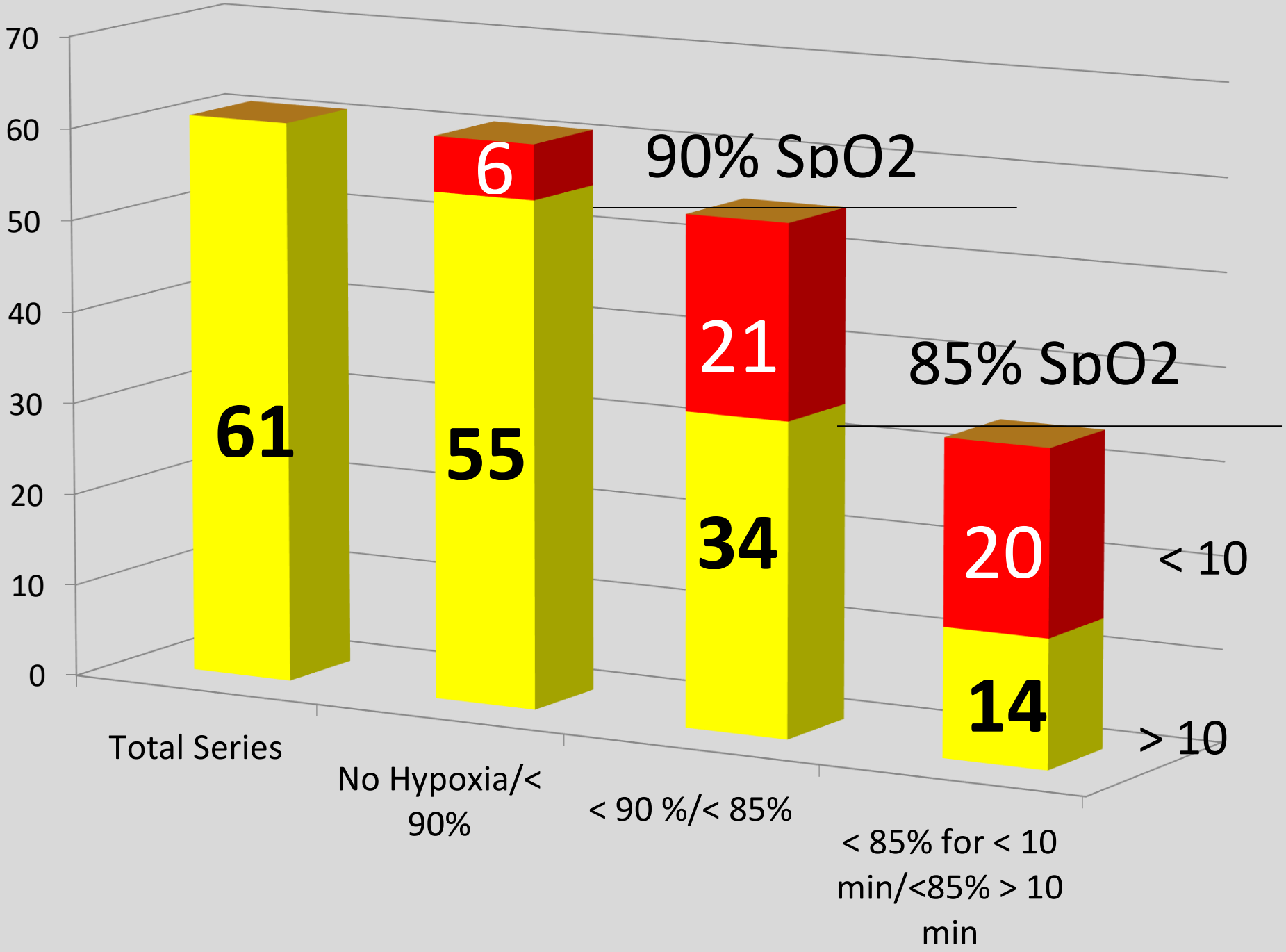
What we don’t know(data) – hurts them

OPPORTUNITY

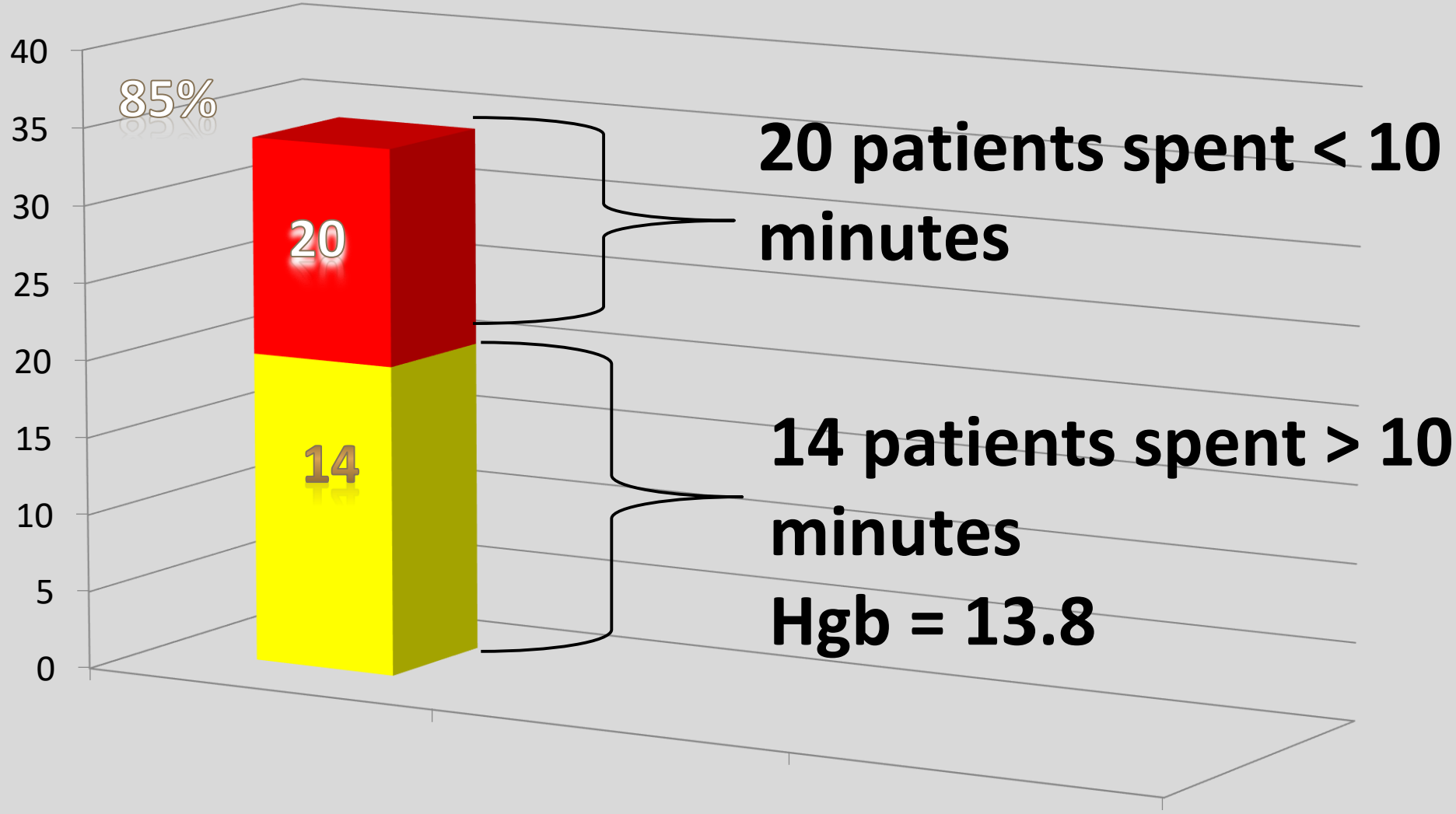
- In over 8,000 CCATT transports the reported incidence of hypoxia is < 1%
- That data comes from a 3899 report form filed by hand at the end of the mission
- What does a care provider do when hypoxia occurs– they fix it; they don’t record it

Scope of Study

- Utilize Digital Oximetry to continuously monitor Oxygen saturation and Hgb during ERC transport from theater to Landstuhl Regional Medical Center
- Observe patterns of oxygen saturation during transport and relation of Hgb to pulse rate
- Intentionally designed as a low risk protocol


70
60
50
40
30
20
10
0
61
6
55
90% SpO2
21
34
85% SpO2
20
14
< 10
> 10
Total Series
No Hypoxia/< 90%
< 90 %/< 85%
< 85% for < 10 min/<85% > 10 min

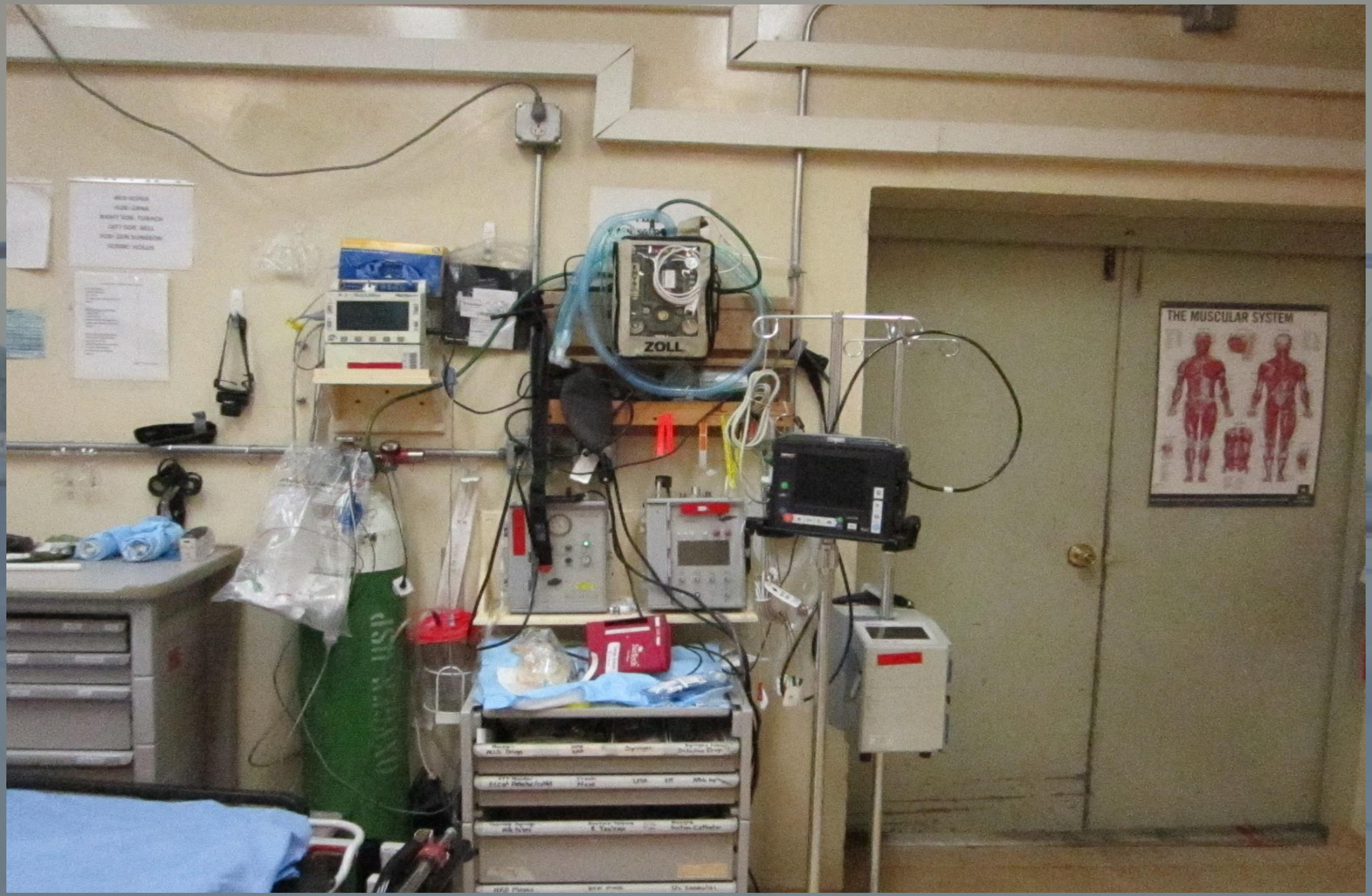
All Patients < 85%



Opportunities

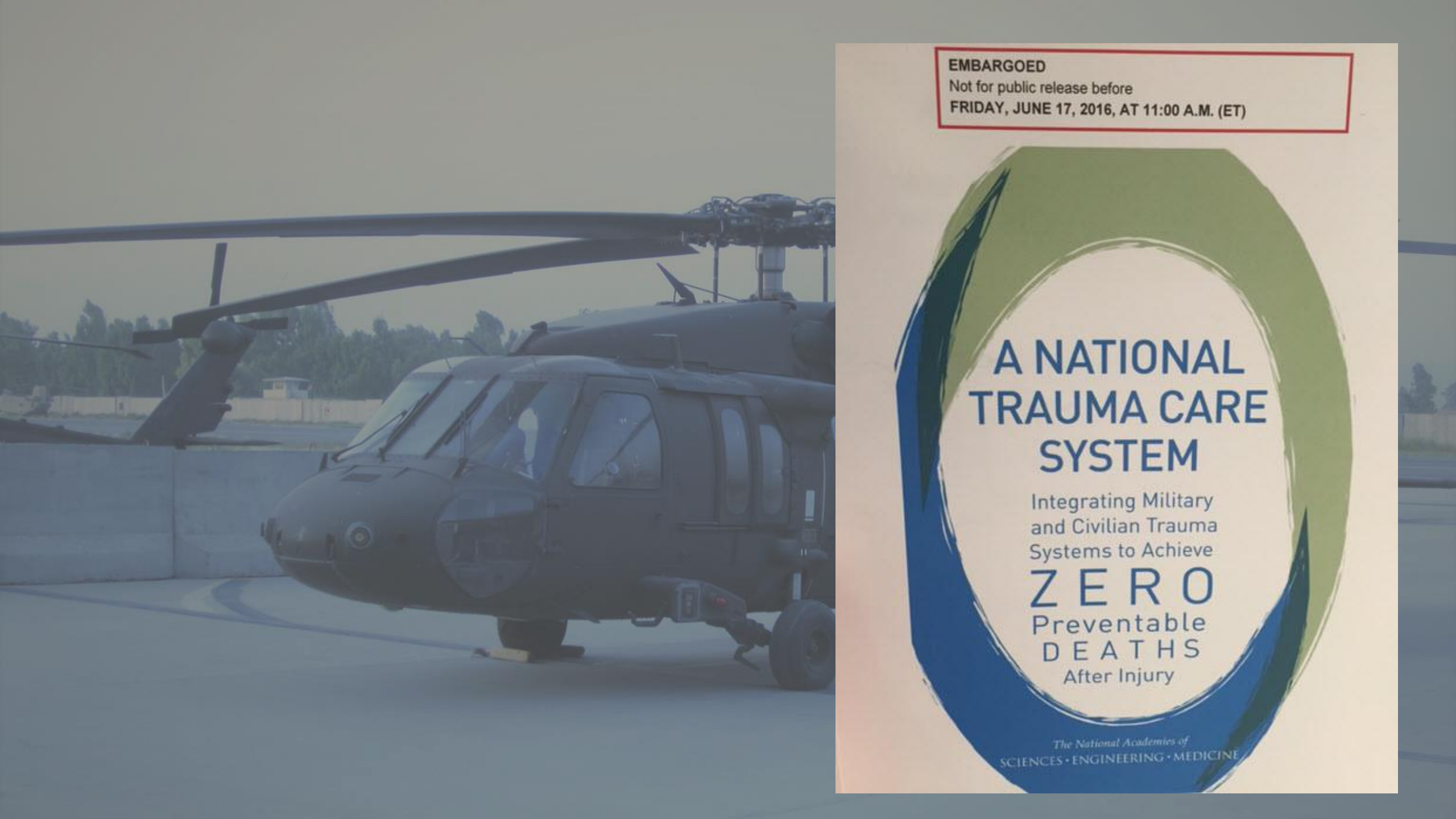
- Fix the disconnect between equipment acquisition and procurement
- Demand that all future equipment must…..
  - Continuously capture and forward transmit data
  - Be infinitely upgradeable rather than replaced
- My poor understanding is that we have two hurdles
  - Translating need to Medical logistics acquisition and not having them down select on the basis of cost
  - Fighting for money from the line who is deciding whether to buy bombs, bullets or tanks versus new medical equipment


TEMPUS
rdt
TC3 Card Side 1
TC3 Card Side 2
Name: Jones,Bobby
ID: 125-52-5825
DTG: 25 Jun 2012 15:27
Allergy:
Friendly
Unknown
NBC
INJURIES
Start Time 08:24
Elapsed 04:22m
TQ
GSW
MVA
Blast
Burn
Other
AVPU Records
Time
AVPU
Pulse
Resp.
BP
SpO2
Back


ZOLL
THE MUSCULAR SYSTEM

Which has better instrumentation?

The Challenge is there– will we let it slip ?



EMBARGOED
Not for public release before
FRIDAY, JUNE 17, 2016, AT 11:00 A.M. (ET)

A NATIONAL TRAUMA CARE SYSTEM

Integrating Military and Civilian Trauma Systems to Achieve

ZERO Preventable DEATHS After Injury

The National Academies of
SCIENCES · ENGINEERING · MEDICINE

Summary

- **Data, continuously captured, retained and forwarded**
- **Data that facilitates care in real time and then guides review and change in the form of a Registry**
- **Continue to support and update and upgrade the Registry– it is our instrument panel**
- **Break the paradigm and form of how we procure medical gear. Otherwise we will continue to do tomorrow's medicine, today, with yesterday's equipment**