

That Others May Live: Lessons Learned from Critical Care in Austere and Non-Permissive Environments

Michael J. Lauria, MD, NRP, FPC

Captain, US Air Force Reserve

Assistant Professor

Dept of Emergency Medicine, Sections of Critical Care and EMS

University of Washington

Flight Physician and Associate Medical Director

Airlift Northwest











Critical injury ***DOES NOT***
respect geography...



Medicina Bona,
Locis Malis

Lessons from these environments
inform my current practice in the ED, ICU, and
prehospital setting...



Rescue Mission on board the ship TAMAR...



The mission that follows has
been cleared for public
release

Credit for this presentation
goes to SSgt Bryan Dalere
USAF Pararescue
103rd Rescue Squadron

Day 1

1300 Z (0800 EST), 24 APR 2017

Atlantic



#1 – Be prepared at all
times...

Mentally and
psychologically
prepared



Equipment packed and prepped for operational efficiency



Day 1
1140_{EST}

Mission Drop



#2 – Economy of motion and communication

Slow is smooth...
...and smooth is fast



Slow is just slow...
...smooth is fast



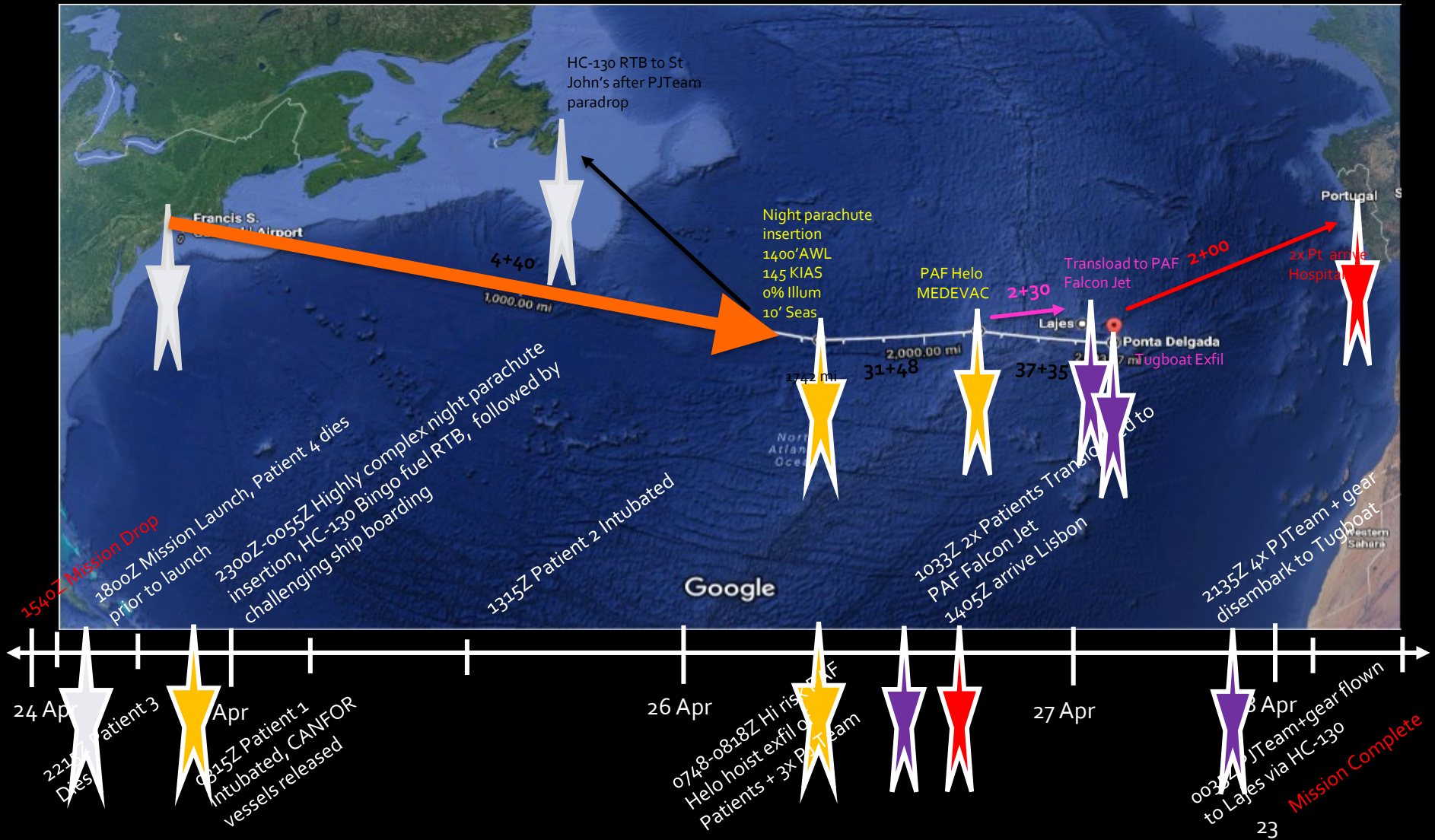


**Automaticity of critical skills and
economy of motion**

Brevity
of
communication



Timeline



Day 1
1600EST

C-130 Flight










#3 – The dynamic and relative nature of safety

$$\text{RISK} = \frac{\text{(probability x consequence)}}{\text{(mitigation x preparation)}}$$

We do dangerous things...and we
do them safely...



A firefighter in red protective gear is shown from the waist down, standing in front of a large, intense fire. The firefighter's gear includes a red helmet, a black harness, and red pants with reflective silver stripes. The fire is bright orange and yellow, with thick smoke rising. The background is dark, suggesting an indoor or nighttime setting.

Sometimes taking
calculated risks is
necessary

Sometimes that
pushes us
outside our
comfort zone



Day 1

1900_{EST}

On Scene



Day 1

1930_{EST}

Jump



#4 – Commit 100%



Do, or not...





TAMAR



#5 – Prepare
psychologically for
challenges

Manage expectations
and expect difficulty





Breath
Talk
See
Focus

Day 1

2000_{EST}

Patient Contact

Patient 1



Patient 2



#6 – Asymmetric clinical
care: the power of a
small team

Never, ever
underestimate the
power of a small team





A well-trained and focused small team
has an advantage

Day 2. Airway management



Day 2

Take the Airway



Successful Cric



Escharotomy





#7 – Keep your clinical
blade sharp

Continuously expand, hone, and refresh
knowledge and skills





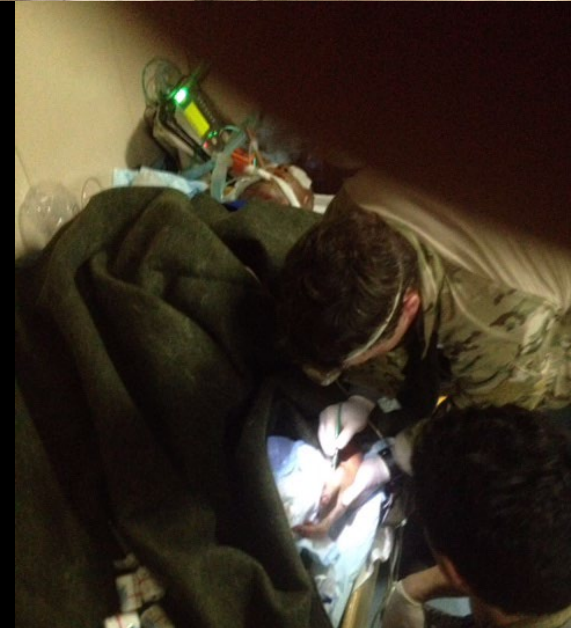
What would I do if...?

Management of CCP and supply




Day 2 & 3 Extended Care

- Treated for 32 hrs on ship
- Work Rest Cycles
 - 1.5 Hours on Patients
 - 3.0 Hours Gear / Rest
- Do we Have Enough Meds?
 - Do the math and discover exactly how many hours we can continue sedation
 - Back up plan to get meds delivered
- Continue Patient Care – Document q 15min
- Sedation Meds were pushed q 30 min
- Combating Exhaustion / Evolving through it as a team

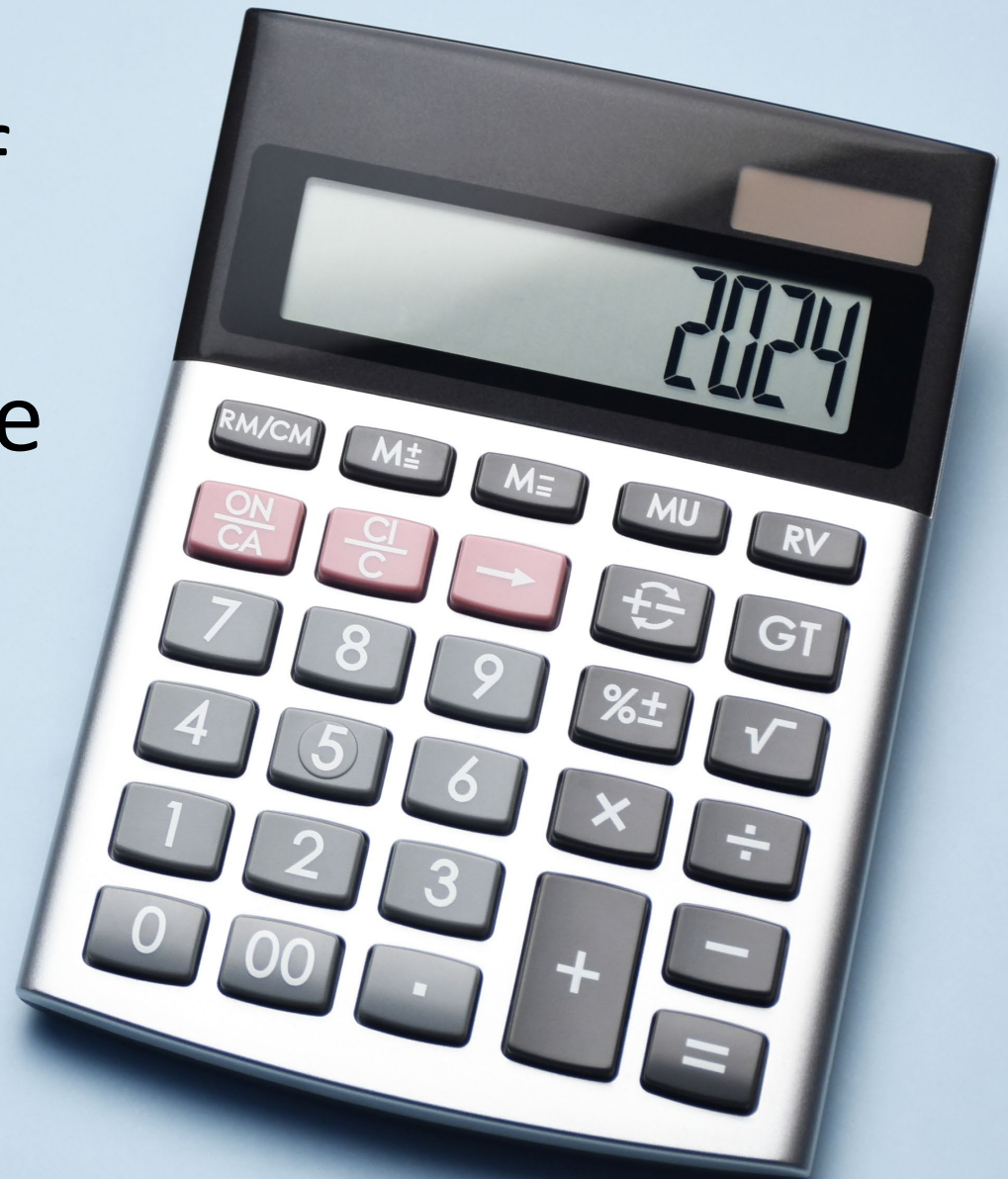


#8 – Logistics, logistics, logistics

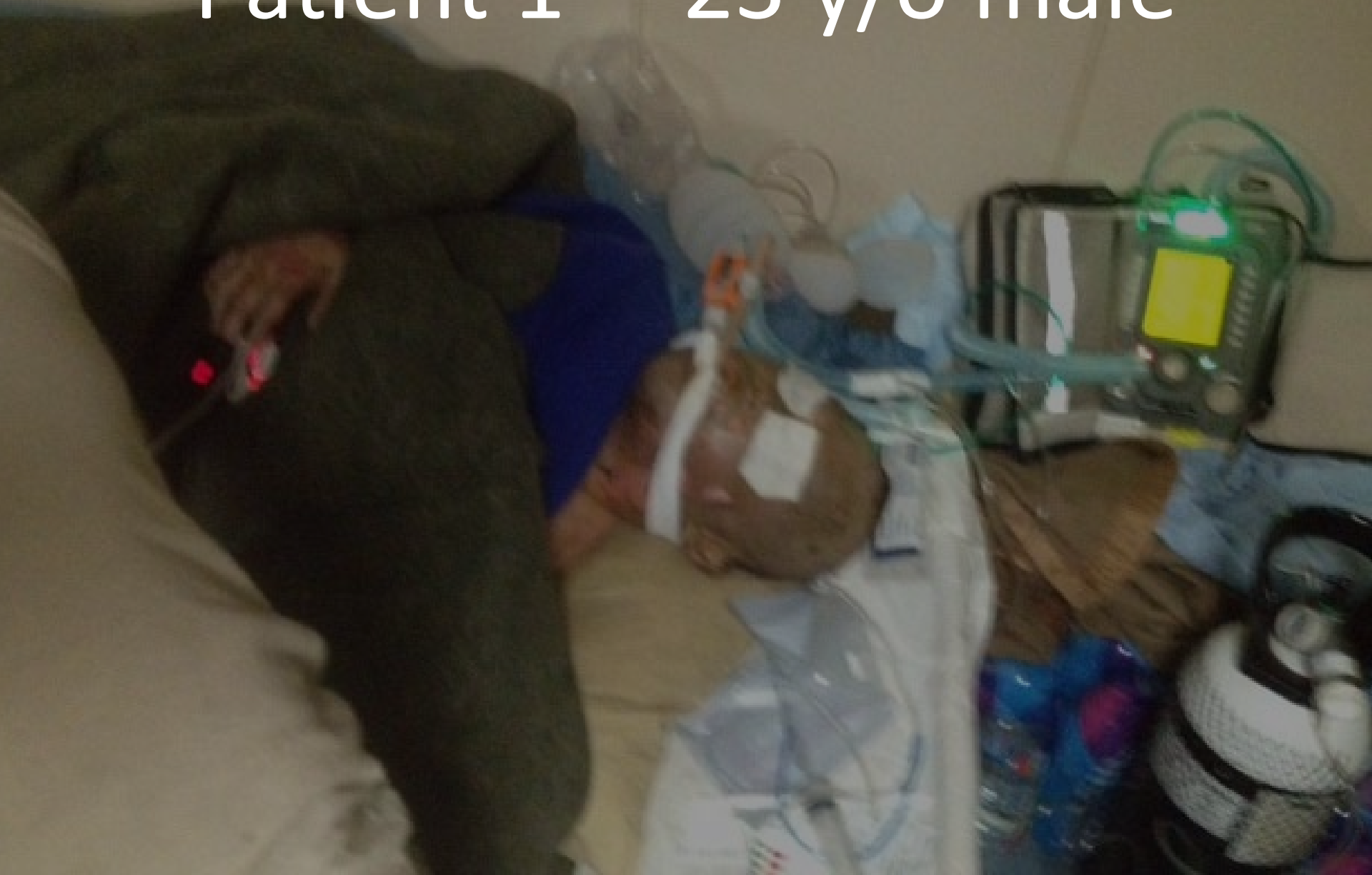


It's all about managing what
you have and finding ways
to get more

Careful
consideration of
medications,
oxygen, and more



Patient 1 23 y/o male





Patient 2
40 y/o Male

Day 3 - Packaging For Exfil

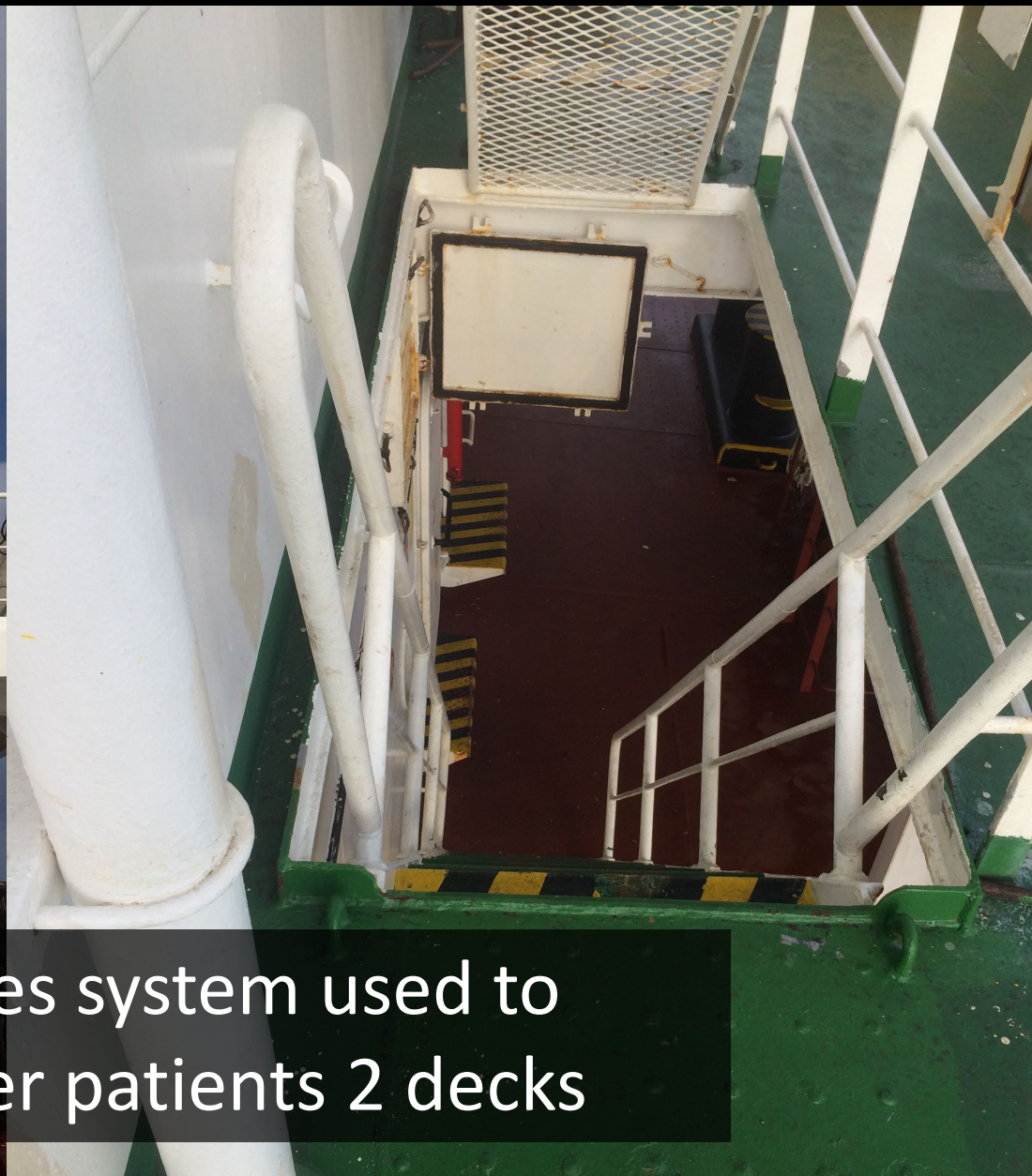
PJ Team Relocate Patients and Package



Patient Packaged for MEDEVAC Exfil



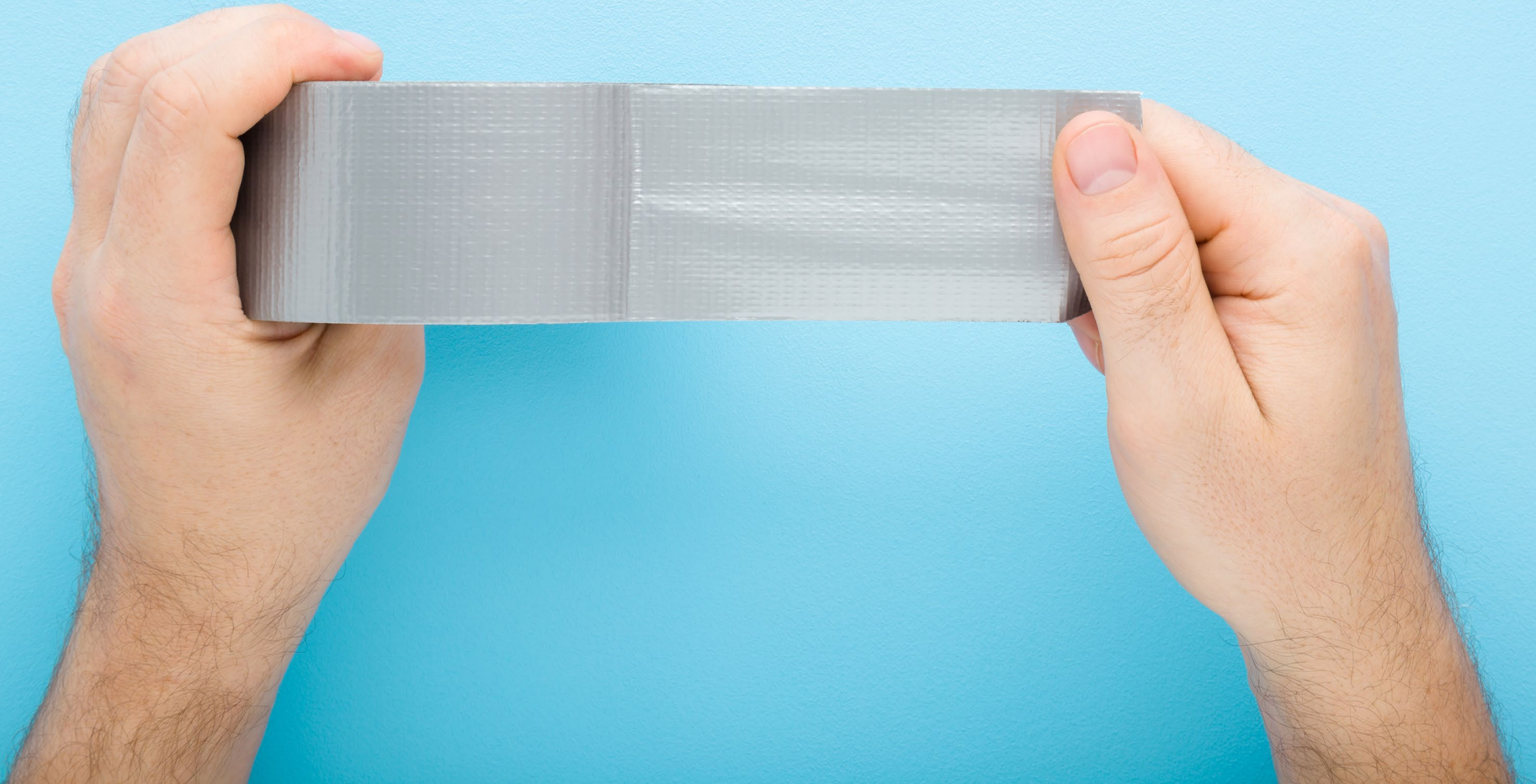
Day 3 - Staging For Exfil




Ropes system used to lower patients 2 decks

#9 – Improvise, adapt,
and overcome

Sometimes synthesizing unconventional solutions is what we have to do...





Foundations
should be based
on sound
evidence and
principles

ESQUADRA 751



Day 3 – Exfil

Portuguese AF hoist Esquadra 751



Patient Outcome






#10 – Remember who
you are fighting for

Not just patients...they are people





The same level of
care, compassion,
and attention to
detail as if they were
our family

And one more thing...



Rice University
September 12, 1962

...but because
it is hard



Keep
pushing
the
envelope



DO these things...that others
may live.



1. Always be prepared
2. Economy of motion and communication
3. Safety is relative and dynamic
4. Commit 100%
5. Prepare psychologically for challenge and difficulty
6. Don't underestimate the power of a small team
7. Keep your clinical blade sharp
8. It's all about logistics
9. Improvise, adapt, and overcome (sometimes)
10. Remember who you are fighting for...

Thank You

