June 2022 – THOR Annual Conference

RDCR Implementation in the IDF: Challenges and Successes

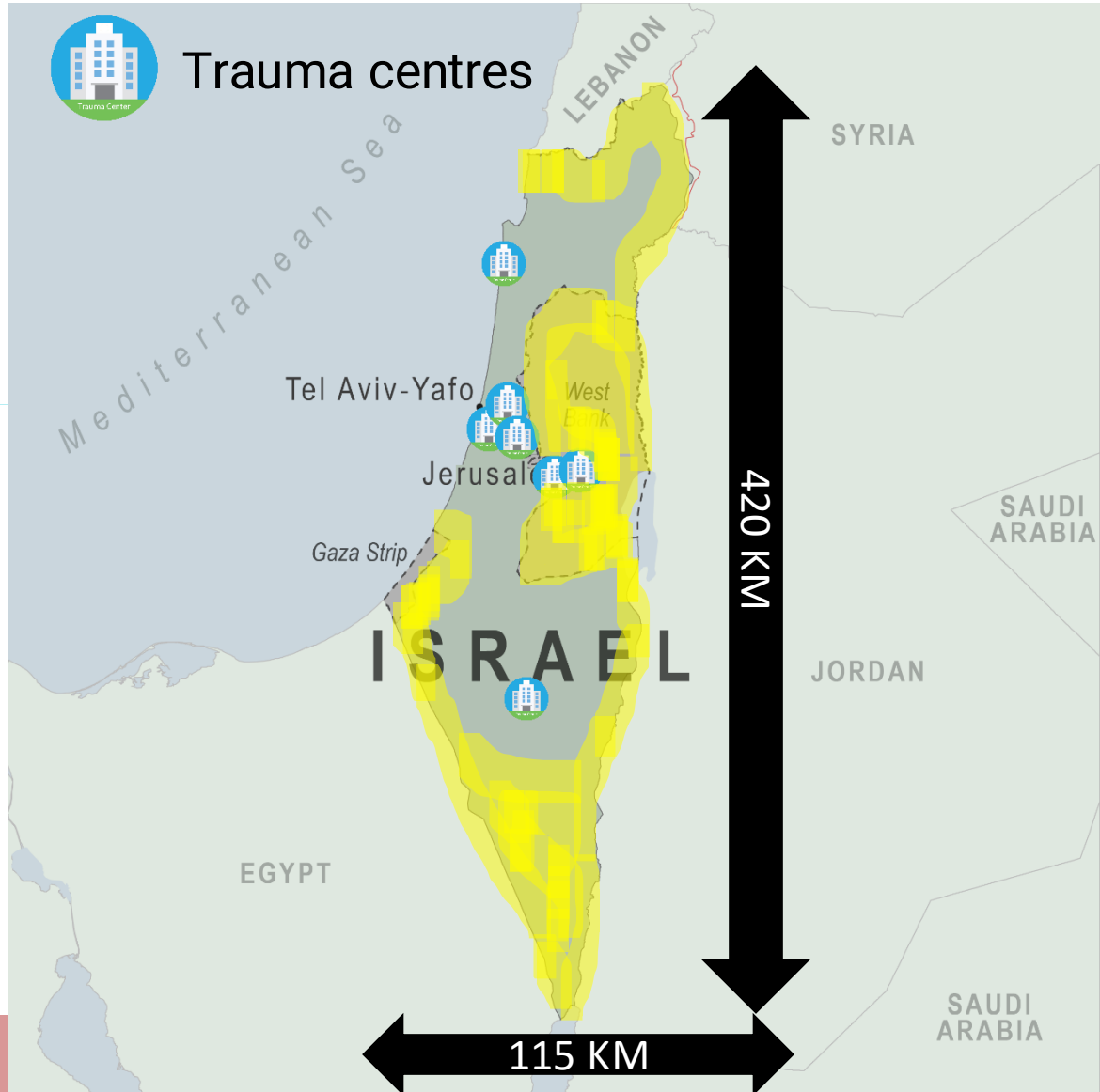
LTC Ofer Almog MD, MHA

Thanks & An Apology

Sadly, the days of people using proper English are went.

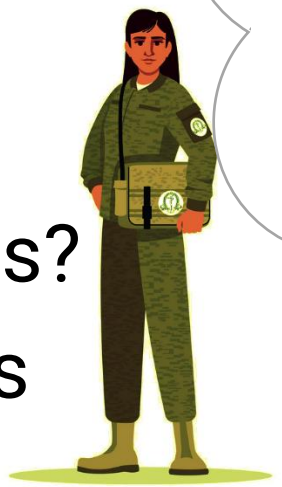
Introduction

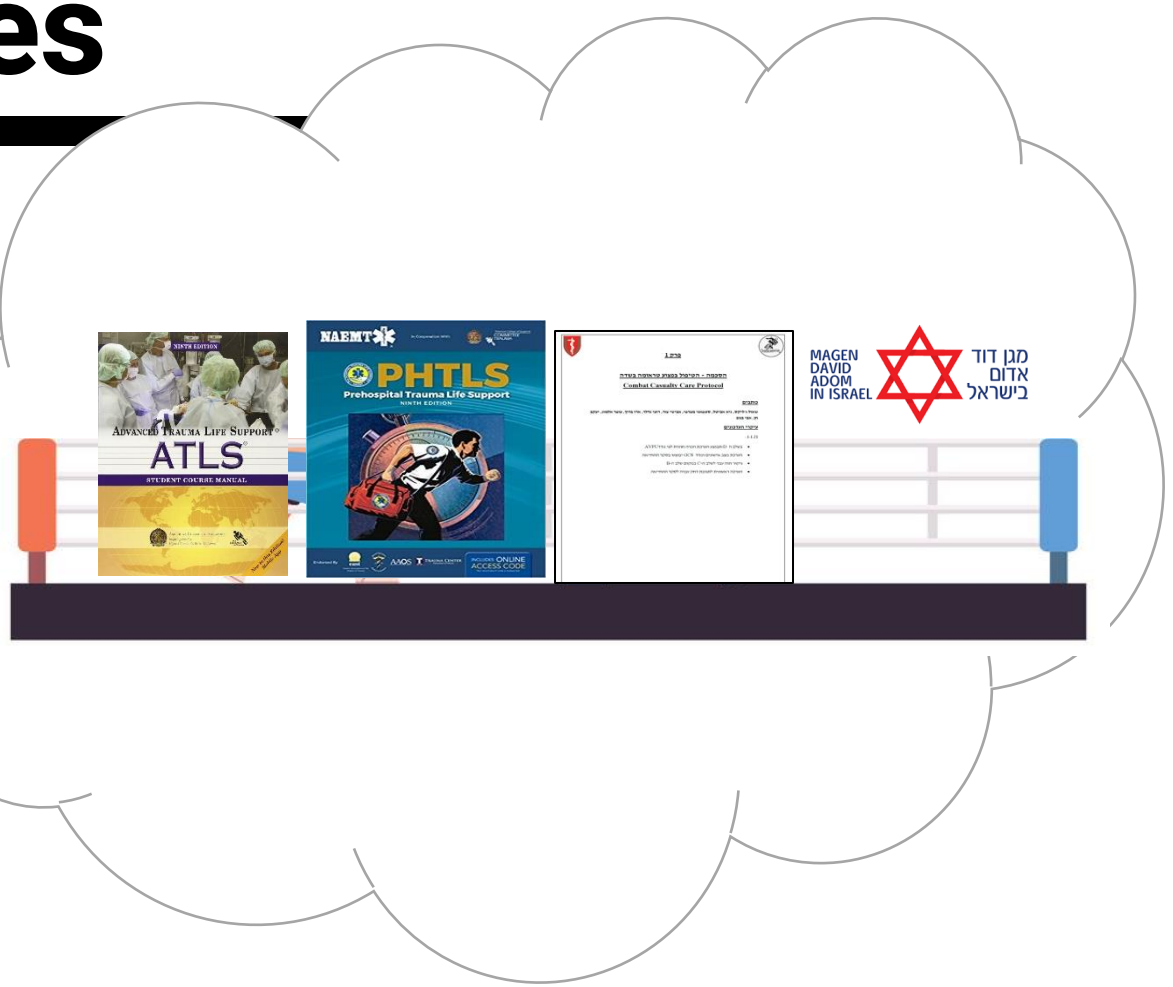
- IDF-MC setting:
  - **ALS providers:** Physicians and paramedics
  - **IDF ALS teams** along the borders and in military bases.
  - **Short** transport times
  - Transport to **civilian hospitals** and trauma centers



Challenges

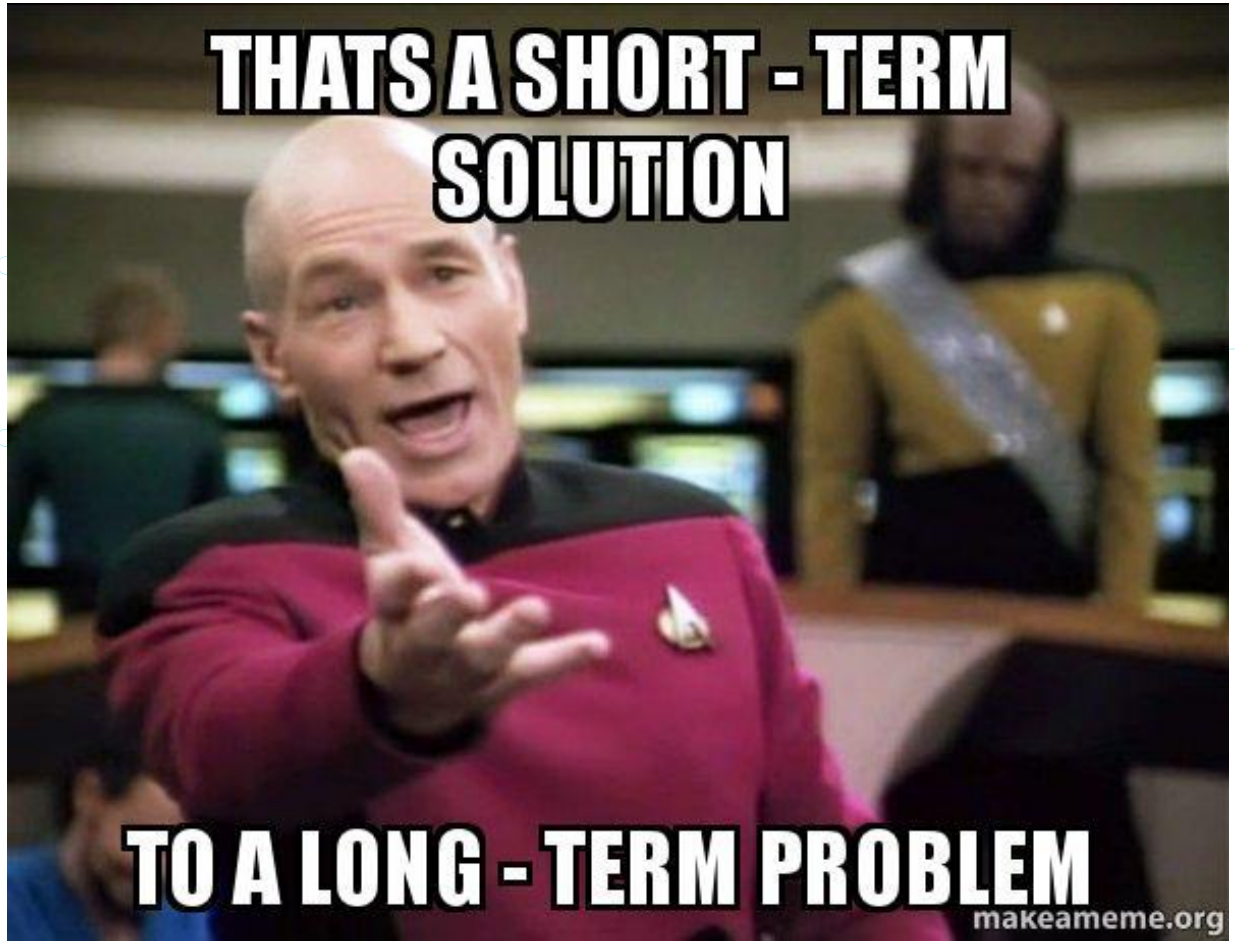
- **Heterogeneity** of providers
- **High turnover** and inexperience
- Providers **wary of change**/new treatments?
- **Adherence** to protocols





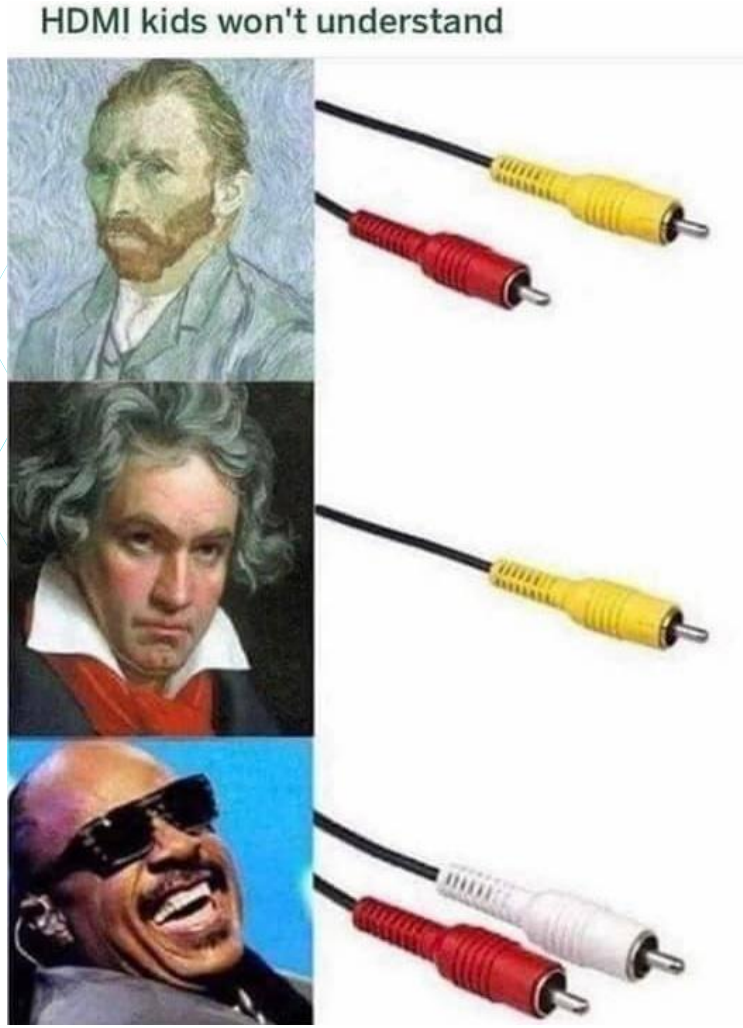
ALS Providers (active duty)

Physicians	Paramedics
• 26 years old • Med-school graduates (+)… • Field service ~1.5-5 years	• 19 years old • 14 months training* • Effective Field service ~22 months



ALS Providers (reserve duty)

Physicians	Paramedics
• ~30s-40s • Military service graduates • Med-school graduates +/- residency • Working as physicians	• ~20s-40s • Military service graduates • EMT-P course graduates • Most don't work as Paramedics

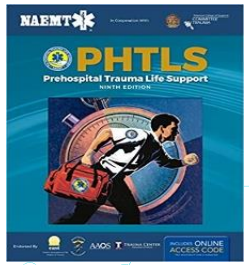


ALS Providers

		ALS Ambulances	Battalions	Special Forces	Medevac	Brigades- Medical companies (ICU+FST)
Routine	Active Duty	✓	✓	✓	✓	
	Reserve				✓	
Wartime (addition)	Active Duty	✓	✓	✓	✓	✓
	Reserve	✓	✓			

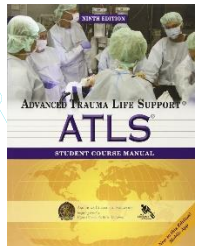
BECAUSE NOBODY TELLS ME WHAT TO DO

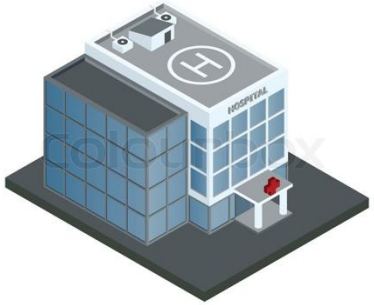
Paramedics



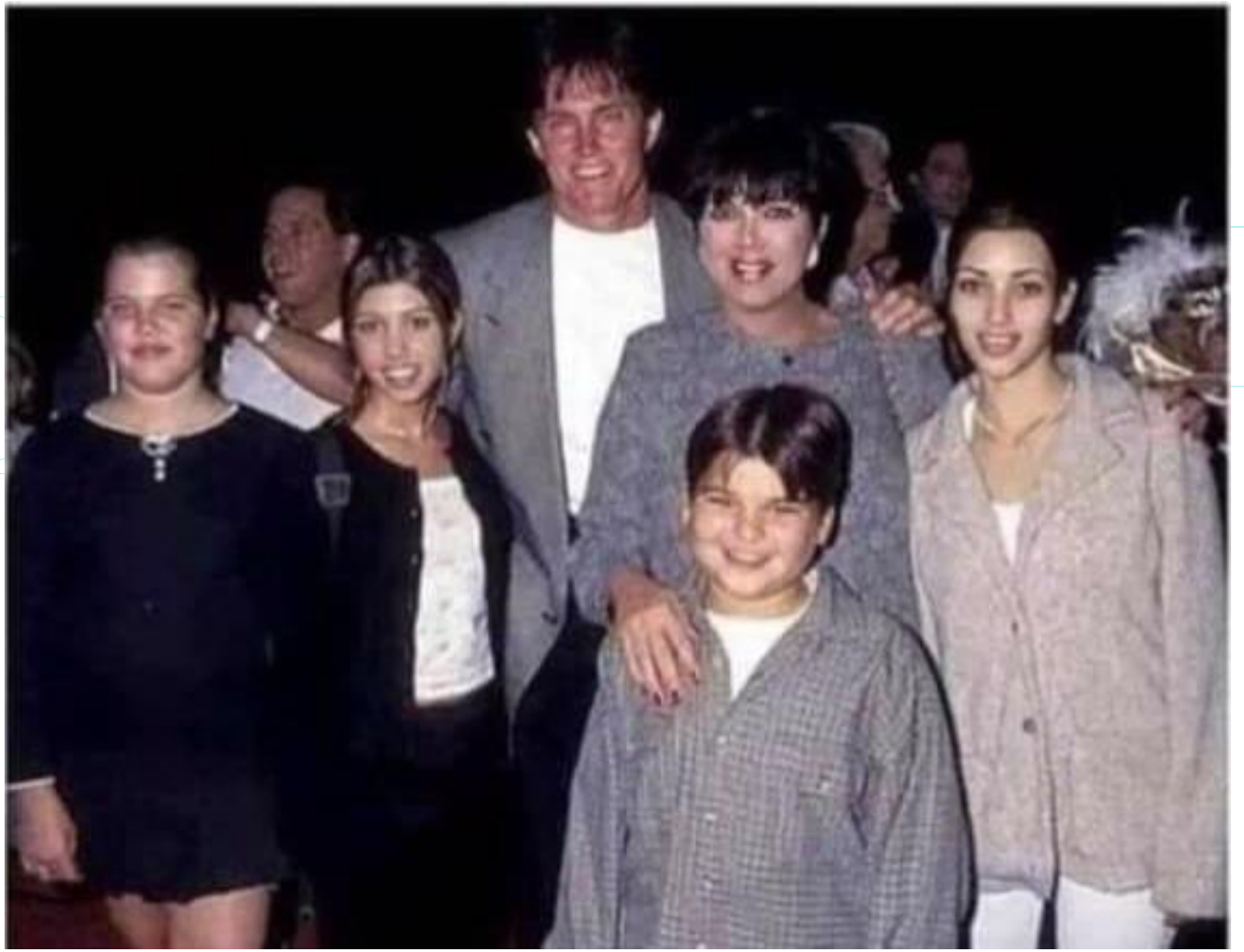
MAGEN DAVID ADOM IN ISRAEL
מגן דוד אדום בישראל

ics & Physicians





Believe it or not, changes are possible!



How do we adapt and improve?

Literature

Research

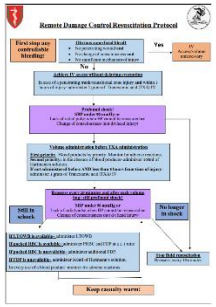
Domestic and international collaborations

Event

Trauma Registry Entry

Data collection & research

CPGs



Teach and educate

Bringing Tranexamic Acid forward

TXA for ALS Providers (2013)

Tranexamic acid in the prehospital setting: Israel Defense Forces' initial experience

Ari M. Lipsky [a,1], Amir Abramovich [a,1], Roy Nadler [a], Uri Feinstein [a], Gadi Shaked [b], Yitshak Kreiss [c], Elon Glassberg [a,*]

[a] Trauma & Combat Medicine Branch, Medical Corps, Israel Defense Forces, Israel
[b] Department of Surgery, Soroka Medical Center, Beer-Sheba, Israel
[c] Surgeon General's Headquarters, Medical Corps, Israel Defense Forces, Israel

Tranexamic acid at the point of injury: The Israeli combined civilian and military experience

Roy Nadler, MD, Sami Gendler, MD, Avi Benov, MD, MHA, Refael Strugo, MD, Amir Abramovich, MD, *and* **Elon Glassberg, MD, MHA,** *Ramat Gan, Israel*

Conclusions: We have shown that TXA may be successfully given in the prehospital setting without any apparent delays in evacuation. In light of recent evidence, the ability to give TXA closer to the time of wounding represents an important step towards improving the survival of trauma victims with haemorrhage, even before definitive care is available. While this may be especially relevant in austere combat environments, there is likely benefit in the civilian sector as well. The safety profile of TXA is an important consideration as prehospital personnel tended to overtreat casualties without indications for TXA per protocol. We suggest that TXA be considered a viable option for use by advanced life support providers at or near the point of injury.

Bringing FDP forward

FDP for ALS Providers (2013)

Point-of-injury use of reconstituted freeze dried plasma as a resuscitative fluid: A special report for prehospital trauma care

Elon Glassberg, MD, MHA, Roy Nadler, MD, Todd E. Rasmussen, MD, Amir Abramovich, MD, MPH, Tomer Erlich, MD, Lorne H. Blackbourne, MD, *and* Yitshak Kreiss, MD, MPA, MHA, *Ramat Gan, Israel*

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TO THE EDITOR: In the article by Myburgh and Mythen on resuscitation fluids, trauma, which is the leading cause of death among young, productive persons, was not addressed.[1] The authors do not mention prehospital settings, where fluid resuscitation is routine.

We have recently introduced plasma as the resuscitation fluid of choice for hemorrhaging trauma patients in the prehospital setting, a use not discussed in the article. This is unlike its use as a supplement to blood-product transfusion in hospital settings.[2] In fact, plasma (i.e., in lyophilized form) as a volume expander meets the requirements suggested by the authors for the "ideal" resuscitation fluid, although of course not without disadvantages. Our initial experience indeed supports it as an improved resuscitation fluid.[3] Could the authors comment on this special case?

Elon Glassberg, M.D., M.H.A.
Roy Nadler, M.D.
Yitshak Kreiss, M.D., M.H.A., M.P.A.

Bringing whole blood forward

LTOWB for MEDEVAC teams (2018)

Early experience with transfusing low titer group O whole blood in the pre-hospital setting in Israel

Roy Nadler,[1,2,†] Avishai M. Tsur,[1,†] Mark H. Yazer,[3,4] Eilat Shinar,[5] Tzadok Moshe,[5] Avi Benov,[1,6] Elon Glassberg,[1,6,7] Danny Epstein,[1] and Jacob Chen[1]

Low-Titer Group O Whole-Blood Resuscitation in the Prehospital Setting in Israel: Review of the First 2.5 Years' Experience

Dan Levin[a] Maoz Zur[b] Eilat Shinar[c,d] Tzadok Moshe[c,d] Avishai M. Tsur[a,e] Roy Nadler[a,f] Mark H. Yazer[g,h] Danny Epstein[a,i] Guy Avital[a,j] Shaul Gelikas[a] Elon Glassberg[a,k,l] Avi Benov[a,k] Jacob Chen[a,m]

Bringing whole blood forward

LTOWB for ground EMS teams (2021)

RDCR Evolution

PRBC for aeromedical teams

2012
TXA

2013
FDP

2018
LTOWB for aeromedical teams

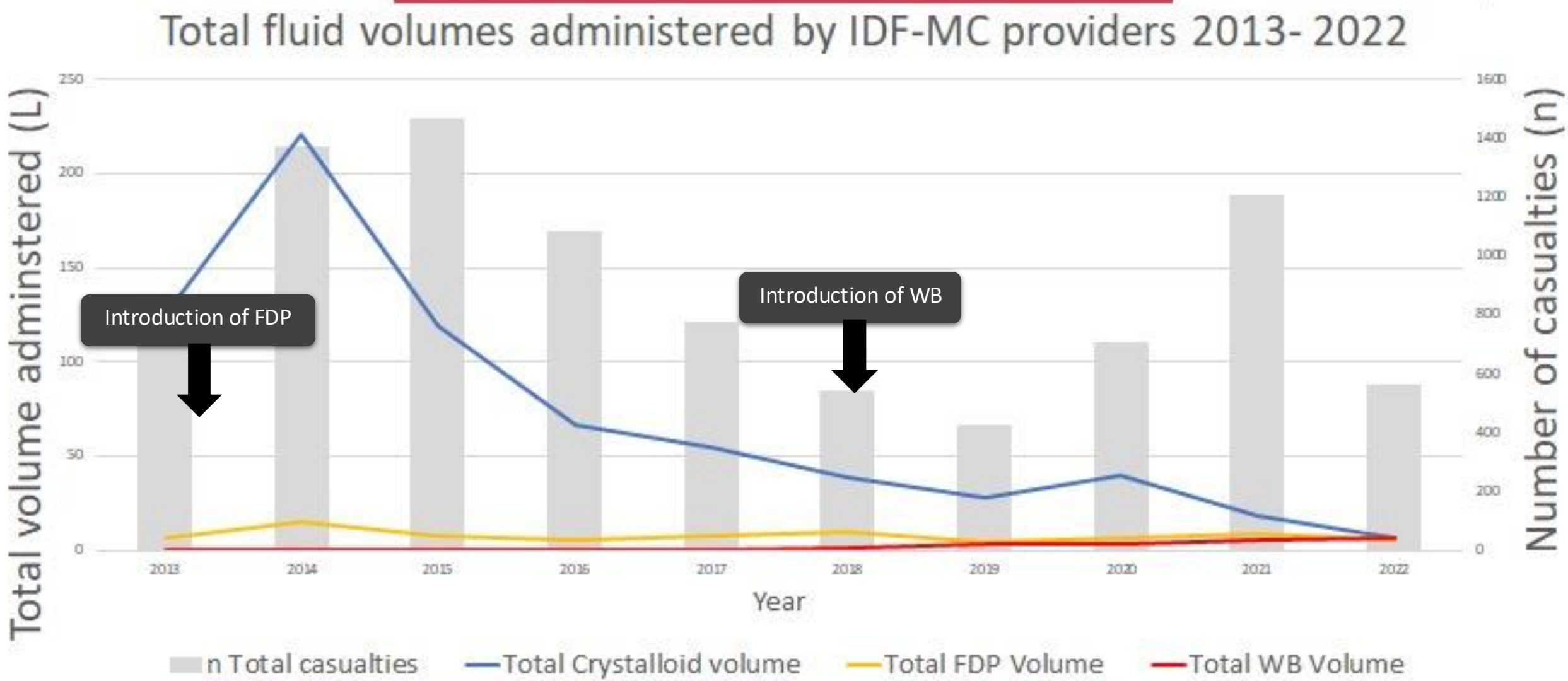
2021
LTOWB for ground ambulances

Commando "RDCR providers"

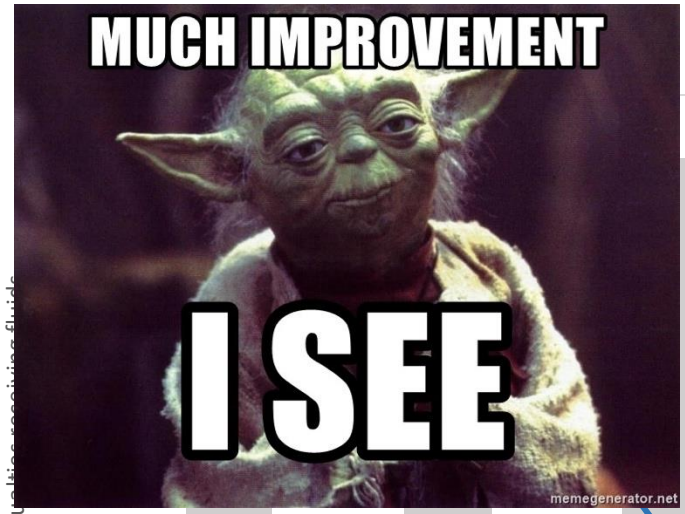
Ground teams (Led by paramedics/physicians)

Aeromedical evacuation/military ALS ambulances

Total fluid volumes



Changes in volume administration



And yet…

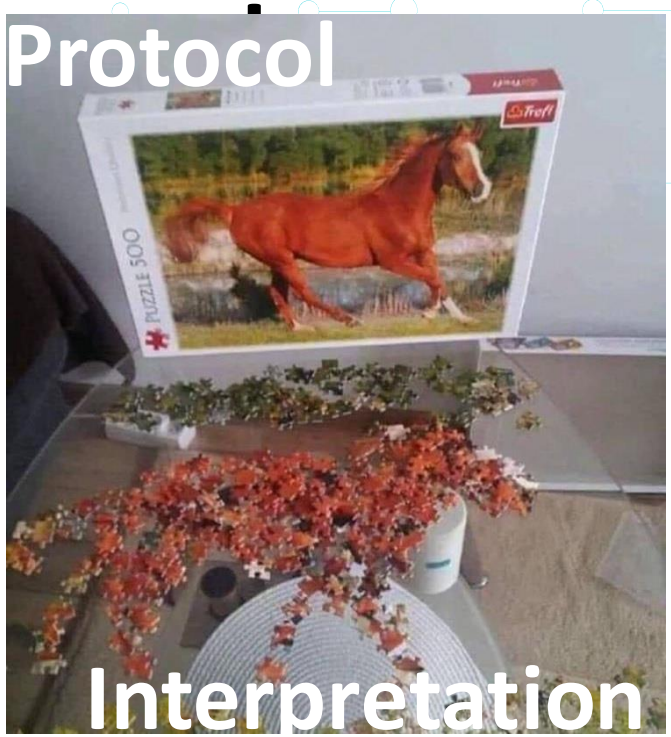
Whole blood units were discarded because of inadequate temperature.

And yet…

30 years old patient with isolated blunt force trauma to the tibia is treated with FDP, because HR > 130.

And yet…

A trauma patient in deep hemorrhagic shock doesn't receive whole blood because fluid warmer doesn't

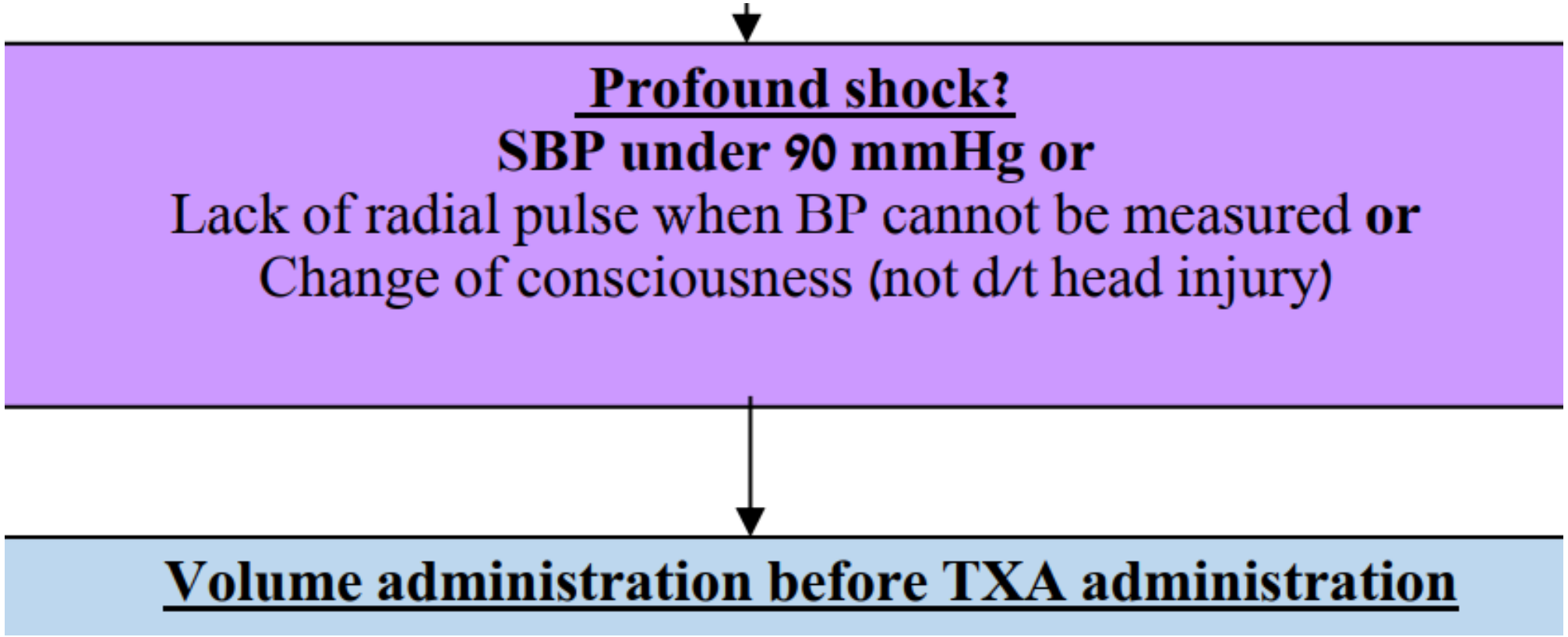


CR ve?

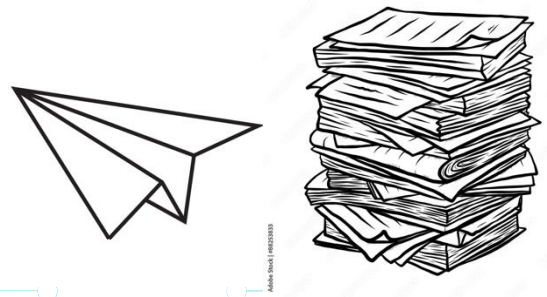

Instructions:
Calming Baby
GOOD
BAD
XXX

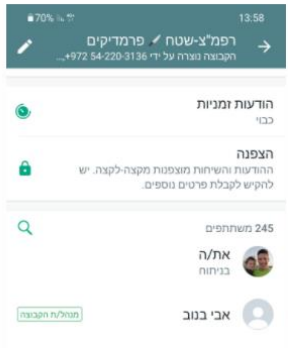

Instructions:
Washing Baby
GOOD
BAD

RDCR latest update: a change in the definition of shock



The way we made so far



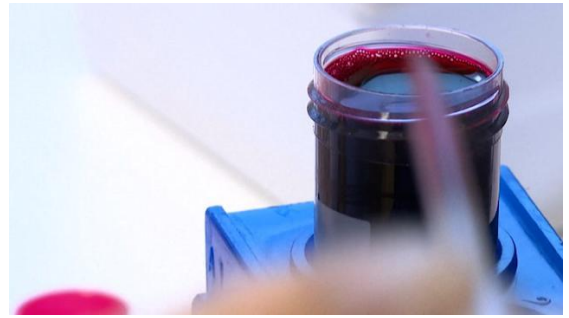


More Challenges

- Access and **logistics** in **combat**

Directions for the future

- Better definition of shock (new sensors?)
- Better training
- Decision Support Tools (Telemedicine? AR?)
- **Bringing blood products forward:**
  - Whole-blood to more teams
  - New storage and logistic options for whole-blood



Thank you

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