Rehabilitation in Conflict

World Health Organization

EMT

WHO Europe

HEALTH EMERGENCIES programme

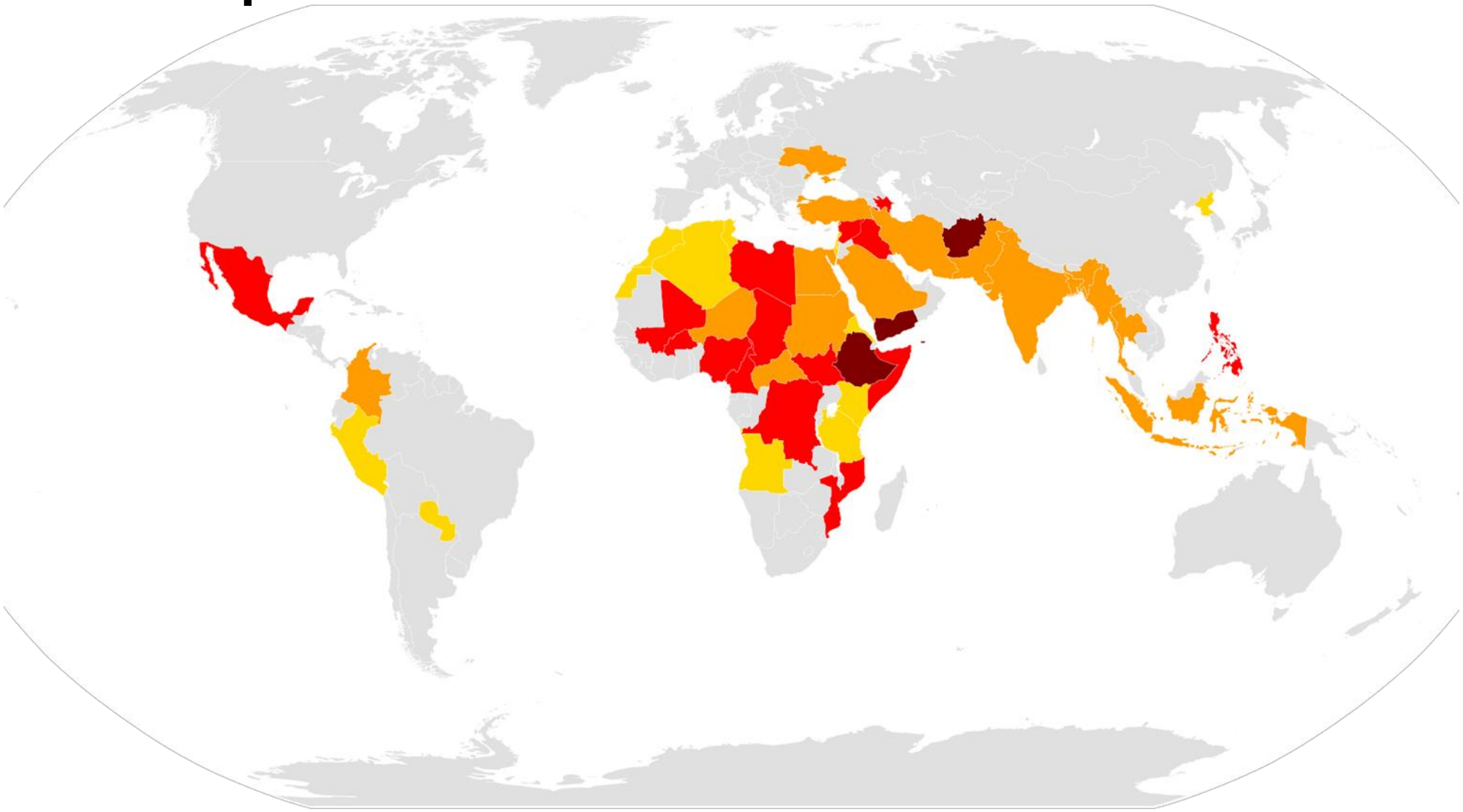
What we will cover:

CONFLICT

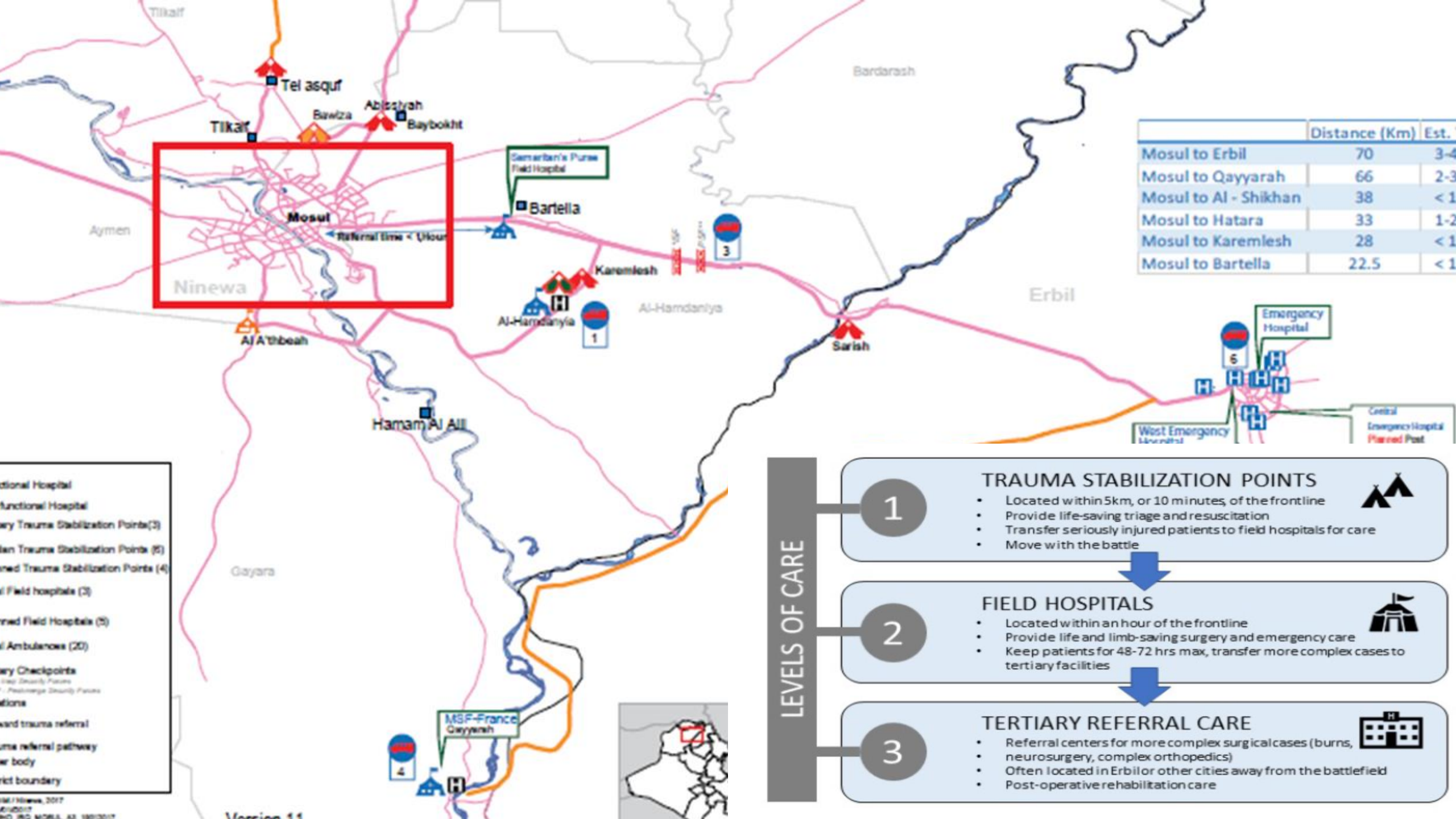
- What we will cover:

- Describe the rehabilitation needs that can result from conflict
- Understand the mechanism of blast and gun shot injuries

As of April 2021:



Country	Years	Injured	Source
Yemen	2015-2018	10,768	OHCHR
Syria	2011-2020	2 million civilians	SOHR
Iraq	2004-2011	239,133 Iraqis	Govt Iraq
Afghanistan	2019	6989 civilians	UNMA
Gaza	2014	12831	OCHA



	Distance (Km)	Est.
Mosul to Erbil	70	3-4
Mosul to Qayyarah	66	2-3
Mosul to Al - Shikhan	38	< 1
Mosul to Hatara	33	1-2
Mosul to Karemlesh	28	< 1
Mosul to Bartella	22.5	< 1

LEVELS OF CARE

1

TRAUMA STABILIZATION POINTS

- Located within 5km, or 10 minutes, of the frontline
- Provide life-saving triage and resuscitation
- Transfer seriously injured patients to field hospitals for care
- Move with the battle

2

FIELD HOSPITALS

- Located within an hour of the frontline
- Provide life and limb-saving surgery and emergency care
- Keep patients for 48-72 hrs max, transfer more complex cases to tertiary facilities

3

TERTIARY REFERRAL CARE

- Referral centers for more complex surgical cases (burns, neurosurgery, complex orthopedics)
- Often located in Erbil or other cities away from the battlefield
- Post-operative rehabilitation care

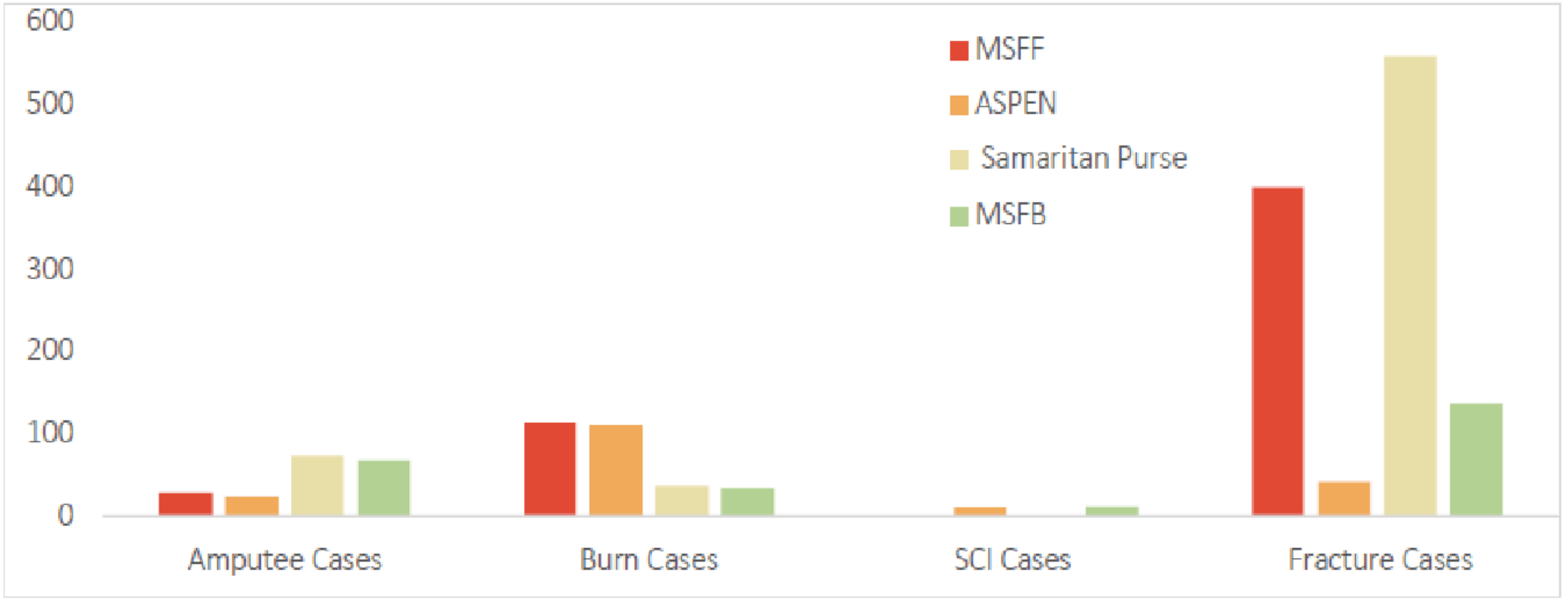
Hopkins Humanitarian Review Summary:

Key Finding #4: ***Post-operative and rehabilitative care warranted greater support.***

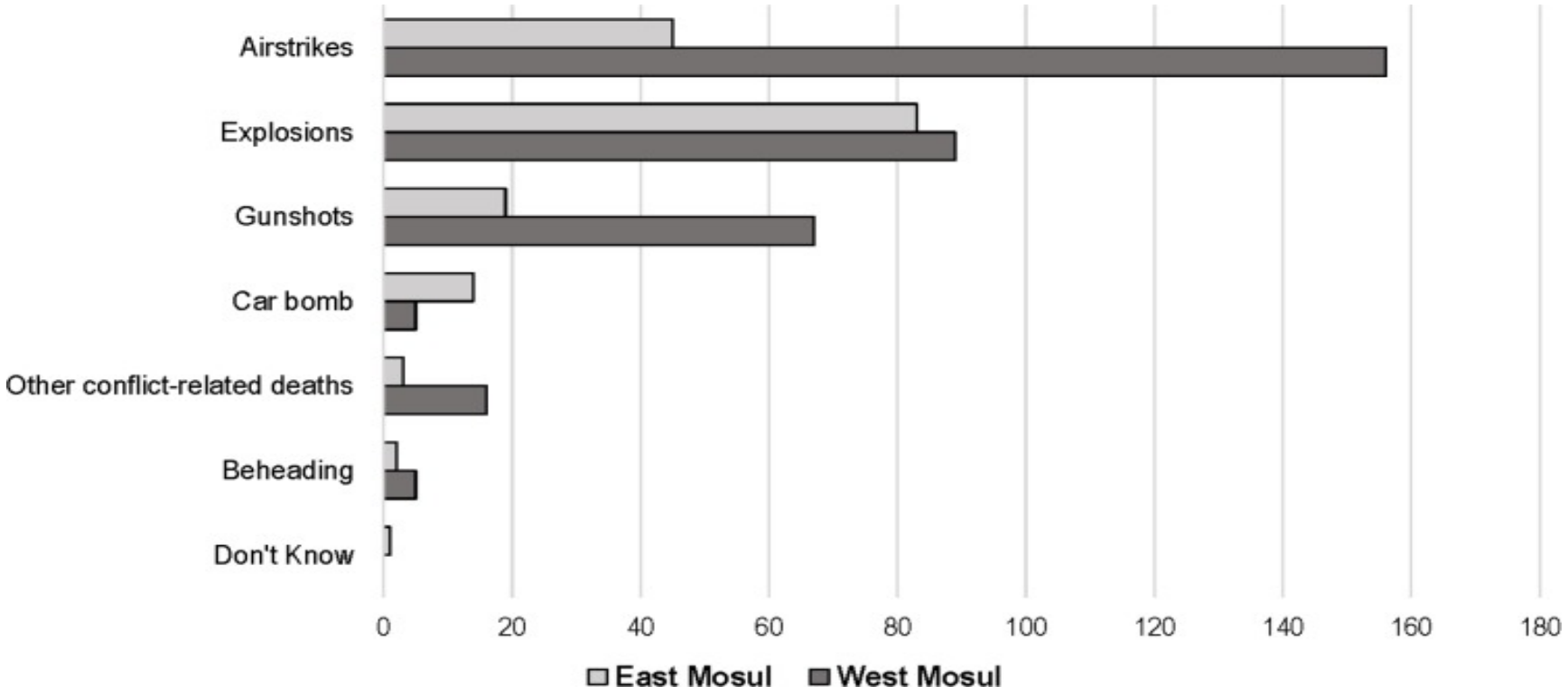
- These needs were inadequately developed and supported.
- Field hospitals were instructed to discharge patients within 72 hours to ensure they had sufficient space for mass casualties, leading some patients to be discharged too early with limited to no follow-up.
- This issue was eventually recognized, however, there was insufficient capacity to meet the need.
- The full extent of rehabilitative needs among war victims in the internally displaced persons camps remains unknown, although surveys from HI in some of the camps have shown large needs.

Injuries from Mosul Crisis

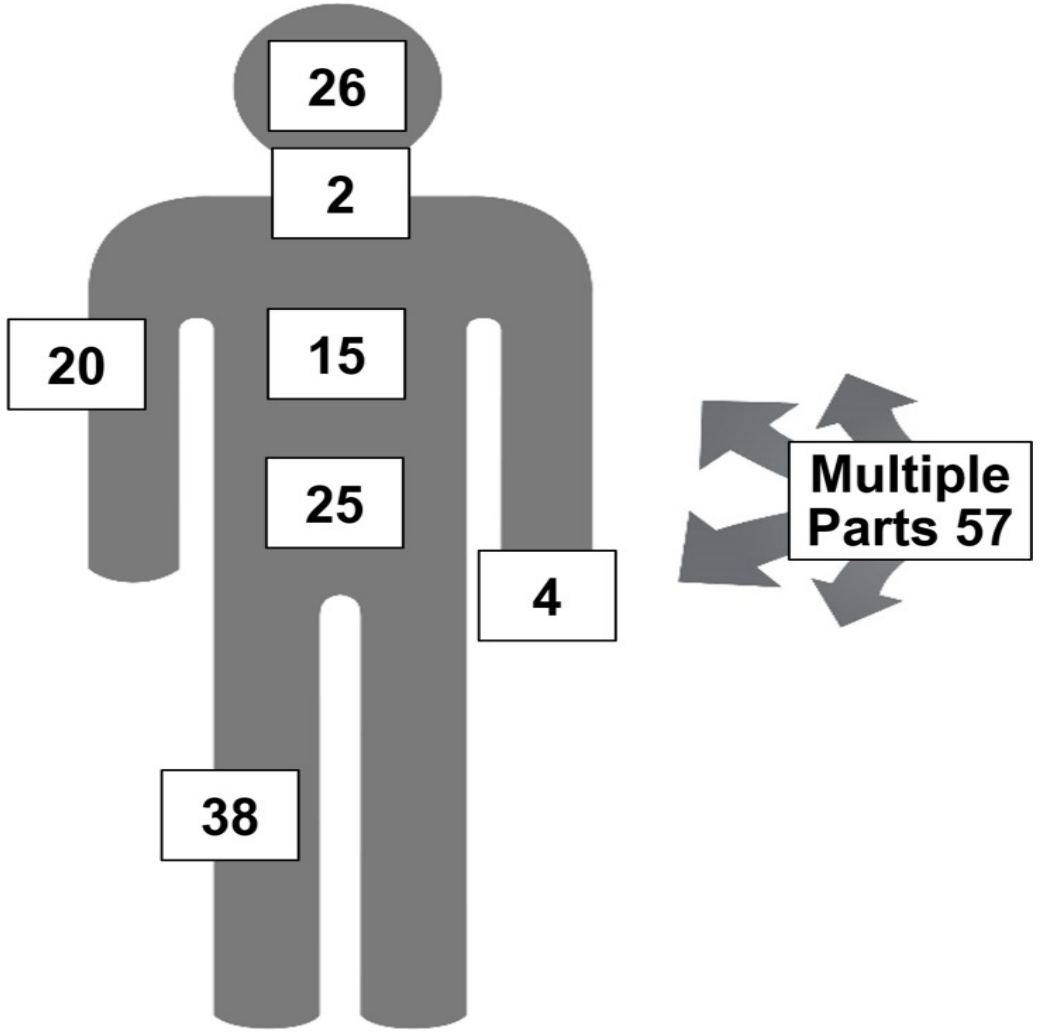
Figure 4. Rehabilitative Needs Reported to Handicap International by Four Referral Hospitals, Jan-Jul 2017



Source: Handicap International



Lafta et al (2018) Injury and death during the ISIS occupation of Mosul and its liberation: Results from a 40-cluster household survey. PLoS Med. 2018 May; 15(5): e1002567.



Variable	Number or %
Total Patient Encounters	19,784
Inpatient	41%
Outpatient	59%
Sex	
Male	45%
Female	55%
Age	
<15	32%
>15	68%
Status	
Civilian	73%
Military	27%
Injury Site	
Head	12%
Torso	13%
Extremity	32%
Multiple Sites	24%
Minor	17%
Burns	2%

Type of injury depends on the type of conflict

Sample from 4 military facilities in Afghanistan:

38% Blast injury
60% penetrating injury
39% extremity
26% head/neck

Or from Armenia 2020: 95% blast Injury. Polytrauma but more than 60% of rehab patients had limb injury.

Don’t get caught in type of injury

- We are teaching “the big 5” types of injury
- Fracture (and PNI)
- Amputation
- SCI
- TBI
- Burns

BUT: These injuries rarely occur in isolation in war – we need to consider many together.

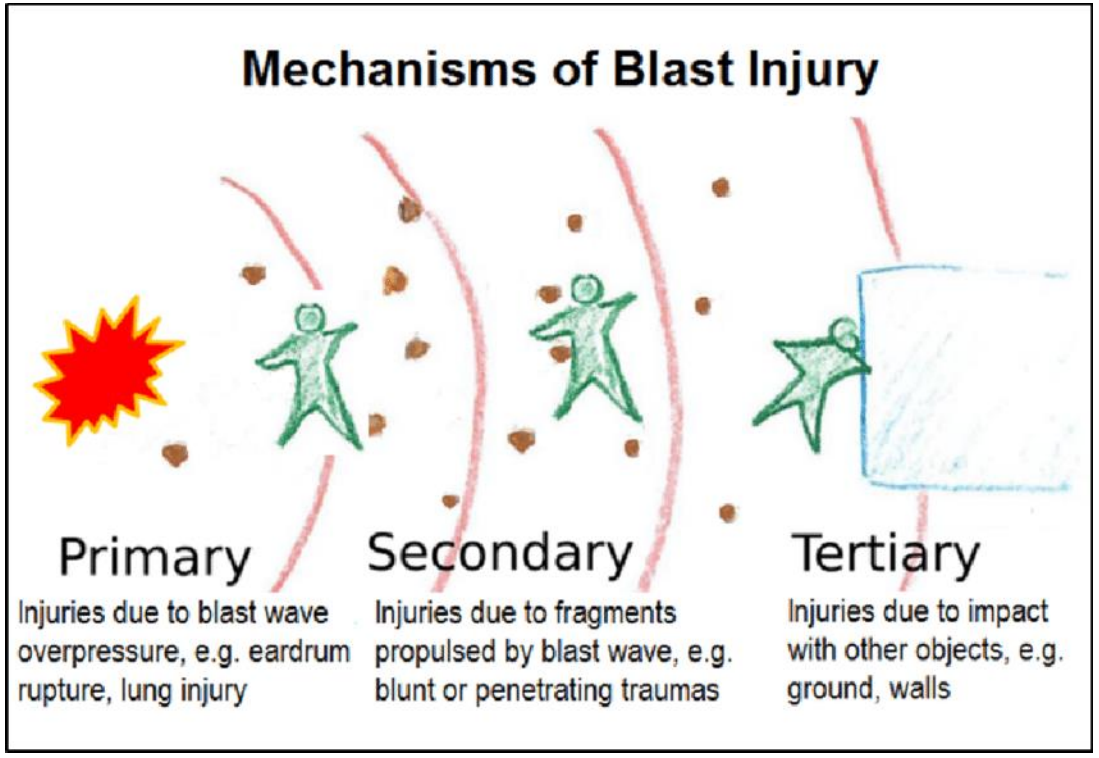
- In some conflicts rehab is getting closer to the frontline (e.g. Mosul). In others it is getting harder to deliver (e.g. Syria).
- Often no single event - waves go up and down
- Rehab Need persists – continuity of care is a challenge
- Security can be a major issue

Blast

- Watch this video:
- https://www.youtube.com/watch?v=oKFupx9x0-k

- 5 min task: Can you describe the different mechanisms of injury that may result from blast, depending on your proximity?

Blast



- Primary: Blast lung, closed neurotrauma
- Secondary: Penetrating injuries
- Tertiary: Blunt trauma
- Quaternary: Flash burns from thermal wave or fireball, inhalation injury, any other complication not caused by the above

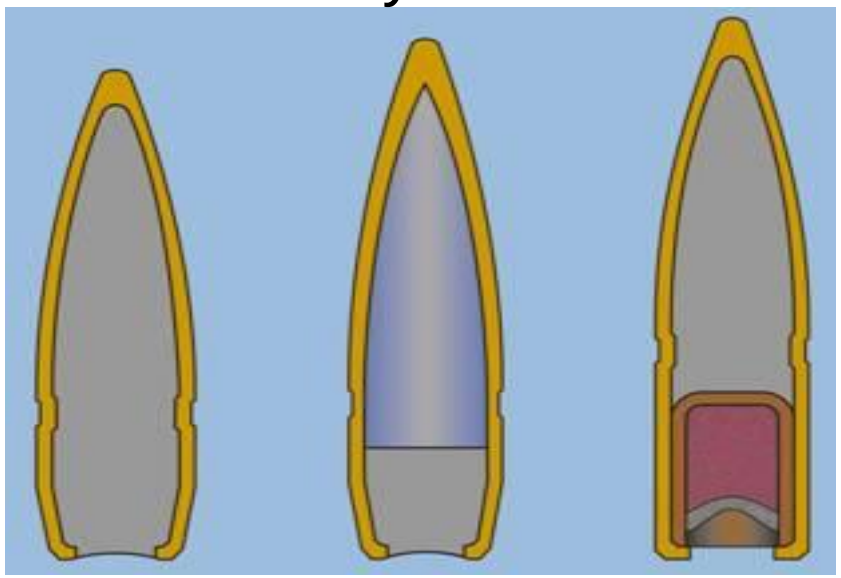
Anit-personel mines and IEDS

- IED/APM injuries are dirty, contaminated wounds resulting from the propulsion of large amounts of soil, clothing, and other organic matter upward into the wound.
- These wounds often require a level of amputation higher than what would initially appear necessary due to the blast forcing debris very deep into the tissues and underneath skin flaps that appear healthy.
- The blast can cause pressure waves within the blood and tissue column leading to venous thrombosis with subsequent compartment syndrome.
- Small APMs can result in incomplete traumatic amputation with wide and deep soft tissue injuries to the foot, These wounds often result in amputation and require meticulous debridement every 2-3 days if amputation is to be avoided.

Gun Shot Wounds: AMMUNITION TERMS

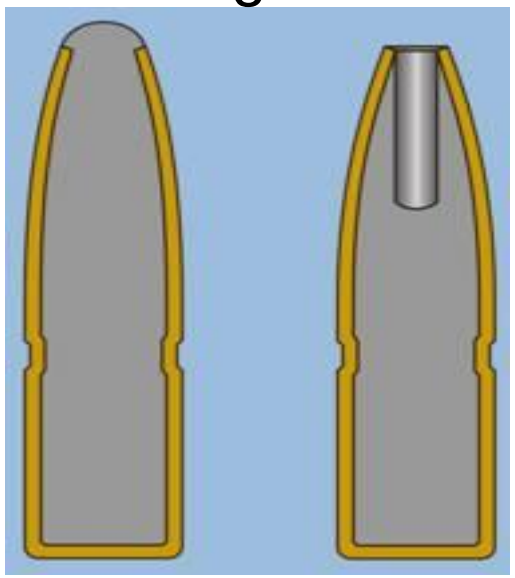
- Today's Bullets

Military bullets



FMJ Hard core Tracer

Hunting bullets



SJ SJ-HP

Gun Shot Injury

- Like civilian gunshot wounds (GSWs), military assault style weapon or handgun injuries may have exit wounds that are large, small, or absent. Munitions used during conflict are required by international law to be full metal jacketed (FMJ) rounds.
- » The FMJ rounds have a copper casing that entirely surrounds the bullet's lead core.
- » These munitions have greater penetrating power, but do not easily deform on impact with tissue.
- » A FMJ bullet impacting bone shortly after entry into the tissue will break the bone and continue on into deeper tissues. However, when a FMJ bullet ricochets or tumbles prior to impact it can cause enormous amounts of soft tissue or bony injury.
- Many civilian variants of ammunition are semi-jacketed (SJ) meaning that the lead core is not fully surrounded by the copper shell.
- » SMJ bullets can easily deform on impact causing greater tissue damage but with less penetrating power.
- This distinction is important for the limb surgeon as these different types of munitions have differing effects on bone.
- » A SJ bullet will shatter the bone completely if the impact is shallow due to the deforming nature of the bullet.
- » From the perspective of the surgeon the difference between the two types of rounds is that with SJ rounds the majority of the energy transfer is made within the first few cm of penetration into the tissue, while with a FMJ round most of the energy transfer occurs deeper in the tissue. When this occurs, a temporary cavity is created that collapses immediately hiding the internal injuries.

Session 2:

Imagine this is your home town or city, on a normal Sunday afternoon