

From ABC to X-CARE: Rethinking Combat Casualty Care Priorities During Active Warfare

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Introduction

- Conventional trauma algorithms, including ABC and MARCH prioritize early airway and breathing interventions.
- Successive conflicts in Israel have been accompanied by a shift in prehospital trauma care toward fewer airway and thoracic interventions and greater emphasis on hemorrhage control and resuscitation.

Methods

- This study combines **operational data analysis with a review of clinical practice guideline** (CPG) evolution within the IDF Medical Corps (MC). Casualty data from the Swords of Iron War were analyzed to characterize injury patterns and potentially preventable causes of death. Changes in IDF-MC-CPGs implemented between 2023–2025, including airway management, thoracic interventions and resuscitation strategies were reviewed.

Results

- Between October, 2023 and October, 2025, 6,165 casualties were treated by the IDF-MC.
- Injuries were mainly caused by explosions (54.7%), followed by firearms (13%) and blunt mechanisms (12%).
- Body regions of injury are presented in figure 1.

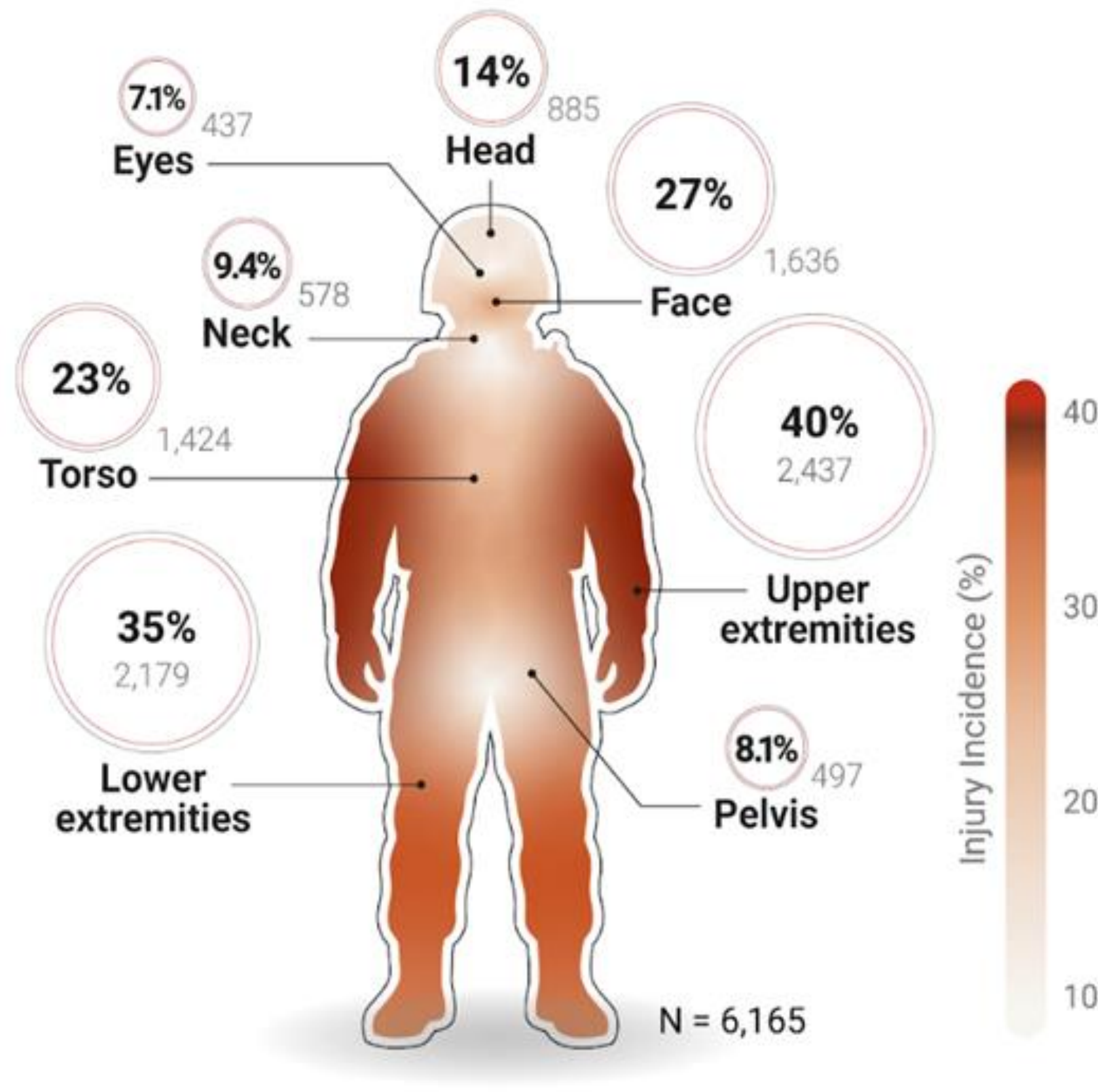


Figure 1. Anatomical distribution of injuries among the study population

Case Under Fire	X	Execution of 'Extract-Treat' drill or 'Casualty Under Fire' combat technique: 1 □ Declare a casualty under fire on the ground and over the radio □ Achieve fire superiority □ Move to initial cover via self-extraction or designated force □ Halt massive hemorrhage independently or by a nearby combatant /medical provider
		□ Arrive at a secured/safe environment □ Rapid initial impression – HCU, visual inspection, verbal triage, urgency □ Operational reporting – addressee, identity, incident description, location, casualty count, evac urgency
Primary Survey	C	□ Halt massive hemorrhage, if done by prior echelon → verify bleeding controlled □ Search for injuries & sources of hemorrhage in the torso, extremities, and concealed areas while performing log-roll and exposure – head, chest, nape of the neck, armpits, back, flanks, buttocks, and groins – halt identified hemorrhage
		Clinical Assessment: □ Check level of consciousness according to AVPU □ Apnea or no response to pain → perform J1 and insert AW □ Direct airway trauma – clear secretions and position sitting up □ Measure BP 2 □ Qualitative and quantitative pulse measurement □ Measure oxygen saturation
Secondary Survey	A	□ In profound shock → direct the team to achieve access to the circulatory system and prepare blood products 3, 4 □ Continued execution of the protocol by the senior medical provider □ Interventions are to be performed solely by medics at this stage
		Evacuation □ Report medical status based on operational status and air-exits □ Prior to evacuation perform team situation assessment and □ Coordinate medical support team situation assessment and □ Coordinate medical support team situation assessment and
Airway	R	□ Reassess AW and respiratory distress via verbal contact and inspection □ Use basic measures for AW management: 1 □ Open the mouth and clear secretions □ Position sitting up □ Supplemental oxygen 2 □ Apnea → ventilate via BVM and mask □ Suspected injury → maintain c-spine stabilization □ Expose chest and evaluate for signs of trauma
		□ Verify full exposure and log-roll – locate all injuries, halt bleeding if found □ Head – evaluate for signs of trauma 2 □ C-spine – suspected injury → apply cervical collar 3, 4 □ Pelvis – assessment and perform pelvic binding 3, 4 □ Cover, warm, and load onto litter □ Status assessment – summarize findings, define evac urgency, provide team directives □ Transmit medical report and complete digital/manual 101 form
Respiration	E	□ Expose chest, undrape □ Full exposure not translatable zones □ Head – evaluate for signs of trauma □ C-spine – apply collar to suspected injury □ Assess pelvis and decide on binder □ Cover and fire □ Summary of findings – add evac urgency and □ Transmit medical report
		Exposure & Evacuation

Secondary Survey	Circulation	C	□ Assess shock and continue volume resuscitation for casualties in profound shock 1 □ Achieve vascular access and stabilize 2 □ Administer TXA 3 □ Reassess and convert arterial tourniquets □ Stabilize and apply traction for femur fracture via Thomas splint 4 □ Complete second peripheral IV line in casualties requiring volume resuscitation
			□ Reassess AW and manage conservatively 2 or via intervention 3
	Airway	R	□ Supplemental oxygen 2 □ In ventilated casualty, connect to ventilator and prepare maintenance anaesthetics 3 □ Insert chest tube for ventilated chest casualty only if necessary 4
	Respiration		□ Assess pain and manage 2 □ Prevent infection – Bath wounds, dress, antibiotic treatment 3 □ Assess GCS, evaluate extremity movement, perform pupillary examination 3 □ Full physical scan from head to toes – treat any injury identified along the way □ Stabilize fractures □ Verify all stabilizations/splints □ Complete documentation on a digital/manual 101 form □ Assess for combat stress reaction and perform "YAHALOM" intervention □ Transmit updated medical report
Everything Else	E	□ Monitor and document vital signs frequently and cyclically □ Insert chest tube for spontaneously breathing chest casualty with respiratory deterioration 3 □ Repeated administration of IV pharmacological treatment 3 □ Insert urinary catheter; insert nasogastric tube for gastric decompression in ventilated casualties 3 □ Prevent pressure ulcers	
		Continuous Care	
PFC	E	□ To be excluded solely in the presence of a senior medical provider □ To be excluded solely in the presence of an indication, see relevant chapter	
		Teamwork is of paramount importance for the parallel execution of the protocol stages, with emphasis on hemodynamic assessment and administration of blood products	
Example of Protocol Execution in Teamwork			
Medic 1			
• Arrive at secured environment • Operational report and evac urgency • Measure BP • Pulse oximetry – pulse and SpO2 • Apnea – ventilate via BVM and mask • Profound shock – Tourniquet, chest tube and administer blood products • Full exposure not translatable zones • Apply pelvic binder if necessary • Cover, warm, load and secure on litter • Complete 101 form			
Senior Medical Provider (SMP)			
• Report initial impression • Halt massive hemorrhage • Search for bleeding sources not log-roll • Clinical assessment (GCS), breathing, AV • Trauma exam, BVM, SpO2 • Assess for profound shock and decide on blood products • Assess AW and respiratory status • Suspected injury – basic AW management • Apnea – ventilate via BVM and mask • Measure c-spine stabilization • Continence assessment if available – catheter assessment and report • Expose chest, undrape • Full exposure not translatable zones • Head – evaluate for signs of trauma • C-spine – apply collar to suspected injury • Assess pelvis and decide on binder • Cover and fire • Summary of findings – add evac urgency and • Transmit medical report			

Figure 2. The unified IDF MC's protocol for single casualty care

Conclusions

- In April 2024, airway and thoracic interventions were reduced, including removal of needle thoracostomy and restriction of chest tube placement to ventilated casualties or prolonged evacuation scenarios. In July 2024, thoracic decompression during resuscitation was removed.
- These lessons informed the X-CARE framework – figure 2.
- A circulation-first, hemorrhage-focused paradigm represents an evolution in battlefield trauma care.
- This experience demonstrates that combat casualty care frameworks can be adapted and implemented during ongoing active conflict.



Disclaimer: This study was performed as part of the Israel Defense Forces Trauma and Combat Medicine Branch effort to improve the quality of combat casualty care and received no external funding or support.



At the moment of truth,
IDF MEDICAL CORPS.