

Revised Prehospital Airway Strategy Prioritizing Rapid Evacuation and Clinical Outcomes in the Swords of Iron War

CPT Gal Khanchin, MD

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Disclosure

- CPT Gal Khanchin, MD has no conflict to report.
- 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.



Previous IDF -MC airway management CPG's

Up to 2019



GCS < 8

2019 - 2024



**Airway
Obstruction**



Oxygenation

**SpO₂ <
88%**



The IDF protocol for airway management was revised during the Swords of Iron war – April 2024



1. Severe Anatomy Destruction

Severe face or neck anatomy destruction characterized by:

- > Maxillary fracture blocking the nasopharynx
- > Bilateral mandibular fracture blocking the oropharynx
- > Direct trauma to the larynx or trachea

OR



2. No improvement in o2 sat. with conservative treatment

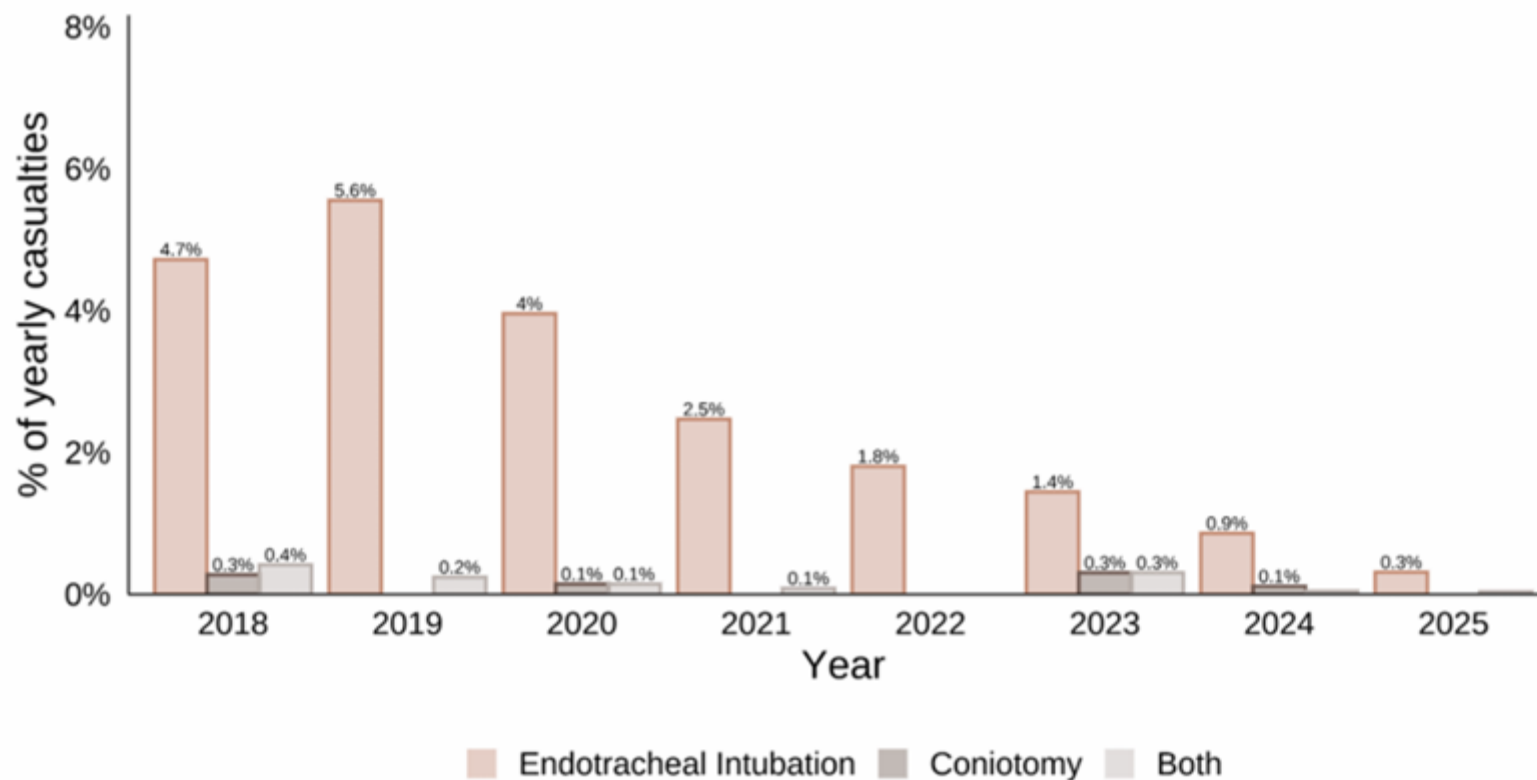
A casualty with decreased oxygen saturation (**below 88%**) who cannot maintain a steady saturation level (regardless of the value) despite conservative interventions.

Conservative Interventions:

- ✓ Up-right position
- ✓ Treatment with oxygen via mask
- ✓ Ventilation with a bag-valve mask (connected to oxygen)

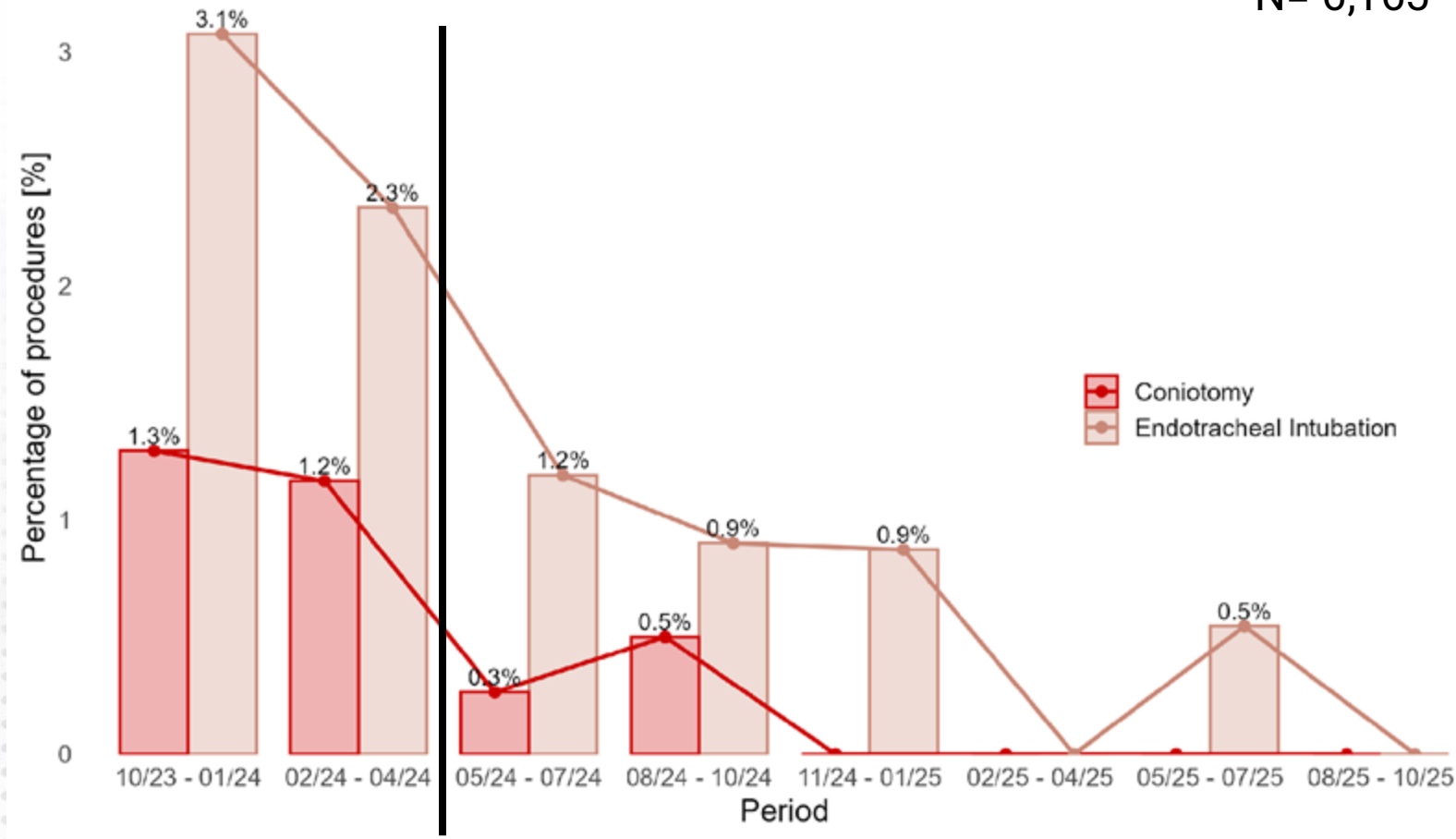


Airway Intervention Rate 2018-2025



Airway Intervention Rate During Swords of Iron War

N= 6,165



Guideline Update



Study Objective

To evaluate the effects of revised airway management protocol on clinical outcomes



Methods



Study Design

A retrospective cohort study conducted among combat casualties during the war.

- ✓ Compared outcomes before and after protocol revision
- ✓ Included prehospital interventions
- ✓ Data from IDF trauma registry and national trauma registry

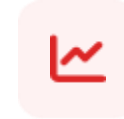
📅 **Oct 27, 2023 – Jul 31, 2025**



Inclusion & Data

Included casualties meeting the pre-revision indications for airway intervention.

- Recorded prehospital O₂ sat. < 88%
- Diagnoses of head and neck injuries
- Smoke inhalation with impending airway



Outcome Measures

Key metrics evaluated upon Emergency Department (ED) admission and during hospitalization.

- ➔ Evacuation times
- ➔ Airway interventions and O₂ sat. levels upon ED arrival
- ➔ Intensive Care Unit (ICU) length of stay
- ➔ Mortality

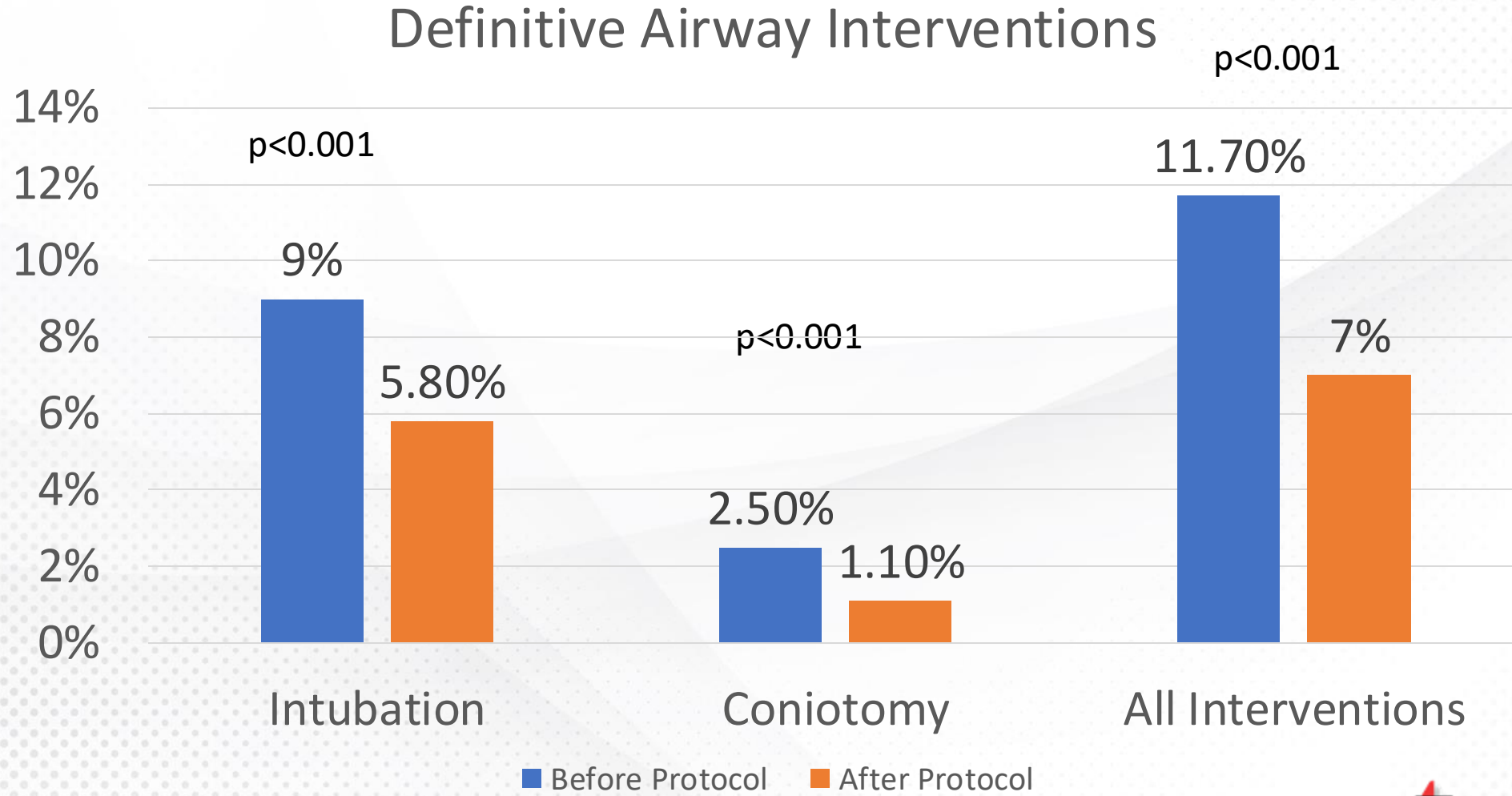


Results

Total cohort N= 6,165

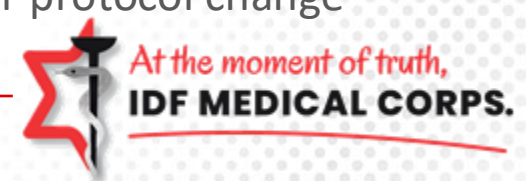
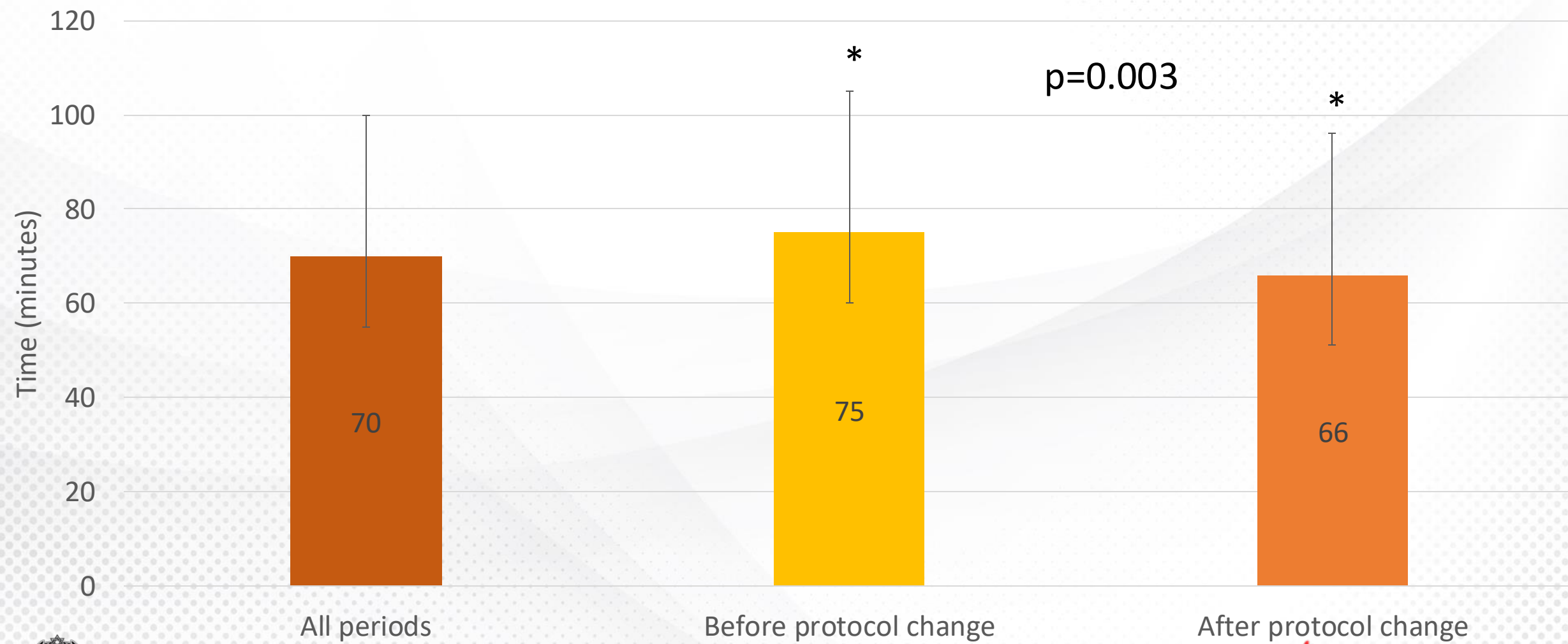


Results



Results

Median evacuation times to hospital (minutes)



Results



Injury Characteristics

- = **Injury Severity:** Both cohorts presented with comparable severity scores.
- = **Anatomical Site:** The distribution of injury locations remained consistent between groups.



Clinical Outcomes

- = **Recorded O₂ Saturation :** No significant difference in Emergency Department (ED) oxygen saturation upon arrival.
- = **Airway Interventions:** No difference in ED airway interventions required upon hospital admission.
- = **ICU Length of Stay:** No difference in intensive care unit duration.
- = **Mortality Rates:** No difference in overall mortality



Discussion & Limitations



Retrospective Design

The retrospective nature of the study design limits absolute causal inference regarding specific clinical decisions.



Potential Confounders

Results may be influenced by the changing nature of the conflict, varying geographic locations, and shifting injury patterns.



Registry Errors

Inherent documentation and registry errors might occur due to the chaotic nature of active combat medicine.



Generalizability

Influences on military combat medicine besides pure clinical reasoning might affect the generalizability to civilian EMS.



Take Home Message

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Performing fewer definitive airway interventions in the field is associated with shorter evacuation time without worsening outcomes

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Thank you



At the moment of truth,
IDF MEDICAL CORPS.

