


JTACS AUGUST TABLE OF CONTENTS

'BEST OF' AUGUST ARTICLES

BEST OF TRAUMA ARTICLE

Contemporary Management and Outcomes of Penetrating Colon Injuries: Validation of the 2020 AAST Colon Organ Injury Scale

<p>Study Population</p> <p>Penetrating Colon Injury</p>  <p>AIS < 3 outside abdomen</p> <p>2016-2020</p> <p>12 Level-I trauma centers</p>	<p>Patient Characteristics</p> <p>11% grade-V injury 19% required ≥6 units 24% ISS-15 42% moderate-to-large contamination</p> <p>Clinical Outcomes</p> <p>No difference in complications between anastomosis and ostomy</p> <p>Open abdomen was associated with Infectious and non-Infectious complications</p>	<p>AAST OIS Validation</p> <p>Increasing grade was highly associated with higher rate of ostomy and infectious complications</p> <p>Imaging grade did NOT correlate with operative findings nor outcomes</p>
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The Journal of Trauma and Acute Care Surgery
Zeineddin A et al. Journal of Trauma and Acute Care Surgery. DOI: 10.1097/TA.0000000000003969
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CONTEMPORARY MANAGEMENT AND OUTCOMES OF PENETRATING COLON INJURIES: VALIDATION OF THE 2020 AAST COLON ORGAN INJURY SCALE
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/CONTEMPORARY-MANAGEMENT_AND_OUTCOMES_OF_8.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/contemporary-management-and-outcomes-of-8.aspx)



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<https://qr.page/g/mOOu6dGonn>

Automating Partial REBOA Reduces Blood Loss And Hypotension In A Highly Lethal Porcine Liver Injury Model

<p>Paradigm Shift: Automating REBOA to adapt to patient physiology</p> <p>Which Automation Method is Best?</p> <p>Automated Partial (pREBOA) Automated Intermittent (iREBOA) Control (transfusion only)</p>	<p>N=24 90-min of intervention</p> <p>Damage Control & Critical Care</p>	<p>5/8 controls died rapidly</p> <p>Hypotension Time MAP < 50 pREBOA < iREBOA p<0.001</p> <p>Transfusion Requirements pREBOA < iREBOA p=0.01</p> <p>Abdominal Hemorrhage Vol. pREBOA < iREBOA p=0.04</p> <p>Automated pREBOA delivers superior precision hemodynamic support for truncal hemorrhage</p>
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The Journal of Trauma and Acute Care Surgery
Cambronero GE and Sanin GD et al. Journal of Trauma and Acute Care Surgery. DOI: 10.1097/TA.0000000000003962
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AUTOMATED PARTIAL REBOA REDUCES BLOOD LOSS AND HYPOTENSION IN A HIGHLY LETHAL PORCINE LIVER INJURY MODEL
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/AUTOMATED-PARTIAL-RESUSCITATIVE-ENDOVASCULAR.7.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/automated-partial-resuscitative-endovascular.7.aspx)



SCAN HERE TO VIEW A VIDEO OVERVIEW OF THE ARTICLE

<https://qr.page/g/fYIYuAUIp>

BEST OF SCC ARTICLE

Whole blood transfusion in the treatment of acute hemorrhage: a systematic review and meta-analysis.

<p>Background</p> <p>Objective To evaluate the effectiveness of whole blood (WB) ± blood components (BCT) as compared to BCT in the treatment of traumatic hemorrhage</p> <p>Population Adult military and civilian patients with traumatic hemorrhage</p> <p>Outcomes Early mortality (3h, 4h, 6h, ED) 24h mortality Late mortality (28d, 30d, in-hospital)</p>	<p>Methods</p> <p>Search Records identified through database searching: 7150</p> <p>Screening Records after duplicates removed: 5115</p> <p>Eligibility Full text articles assessed for eligibility: 131</p> <p>Included Studies included in qualitative synthesis: 44 Studies included in quantitative synthesis (meta-analysis): 27</p>	<p>Results</p> <p>Meta-analysis Civilian studies n=20 WB: n = 4381 BCT: n = 17761 Military studies n=7</p> <p>• Civilian patients had lower odds on early and 24-hours mortality</p> <p>• WB transfusion resulted in higher plt:RBC and plasma:RBC ratios</p>
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The Journal of Trauma and Acute Care Surgery
Van der Horst RA A et al. Journal of Trauma and Acute Care Surgery. DOI: 10.1097/TA.0000000000003969
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WHOLE BLOOD TRANSFUSION IN THE TREATMENT OF ACUTE HEMORRHAGE, A SYSTEMATIC REVIEW AND META-ANALYSIS
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/WHOLE-BLOOD-TRANSFUSION_IN_THE_TREATMENT_OF_ACUTE.14.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/whole-blood-transfusion-in-the-treatment-of-acute.14.aspx)



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<https://qr.page/g/6mJi6qJnlm>

BEST OF BASIC SCIENCES ARTICLE

Catastrophic Health Expenditure in Non-Neurological Injury due to Motor Vehicle Crash

Risk of CHE = Total Hospital Charges \geq 40% of post-subsistence income

National Inpatient Sample 2014-2017

Non-Neurologic Injury from MVC Age 26-64

Hospitalization + Charges

10% CHE Risk of privately insured patients
Black
Hispanic
Low Income Level

90% CHE Risk of uninsured patients

Nishtala MV et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000003953

The Journal of Trauma and Acute Care Surgery

CATASTROPHIC HEALTH EXPENDITURE IN NON-NEUROLOGICAL INJURY DUE TO MOTOR VEHICLE CRASH
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/CATASTROPHIC_HEALTH_EXPENDITURE_IN_NONNEUROLOGICAL.2.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/catastrophic_health_expenditure_in_nonneurological.2.aspx)

UP AND OVER: CONSEQUENCES OF RAISING THE US-MEXICO BORDER WALL HEIGHT

US-Mexico border wall in San Diego increased from 10 to 30 feet in December 2019

Admissions up 950% since 2016

Record numbers of injured migrant patients due to increased height

How does height affect fall-related trauma admissions and cost?

\$83 million in healthcare costs

Legislators and healthcare providers must address this crisis at the border

Marshall WA et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000003970

The Journal of Trauma and Acute Care Surgery

UP AND OVER: CONSEQUENCES OF RAISING THE US-MEXICO BORDER WALL HEIGHT
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/UP_AND_OVER_CONSEQUENCES_OF_RAISING_THE_UNITED.9.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/up_and_over_consequences_of_raising_the_united.9.aspx)

FasterRib: A Deep Learning Algorithm to Automate Identification and Characterization of Rib Fractures on Chest Computed Tomography Scans

Predicting Rib Fractures

Beyond presence, manually characterizing on chest CT scans is cumbersome

Objective: Automate precise localization and percent displacement computation of rib fractures

FasterRib Architecture

Results: 95% Recall, 90% Precision, 92% F1 Internally and externally validated. Code publicly-available for adaptation

Edmadaka S et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000003913

The Journal of Trauma and Acute Care Surgery

FASTERRIB: A DEEP LEARNING ALGORITHM TO AUTOMATE IDENTIFICATION AND CHARACTERIZATION OF RIB FRACTURES ON CHEST COMPUTED TOMOGRAPHY SCANS
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/FASTERRIB_A_DEEP_LEARNING_ALGORITHM_TO_AUTOMATE.3.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/fasterrib_a_deep_learning_algorithm_to_automate.3.aspx)

Impact of an Opioid Use Disorder Consult Service on Hospitalized Trauma Patients with Opioid Use Disorder

Opioid use disorder (OUD):

- Common in trauma patients
- Associated with higher rates of care utilization
- Hospitalization can be an opportunity to engage patients in treatment

OID Consult Service:

- Evidence-based OUD treatment
- Linkage to outpatient OUD care

OUD Consult Service:

- Increased rates of medications for OUD (OR = 2.09, P<.001)
- Increased rates of trauma follow-up (OR = 1.76, P=.02)
- Did not increase acute care utilization

Muller M et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000003965

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IMPACT OF AN OPIOID USE DISORDER CONSULT SERVICE ON HOSPITALIZED TRAUMA PATIENTS WITH OPIOID USE DISORDER
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/IMPACT_OF_AN_OPIOID_USE_DISORDER_CONSULT_SERVICE.10.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/impact_of_an_opioid_use_disorder_consult_service.10.aspx)

BEST OF SURGICAL CRITICAL CARE

Characterization of Fatal Blunt Injuries Using Post-Mortem Computed Tomography

Study Population: Blunt Trauma Decedents 9-year retrospective review

Pre-Hospital Arrest (n=62) vs Trauma Bay Arrest (n=18)

Equipoise for blunt agonal resuscitation algorithm

Mandatory chest decompression in all blunt agonal patients

Mandatory video/direct laryngoscopy to confirm airway placement

High rate of misplaced airway devices

High rate of pneumothoraces

Levin JH et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000004012

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CHARACTERIZATION OF FATAL BLUNT INJURIES USING POST-MORTEM COMPUTED TOMOGRAPHY
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/CHARACTERIZATION_OF_FATAL_BLUNT_INJURIES_USING.4.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/characterization_of_fatal_blunt_injuries_using.4.aspx)

Evaluation of Novel Hemostatic Agents: A Coagulopathic Swine Model of Junctional Hemorrhage

How do next generation hemostatic agents compare to the current military standard, Combat Gauze, in a "worst-case scenario?"

7 novel hemostatic agents were compared to Quick Clot Combat Gauze in a swine model with arterial junctional hemorrhage

Comparable outcomes compared to the standard military dressing. Similar results in terms of overall survival, blood loss, and re-bleeding rates

Gerling K et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000004071

The Journal of Trauma and Acute Care Surgery

EVALUATION OF VASCULAR REPAIR BY TISSUE-ENGINEERED HUMAN ACELLULAR VESSELS OR EPTFE GRAFTS IN A PORCINE MODEL OF LIMB ISCHEMIA AND REPERFUSION
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/EVALUATION_OF_VASCULAR_REPAIR_BY_TISSUE_ENGINEERED.11.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/evaluation_of_vascular_repair_by_tissue_engineered.11.aspx)

BEST OF TRAUMA ARTICLE

The Impact of Prehospital Whole Blood on Hemorrhaging Trauma Patients: A Multi-Center Retrospective Study

Patients Who Underwent Transfusion in Trauma Bay (n=1562)

Pre-Hospital Whole Blood (pWB) Recipients (n=171) vs Pre-Hospital Non-Whole Blood(non-pWB) Recipients (n=1391)

pWB Patients Had:

- Median Change in SI -0.04 vs. +0.05 (p<0.01)
- Less Crystalloid Resuscitation -0.04 vs. +0.05 (p<0.01)
- >10U in 24h: 22.6% vs. 32.4%, p=0.01

Predictors of Reduction in Shock Index on Multivariate Analysis:

- pWB OR 1.55 (95% CI 1.07-2.23, p=0.04)
- ISS 0.99 (95% CI 0.98-0.99, p=0.04)

Conclusion: pWB is Independently Associated with Reduction in Shock Index

Braverman MA et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000003908

The Journal of Trauma and Acute Care Surgery

THE IMPACT OF PREHOSPITAL WHOLE BLOOD ON HEMORRHAGING TRAUMA PATIENTS: A MULTI-CENTER RETROSPECTIVE STUDY
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/THE_IMPACT_OF_PRE-HOSPITAL_WHOLE_BLOOD_ON_HEMORRHAGING.5.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/the_impact_of_pre-hospital_whole_blood_on_hemorrhaging.5.aspx)

Access to Trauma Center Care: A Statewide System-Based Approach

METHODS: Prehospital deaths in five states were analyzed via a trauma system model including GEMS, HEMS and trauma center locations and incorporating GIS and traffic and census block data to determine population access to care and ideal locations for level I-II trauma centers

RESULTS: Of 23 million residents in the five states studied, 87% had access to level I-II centers and 96% to level I-V centers within one hour. Optimized addition of level I-II centers could improve access to high level trauma care to 92%.

CONCLUSION: While there is nearly universal access to level I-V trauma care within an hour, gaps exist in the provision of level I-II care for the most severely injured. A robust approach highlights need for national trauma care system.

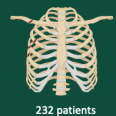
Medrano NW et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.0000000000004002

The Journal of Trauma and Acute Care Surgery

ACCESS TO TRAUMA CENTER CARE: A STATEWIDE SYSTEM-BASED APPROACH
[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/ACCESS_TO_TRAUMA_CENTER_CARE_A_STATEWIDE.12.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/access_to_trauma_center_care_a_statewide.12.aspx)

In patients with combined clavicle and multiple rib fractures, does fracture fixation of the clavicle improve clinical outcomes? A multicenter prospective cohort study of 232 patients

Study population:
Patients with multilevel (≥3) rib fractures and concomitant clavicle fractures



232 patients
52 clavicle fixation, 180 nonoperative

Clavicle fracture fixation versus nonoperative treatment of the clavicle

Propensity score matched analysis (1:1 matching)

No differences in hospital length of stay, pain, complications or quality of life

Hoeppelman RJ et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/JA.0000000000004001

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IN PATIENTS WITH COMBINED CLAVICLE AND MULTIPLE RIB FRACTURES, DOES FRACTURE FIXATION OF THE CLAVICLE IMPROVE CLINICAL OUTCOMES? A MULTICENTER PROSPECTIVE COHORT OF 232 PATIENTS


[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/IN_PATIENTS_WITH_COMBINED_CLAVICLE_AND_MULTIPLE.13.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/in_patients_with_combined_clavicle_and_multiple.13.aspx)

The Impact of Time to Hemostatic Intervention and Delayed Care for Patients with Traumatic Hemorrhage: A Systematic Review

Uncontrolled bleeding is a common cause of mortality in trauma




Objective impacts of delay to hemostasis remain incompletely explored



Aim: Quantify impact of delayed hemostasis on mortality and consolidate definitions of delay

Studies comparing time to hemostatic intervention (OR or IR) for adults with blunt or penetrating injury



24 studies with 10,168 patients included

69.6% showed a statistically significant impact of increased time to OR/IR on mortality

Definitions of Delay: From 10 min up to 4 hours

Literature is heterogeneous in terms of injuries included, methodology, and durations of delay examined

Unclear if the Golden Hour applies in today's context

Need additional studies with rigorous control of confounding and standardization to move beyond intuitive idea that "faster is better"

Lamb T et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/JA.0000000000003976

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THE IMPACT OF TIME TO HEMOSTATIC INTERVENTION AND DELAYED CARE FOR PATIENTS WITH TRAUMATIC HEMORRHAGE: A SYSTEMATIC REVIEW

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/THE_IMPACT_OF_TIME_TO_HEMOSTATIC_INTERVENTION_AND.15.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/the_impact_of_time_to_hemostatic_intervention_and.15.aspx)

Understanding the Burden of Traumatic Injuries at the United States-Mexico Border: A Scoping Review of the Literature

Limited Literature On:

- Falls from height
- Environmental exposures
- Drownings
- Mass casualty events
- Pediatric trauma
- Border patrol injuries



BRDR-T Consortium Trauma Centers

Knowledge Gaps in Border Trauma:

- Pre-hospital deaths
- Magnitude of drownings
- Wildlife related injuries
- Pediatric & border patrol injuries
- Social & financial burdens
- Long term outcomes and impact
- Health care utilization
- Efficacy of prevention efforts

Keller BA et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/JA.0000000000003920

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UNDERSTANDING THE BURDEN OF TRAUMATIC INJURIES AT THE UNITED STATES-MEXICO BORDER: A SCOPING REVIEW OF THE LITERATURE

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/UNDERSTANDING_THE_BURDEN_OF_TRAUMATIC_INJURIES_AT.16.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/understanding_the_burden_of_traumatic_injuries_at.16.aspx)

Advances in Trauma Care to Save Lives From Traumatic Injury: A Narrative Review

Prehospital scene



Forward scene Transfusion
Temporary bridge to hemostasis

Whole blood transfusion
Hybrid Emergency Room
Simultaneous Multisystem Surgery
Trauma Induced Coagulopathy
Traumatic Endotheliopathy management

Intensive care unit Stay

Trauma induced immunosuppression diagnosis and treatment
Multi Organ Failure
Predict patient's own course

Schmitt J et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/JA.0000000000003960

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ADVANCES IN TRAUMA CARE TO SAVE LIVES FROM TRAUMATIC INJURY: A NARRATIVE REVIEW


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The AAST-ESTES® Emergency Surgery Course: Initial Experience in Japan

AAST-ESTES® Emergency Surgery Course in Japan



Post course evaluation





Japanese surgeons gave the AAST-ESTES ESC® course excellent ratings, suggesting its crucial role in Japan.

Morishita K et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/JA.0000000000003995

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THE AAST-ESTES EMERGENCY SURGERY COURSE: INITIAL EXPERIENCE IN JAPAN



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Validating the Modified Brain Injury Guidelines (mBIG)


TBI uses vast healthcare resources. The mBIG may improve resource utilization



A multicenter evaluation of the safety and efficacy of the mBIG was performed

The mBIG are safe and lead to improvements in resource utilization when implemented



Khan et al. *Journal of Trauma and Acute Care Surgery*. February 2022

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INCORPORATION OF A ROBOTIC SURGERY TRAINING CURRICULUM IN ACUTE CARE SURGICAL FELLOWSHIP

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/INCORPORATION_OF_A_ROBOTIC_SURGERY_TRAINING.21.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/incorporation_of_a_robotic_surgery_training.21.aspx)

NO VISUAL ABSTRACT PROVIDED

DEFECTS IN VEIN VALVE PROX1/FOXC2 ANTITHROMBOTIC PATHWAY IN ENDOTHELIAL CELLS DRIVES THE HYPERCOAGULABLE STATE INDUCED BY TRAUMA AND CRITICAL ILLNESS

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/DEFECTS_IN_VEIN_VALVE_PROX1_FOXC2_ANTITHROMBOTIC.6.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/defects_in_vein_valve_prox1_foxc2_antithrombotic.6.aspx)

NO VISUAL ABSTRACT PROVIDED

PREHOSPITAL AND EMERGENCY DEPARTMENT PEDIATRIC READINESS FOR INJURED CHILDREN: A STATEMENT FROM THE AMERICAN COLLEGE OF SURGEONS COMMITTEE ON TRAUMA EMS COMMITTEE

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/PREHOSPITAL_AND_EMERGENCY_DEPARTMENT_PEDIATRIC.20.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/prehospital_and_emergency_department_pediatric_readiness_for_injured_children.20.aspx)

NO VISUAL ABSTRACT PROVIDED

INCORPORATION OF A ROBOTIC SURGERY TRAINING CURRICULUM IN ACUTE CARE SURGICAL FELLOWSHIP

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2023/08000/INCORPORATION_OF_A_ROBOTIC_SURGERY_TRAINING.21.ASPX](https://journals.lww.com/jtrauma/fulltext/2023/08000/incorporation_of_a_robotic_surgery_training.21.aspx)