

JTACS JULY TABLE OF CONTENTS

'BEST OF' JULY ARTICLES

BEST OF TRAUMA ARTICLE

Don't Forget the Platelets: The Independent Impact of RBC: PLT Ratio on Mortality in Massively Transfused Trauma Patients

Population
The ACS-TQIP dataset years 2013-2018 was used
Adult trauma patients receiving massive transfusion (≥10 RBC units/24-hours) were included
9,215 patients were analyzed

Definitions
Blood products received within 24-hours
Balanced Transfusion RBC:PLT2 & RBC:FFP 5:2
Unbalanced FFP RBC:PLT2 & RBC:FFP2
Unbalanced PLT RBC:PLT2 & RBC:FFP2
Unbalanced FFP & PLT RBC:PLT2 & RBC:FFP2

Prevalence of Unbalanced PLT
Prevalence of unbalanced PLT (21.1%) was higher than unbalanced FFP (12.6%) ($p < .001$)

Interventions
- Tranexamic Acid
- Aminocaproic Acid
- Aprotinin
- Normal Saline

Outcomes
• TXA improves the cerebral but not systemic inflammatory response
• Amicar may be detrimental after TBI with elevated neuroinflammation
• Aprotinin may modulate the inflammatory response to TBI

Future Directions
• Evaluate these antifibrinolytics in a combined TBI/hemorrhage model

Dorken Gallastegi et al.
Journal of Trauma and Acute Care Surgery, January 2021
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DON'T FORGET THE PLATELETS: THE INDEPENDENT IMPACT OF RBC: PLT RATIO ON MORTALITY IN MASSIVELY TRANSFUSED TRAUMA PATIENTS

https://journals.lww.com/jtrauma/Fulltext/2022/07000/Do_not_forget_the_platelets_The_independent.4.aspx



SCAN HERE TO VIEW A VIDEO OVERVIEW OF THE ARTICLE

<https://qr.page/g/1qGfU2Vwlf>

Effects of Anti-Fibrinolytic Therapy on Systemic and Neuroinflammation after Traumatic Brain Injury

Murine TBI

Interventions
- Tranexamic Acid
- Aminocaproic Acid
- Aprotinin
- Normal Saline

Outcomes
• TXA improves the cerebral but not systemic inflammatory response
• Amicar may be detrimental after TBI with elevated neuroinflammation
• Aprotinin may modulate the inflammatory response to TBI

Future Directions
• Evaluate these antifibrinolytics in a combined TBI/hemorrhage model

Wallen et al. Journal of Trauma and Acute Care Surgery, July 2022 [10.1097/JTA.0000000000003607]
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EFFECTS OF ANTIFIBRINOLYTICS ON SYSTEMIC AND CEREBRAL INFLAMMATION AFTER TRAUMATIC BRAIN INJURY

https://journals.lww.com/jtrauma/Fulltext/2022/07000/Effects_of_antifibrinolytics_on_systemic_and.5.aspx



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<https://qr.page/g/20Wo40ARqpY>

BEST OF SCC ARTICLE

Creeping Mortality: Defining a Plateau in Ongoing Massive Transfusion

Population
Trauma Patients Transfused ≥ 1 Unit

Interventions
Mortality Crest @ 4 Hours ≈ 40 Units (All Blood Products)
Resuscitation Time Out

Outcomes
Creeping Mortality

Quintana MT et al. Journal of Trauma and Acute Care Surgery, Month 2022 [10.1097/JTA.0000000000003641]
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CRESTING MORTALITY: DEFINING A PLATEAU IN ONGOING MASSIVE TRANSFUSION

https://journals.lww.com/jtrauma/Fulltext/2022/07000/Creeping_mortality_Defining_a_plateau_in_ongoing.7.aspx



SCAN HERE TO VIEW A VIDEO OVERVIEW OF THE ARTICLE

<https://qr.page/g/3alOdwPYgcC>

Not All is Lost: Dynamic Functional Recovery in Older Adults Following Emergency General Surgery (EGS)

Study Population
78,820 independent older adults (≥65 years) admitted for EGS

Changes in Function Over 5 Years
Independent living → EGS → Chronic home care → Independent living → Nursing home/Death

Conclusions
Of those who required new chronic home care services:
50% recover to independent living
36% remain independent after 5 years

Fluctuations in function following EGS:
• Are common
• Represent an opportunity to promote rehab & recovery among older adults

Guttman et al. Journal of Trauma and Acute Care Surgery, July 2022
@JTraumaAcuteSurg

The Journal of Trauma and Acute Care Surgery®

NOT ALL IS LOST: DYNAMIC FUNCTIONAL RECOVERY IN OLDER ADULTS FOLLOWING EMERGENCY GENERAL SURGERY

https://journals.lww.com/jtrauma/Fulltext/2022/07000/Not_all_is_lost_Functional_recovery_in_older.10.aspx

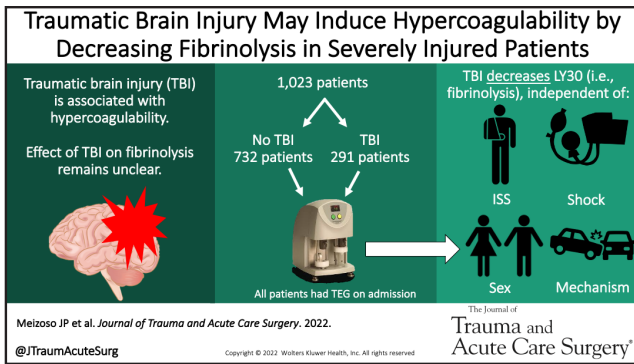


SCAN HERE TO VIEW A VIDEO OVERVIEW OF THE ARTICLE

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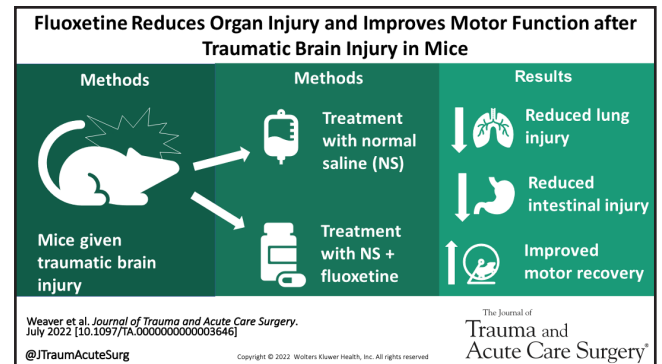
BEST OF BASIC SCIENCES ARTICLE

BEST OF EGS ARTICLE



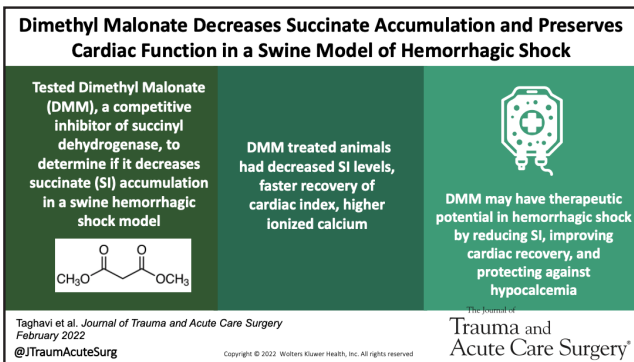
TRAUMATIC BRAIN INJURY PROVOKES LOW FIBRINOLYTIC ACTIVITY IN SEVERELY INJURED PATIENTS

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/TRAUMATIC_BRAIN_INJURY_PROVOKES_LOW_FIBRINOLYTIC.2.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/traumatic_brain_injury_provokes_low_fibrinolytic.2.aspx)



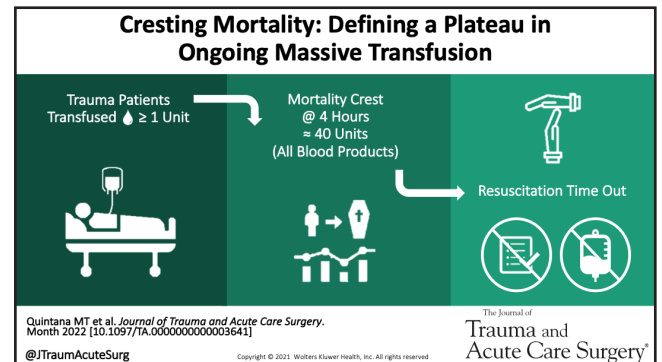
FLUOXETINE REDUCES ORGAN INJURY AND IMPROVES MOTOR FUNCTION AFTER TRAUMATIC BRAIN INJURY IN MICE

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/FLUOXETINE_REDUCES_ORGAN_INJURY_AND_IMPROVES_MOTOR.6.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/fluoxetine_reduces_organ_injury_and_improves_motor.6.aspx)



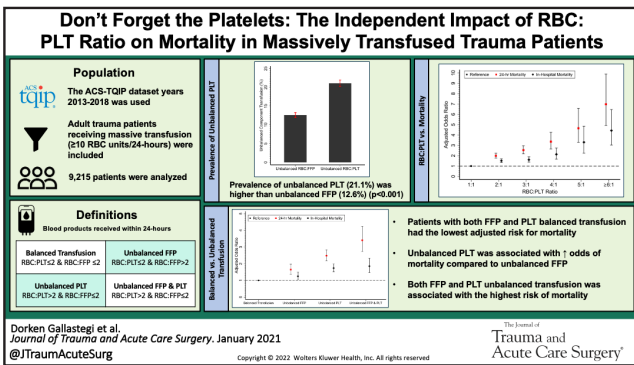
DIMETHYL MALONATE SLOWS SUCCINATE ACCUMULATION AND PRESERVES CARDIAC FUNCTION IN A SWINE MODEL OF HEMORRHAGIC SHOCK

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/DIMETHYL_MALONATE_SLOWS_SUCCINATE_ACCUMULATION_AND.3.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/dimethyl_malonate_slows_succinate_accumulation_and.3.aspx)



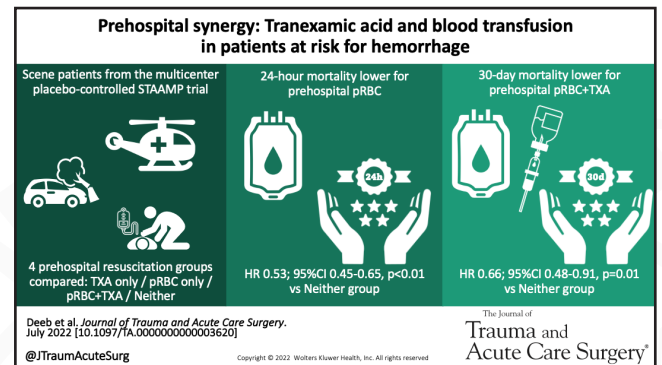
CRESTING MORTALITY: DEFINING A PLATEAU IN ONGOING MASSIVE TRANSFUSION

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/CRESTING_MORTALITY_DEFINING_A_PLATEAU_IN_ONGOING.7.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/cresting_mortality_defining_a_plateau_in_ongoing.7.aspx)



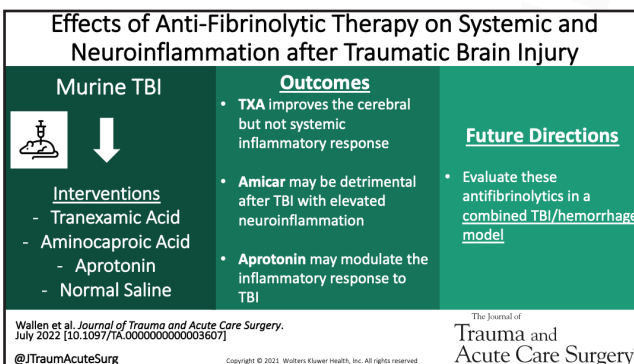
DON'T FORGET THE PLATELETS: THE INDEPENDENT IMPACT OF RBC:PLT RATIO ON MORTALITY IN MASSIVELY TRANSFUSED TRAUMA PATIENTS

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/DO_NOT_FORGET_THE_PLATELETS_THE_INDEPENDENT.4.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/do_not_forget_the_platelets_the_independent.4.aspx)



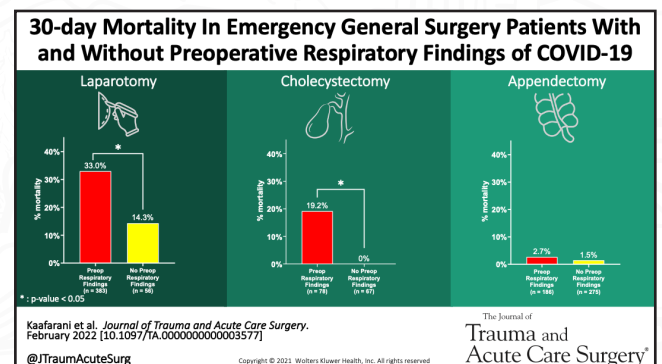
PREHOSPITAL SYNERGY: TRANEXAMIC ACID AND BLOOD TRANSFUSION IN PATIENTS AT RISK FOR HEMORRHAGE

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/PREHOSPITAL_SYNERGY_TRANEXAMIC_ACID_AND_BLOOD.8.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/prehospital_synergy_tranexamic_acid_and_blood.8.aspx)



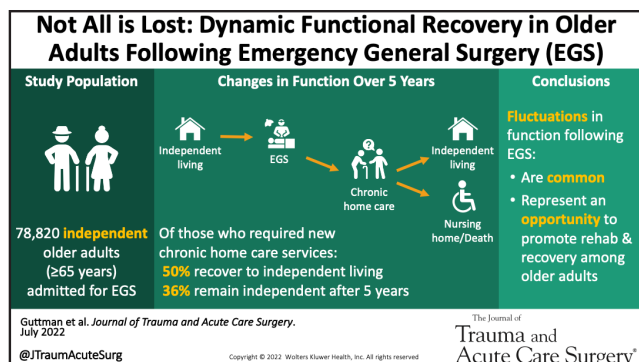
EFFECTS OF ANTIFIBRINOLYTICS ON SYSTEMIC AND CEREBRAL INFLAMMATION AFTER TRAUMATIC BRAIN INJURY

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/EFFECTS_OF_ANTIFIBRINOLYTICS_ON_SYSTEMIC_AND.5.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/effects_of_antifibrinolytics_on_systemic_and.5.aspx)



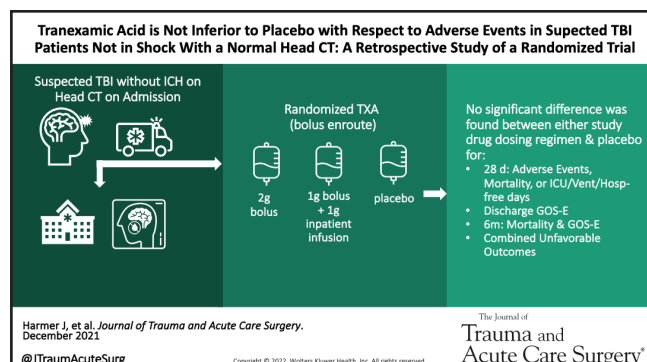
MORTALITY & PULMONARY COMPLICATIONS IN EMERGENCY GENERAL SURGERY PATIENTS WITH COVID-19: A LARGE INTERNATIONAL MULTICENTER STUDY

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/MORTALITY_AND_PULMONARY_COMPLICATIONS_IN_EMERGENCY.9.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/mortality_and_pulmonary_complications_in_emergency.9.aspx)



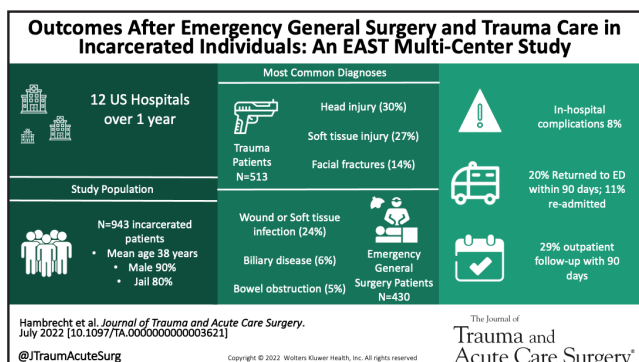
NOT ALL IS LOST: DYNAMIC FUNCTIONAL RECOVERY IN OLDER ADULTS FOLLOWING EMERGENCY GENERAL SURGERY

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/NOT_ALL_IS_LOST_DYNAMIC_FUNCTIONAL_RECOVERY_IN.11.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/not_all_is_lost_dynamic_functional_recovery_in.11.aspx)



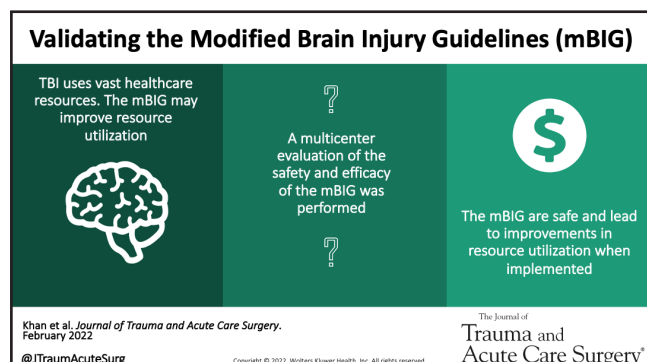
TRANEXAMIC ACID IS NOT INFERIOR TO PLACEBO WITH RESPECT TO ADVERSE EVENTS IN SUSPECTED TBI PATIENTS NOT IN SHOCK WITH A NORMAL HEAD CT: A RETROSPECTIVE STUDY OF A RANDOMIZED TRIAL

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/TRANEXAMIC_ACID_IS_NOT_INFERIOR_TO_PLACEBO_WITH.15.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/tranexamic_acid_is_not_inferior_to_placebo_with.15.aspx)



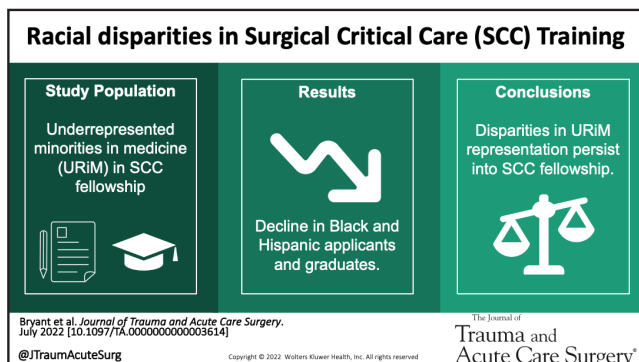
OUTCOMES AFTER EMERGENCY GENERAL SURGERY AND TRAUMA CARE IN INCARCERATED INDIVIDUALS: AN EAST MULTI-CENTER STUDY

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/OUTCOMES_AFTER_EMERGENCY_GENERAL_SURGERY_AND.12.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/outcomes_after_emergency_general_surgery_and.12.aspx)



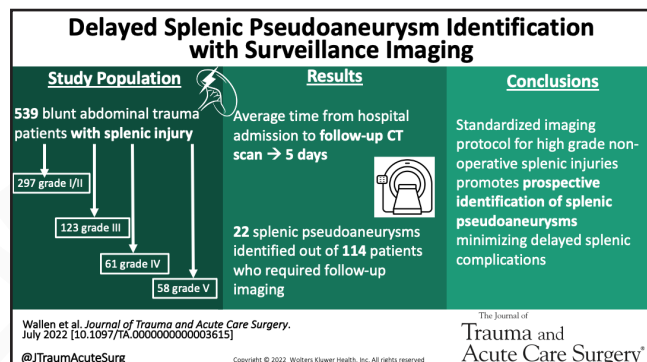
A MULTICENTER VALIDATION OF THE MODIFIED BRAIN INJURY GUIDELINES (MBIG): ARE THEY SAFE AND EFFECTIVE?

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/A_MULTICENTER_VALIDATION_OF_THE_MODIFIED_BRAIN.16.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/a_multicenter_validation_of_the_modified_brain.16.aspx)



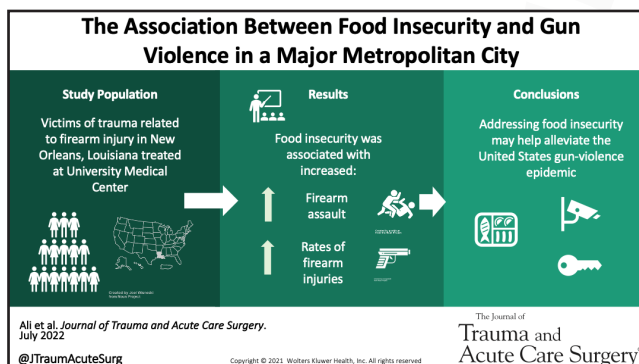
A DISTURBING TREND: AN ANALYSIS OF THE DECLINE IN SURGICAL CRITICAL CARE (SCC) FELLOWSHIP TRAINING OF BLACK AND HISPANIC SURGEONS.

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/A_DISTURBING_TREND_AN_ANALYSIS_OF_THE_DECLINE_IN.13.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/a_disturbing_trend_an_analysis_of_the_decline_in.13.aspx)



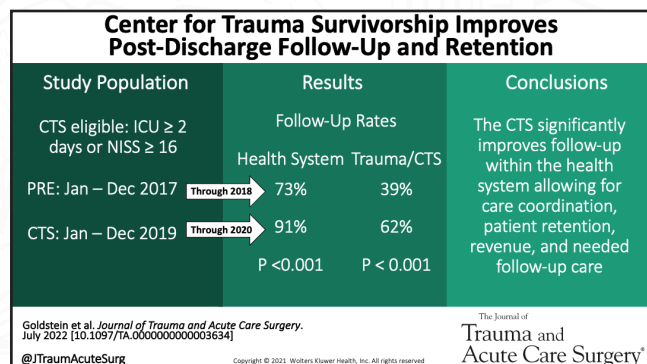
DELAYED SPLENIC PSEUDOANEURYSM IDENTIFICATION WITH SURVEILLANCE IMAGING

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/DELAYED_SPLENIC_PSEUDOANEURYSM_IDENTIFICATION_WITH.17.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/delayed_splenic_pseudoaneurysm_identification_with.17.aspx)



THE ASSOCIATION BETWEEN FOOD INSECURITY AND GUN VIOLENCE IN A MAJOR METROPOLITAN CITY

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/THE_ASSOCIATION_BETWEEN_FOOD_INSECURITY_AND_GUN.14.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/the_association_between_food_insecurity_and_gun.14.aspx)



CENTER FOR TRAUMA SURVIVORSHIP IMPROVES POST-DISCHARGE FOLLOW-UP AND RETENTION

[HTTPS://JOURNALS.LWW.COM/JTRAUMA/FULLTEXT/2022/07000/CENTER_FOR_TRAUMA_SURVIVORSHIP_IMPROVES.18.ASPX](https://journals.lww.com/jtrauma/fulltext/2022/07000/center_for_trauma_survivorship_improves.18.aspx)

FFP Maintains Normal Coagulation While Kcentra Induces a Hypercoagulable State in a Porcine Model of Pulmonary Contusion and Hemorrhagic Shock

Study Population	Results	Conclusions
PC+HS* vs Control	α angle: 3h – Kcentra 79.7 vs vehicle 76.7 deg, $p=0.006$ LY30: 18h – Kcentra 1.7 vs vehicle 0.6%, $p=0.004$ MA 12h – Vehicle 79.4 vs Kcentra 75.0mm, $p<0.001$ 18h – Vehicle 82.9 vs Kcentra 76.1mm, $p<0.001$	More rapid clot propagation with Kcentra than vehicle Lower late clot strength with Kcentra than vehicle

*Pulmonary contusion + hemorrhagic shock

Dixon et al. *Journal of Trauma and Acute Care Surgery*, December 2021
@JTraumaAcuteSurg

The Journal of Trauma and Acute Care Surgery

FFP MAINTAINS NORMAL COAGULATION WHILE KCENTRA INDUCES A HYPERCOAGULABLE STATE IN A PORCINE MODEL OF PULMONARY CONTUSION AND HEMORRHAGIC SHOCK

https://journals.lww.com/jtrauma/fulltext/2022/07000/FFP_MAINTAINS_NORMAL_COAGULATION_WHILE_KCENTRA.19.aspx

HIGHER RISK OF AUTO-PEDESTRIAN CRASHES IN SCHOOL-AGE CHILDREN ON SCHOOL DAYS

Retrospective Study of Pediatric Trauma Patients 441 Pediatric Auto-pedestrian Collisions

Pediatric auto vs. pedestrian crash (APC) Sorted by school and non-school day and time of day

167 total Rate 0.101

274 Rate 0.174 72% increase ($p<0.001$)

Ages 10-13 showed greatest (127%) increase

Severe APC (ISS>15) 62% more on school days

Increase in APC at times to and from school

Morrison et al. *Journal of Trauma and Acute Care Surgery*, July 2022
@JTraumaAcuteSurg

The Journal of Trauma and Acute Care Surgery

HIGHER RISK OF AUTO-PEDESTRIAN CRASHES IN SCHOOL-AGE CHILDREN ON SCHOOL DAYS

https://journals.lww.com/jtrauma/fulltext/2022/07000/HIGHER_RISK_OF_AUTO_VERSUS_PEDESTRIAN_CRASHES_IN.20.aspx

Surgical Management of Complicated Peptic Ulcer Disease: An EAST Video Presentation

Complicated Peptic Ulcer Disease (PUD)

Once surgical disease

Now primarily medical mgt.
H2 blockers
PPI
H. Pylori

Endoscopic
Interventional Tx.

Surgical management reserved Complications:
Bleeding
Perforation
Obstruction
Intractable disease

Key Procedures for ACS
Graham patch
GDA Ligation
Vagotomy & Antrectomy
Roux-en-Y reconstruction

Hydrell et al. *Journal of Trauma and Acute Care Surgery*, July 2022
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THE SURGICAL MANAGEMENT OF COMPLICATED PEPTIC ULCER DISEASE: AN EAST VIDEO PRESENTATION

https://journals.lww.com/jtrauma/fulltext/2022/07000/THE_SURGICAL_MANAGEMENT_OF_COMPLICATED_PEPTIC.23.aspx

Data Resources for Evaluating the Economic and Financial Consequences of Surgical Care in the United States

When choosing a database, make sure you can identify:

- Population of interest
- Relevant clinical details
- Key economic and financial outcomes

Common types of data available:

- Government Insurance Claims
- Commercial Insurance Claims
- State and National Discharge Databases
- Hospital-based Clinical Databases
- National Survey Data

Considerations going forward:

- Know Pros/Cons of each database, none are perfect, all can be useful
- Different data address different aspects of a topic
- Novel combinations of existing databases can address new questions

Scott et al. *Journal of Trauma and Acute Care Surgery*, July 2022 [10.1097/TA.0000000000003631]
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DATA RESOURCES FOR EVALUATING THE ECONOMIC AND FINANCIAL CONSEQUENCES OF SURGICAL CARE IN THE UNITED STATES

https://journals.lww.com/jtrauma/fulltext/2022/07000/DATA_RESOURCES_FOR_EVALUATING_THE_ECONOMIC_AND.24.aspx

Value in Acute Care Surgery: Defining & Measuring Quality Outcomes
A Review of Data Sources and Methods Important for ACS

Administrative datasets	Clinical registries
- Compare large datasets and populations, disease severity, operative procedure, and postoperative care - Leapfrog, US News and World Report, CMS, HCUP, Vient, Premier	- Performance reports comparing local to national benchmarks and peers - Granular, abstracted ± surgery specific - NSQIP, TQIP, STS, SVS, NHSN, UNOS, Surviving Sepsis
Risk-adjusted methodology	Patient-reported outcomes
- Account for patient differences, case mix, setting, and clinical factors - DRG, HCC, ACA, CDPS, Charlson, Elixhauser, RAP, NSQIP risk calculator, AAST Severity scores, POTTER	- Include multiple domains: physical, mental, social, and quality of life - PROMs, SF-36, EuroQual, PROMIS - Financial Toxicity, COST

Ross SW et al. *Journal of Trauma and Acute Care Surgery*, February 2022
@JTraumaAcuteSurg

The Journal of Trauma and Acute Care Surgery

VALUE IN ACUTE CARE SURGERY, PART 2: DEFINING AND MEASURING QUALITY OUTCOMES

https://journals.lww.com/jtrauma/fulltext/2022/07000/VALUE_IN_ACUTE_CARE_SURGERY_PART_2_DEFINING_AND_MEASURING_QUALITY_OUTCOMES.25.aspx

NO VISUAL ABSTRACT PROVIDED
COMMENTARY ON “NOT ALL IS LOST: DYNAMIC FUNCTIONAL RECOVERY IN OLDER ADULTS FOLLOWING EMERGENCY GENERAL SURGERY

https://journals.lww.com/jtrauma/fulltext/2022/07000/NOT_ALL_IS_LOST_DYNAMIC_FUNCTIONAL_RECOVERY_IN.11.aspx

NO VISUAL ABSTRACT PROVIDED
BURNOUT, SHIFTWORK AND SUICIDE: 2022 SCOTT B. FRAME MEMORIAL LECTURE

https://journals.lww.com/jtrauma/fulltext/2022/07000/BURNOUT_SHIFTWORK_AND_SUICIDE_2022_SCOTT_B.21.aspx

NO VISUAL ABSTRACT PROVIDED
A REPRODUCIBLE STRATEGY TO SOLVE PROBLEMS

https://journals.lww.com/jtrauma/fulltext/2022/07000/A_REPRODUCIBLE_STRATEGY_TO_SOLVE_PROBLEMS.22.aspx

LETTER TO THE EDITOR
NOT SO FAST REPLACING THE “E” IN THE E-FAST WITH SUPINE CHEST-X-RAY

https://journals.lww.com/jtrauma/fulltext/2022/07000/NOT_SO_FAST_REPLACING_THE_E_IN_E-FAST_WITH.26.aspx

LETTER TO THE EDITOR
TECHNIQUE AND TIMING MAY INFLUENCE SENSITIVITY OF LUNG ULTRASOUND FOR PNEUMOTHORAX IN TRAUMA PATIENTS

https://journals.lww.com/jtrauma/fulltext/2022/07000/TECHNIQUE_AND_TIMING_MAY_INFLUENCE_SENSITIVITY_OF.28.aspx

LETTER TO THE EDITOR
ULTRASOUND IS SUPERIOR TO SUPINE CHEST X-RAY FOR THE DIAGNOSIS OF CLINICALLY RELEVANT TRAUMATIC PNEUMOTHORAX

https://journals.lww.com/jtrauma/fulltext/2022/07000/ULTRASOUND_IS_SUPERIOR_TO_SUPINE_CHEST_X-RAY_FOR.30.aspx

AUTHOR REPLY
RESPONSE TO LETTER TO THE EDITOR: NOT SO FAST—CHEST ULTRASOUND UNDERDIAGNOSES TRAUMATIC PNEUMOTHORAX

https://journals.lww.com/jtrauma/fulltext/2022/07000/RESPONSE_TO_LETTER_TO_THE_EDITOR_NOT_SO_FAST.27.aspx

AUTHOR REPLY
AUTHOR REPLY: NOT SO FAST—CHEST ULTRASOUND UNDERDIAGNOSES TRAUMATIC PNEUMOTHORAX

https://journals.lww.com/jtrauma/fulltext/2022/07000/AUTHOR_REPLY_NOT_SO_FAST_CHEST_ULTRASOUND.29.aspx

AUTHOR REPLY
RESPONSE TO LETTER TO THE EDITOR

https://journals.lww.com/jtrauma/fulltext/2022/07000/RESPONSE_TO_LETTER_TO_THE_EDITOR.31.aspx