SAEM 2026 · OPERATIONS

Evaluation of Selective Imaging and Emergency Department Outcomes in Low-Acuity (Level III) Blunt Trauma

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2 vs 7

STUDIES PER PATIENT · FOCUSED SCAN VS PAN SCAN

2 ± 2 vs 7 ± 1 studies per patient · **p < 0.01**

644
ADULT LEVEL III BLUNT TRAUMA PATIENTS
315 pan scan · 329 focused scan

−63 min
CTA CHEST REPORT TURNAROUND
166 vs 229 min · p = 0.01 · focused vs pan

No Δ
IN ED LOS, ICU LOS, HOSPITAL LOS, MORTALITY, READMISSIONS
All p > 0.05

BACKGROUND

Whole-body CT in low-acuity trauma — radiation, cost, and resource concerns.

Whole-body computed tomography (CT) or panscan is commonly used in emergency department (ED) trauma evaluation, though its routine use in lower-acuity (Level III) patients remains controversial due to radiation exposure, cost, and resource utilization.

Selective imaging protocols may mitigate these concerns, but the impact on clinical outcomes is not well defined.

We evaluated the effect of implementing a focused imaging protocol on short-term clinical outcomes, imaging utilization, and ED throughput.

METHODS

Retrospective cohort, before/after focused imaging protocol implementation.

Setting. Adult low-acuity blunt trauma patients presenting to an academic Level I trauma center emergency department before and after protocol implementation.

Variables. Patient demographics, injury mechanisms, imaging studies, radiology turnaround times, ED LOS, hospital outcomes, 30-day ED readmissions.

Primary outcomes. Actionable injuries; 30-day readmissions.

Secondary outcomes. Imaging utilization; ED length of stay.

Analysis. Parametric and nonparametric tests; multivariable logistic regression for actionable injury and readmission; linear regression for imaging strategy vs LOS.

RESULTS

Substantial imaging reduction with comparable clinical outcomes.

644	Total patients · 315 pan scan · 329 focused scan
2 ± 2	Studies per patient · focused scan group
7 ± 1	Studies per patient · pan scan group *(p < 0.01)*
Comparable	ED LOS, ICU LOS, hospital LOS, readmissions, mortality, trauma activation upgrades *(all p > 0.05)*
−63 min	CTA chest report turnaround in focused group *(166 vs 229 min, p = 0.01)*
~1.3 h	Additional ED LOS associated with pan scanning *(linear regression, not statistically significant)*
No assoc.	Focused scanning not associated with actionable injury or 30-day ED readmission *(multivariable analysis)*
Demographic	Focused group older, more falls; pan group more motor vehicle collisions

CONCLUSION

Selective imaging is safe and efficient in low-acuity blunt trauma.

Implementation of a focused imaging protocol substantially reduced imaging utilization without delays in care or adverse short-term outcomes. These findings support the safety and efficiency of selective imaging strategies in low-acuity blunt trauma patients, though generalizability may be limited by the single-center design.

ASK ME ABOUT

- Focused vs pan scan triggers
- Trauma activation criteria
- Multivariable adjustment approach
- Single-center generalizability