

CLINICAL AUDIT : ADHERENCE TO TRAUMA TEAM ACTIVATION POLICY



Authors

Dr Sayid Ahmad Aiman bin Sayed Masri, Dr Zatul Rathiah binti Abdul Razak, Dr Mariyam binti Ibrahim, Dr Mohd Zulfikri bin Hanafi, Dr Kasmasaila binti Mohd, Dr Fatimah Nur Abillah binti Aziz

INTRODUCTION

- Timely, coordinated trauma care during the ‘golden hour’ is vital to reduce morbidity and mortality.
- A study at Sharourah General Hospital,Saudi Arabia, involving 200 trauma patients, showed that strict adherence to TTA protocols significantly reduced mortality (8.3% vs. 18.7%), complications, and hospital stays.
- In 2022, Hospital Sultanah Nur Zahirah introduced a Trauma Team Activation (TTA) policy to standardize early management.
- An initial audit, however, revealed poor adherence. This audit aimed to assess the impact of targeted interventions on TTA compliance and the timeliness of imaging and lab investigations.

OBJECTIVE

- Measuring compliance with TTA criteria and timeliness of activation.
- Analyzing turnaround times for critical investigations such as point-of-care laboratory tests and radiological imaging.
- Identifying factors contributing to the delays or non-adherence to the policy.

STANDARD AND METHODOLOGY

- A retrospective audit was conducted on all trauma patients treated in the Emergency Department at Hospital Sultanah Nur Zahirah.
- The eligible trauma patients as stated in Trauma Team Activation Policy HSNZ are as mentioned below:

- 1.Polytrauma (Injury 2 or more major organs/systems)
- 2.Severe maxillofacial injury with airway compromise
- 3.Severe head injury (GCS ≤8/15)
- 4.Suspected unstable blunt or penetrating injury (chest, abdomen, spine, or pelvic)
- 5.Major traumatic amputation or limb threatening neurovascular injury
- 6.Blast burn injury
7. Pregnancy >24 weeks POA with torso injury

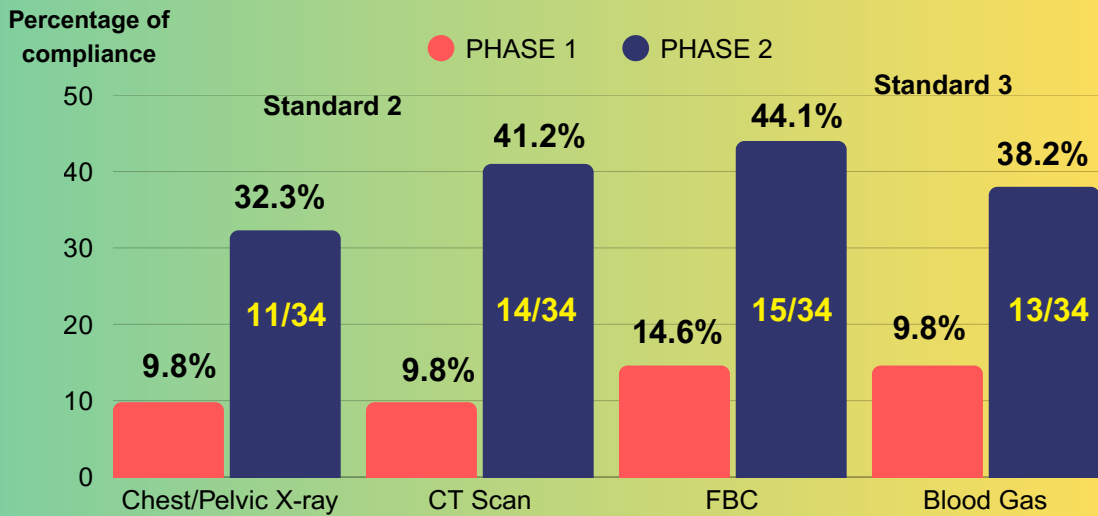
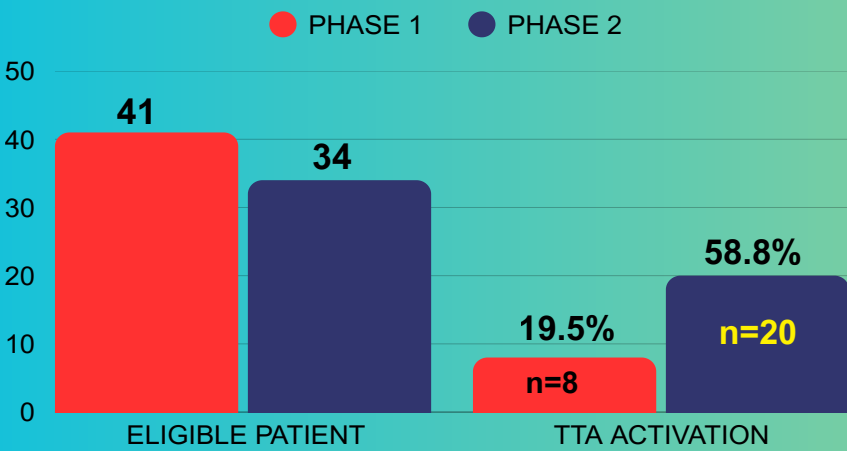
Sample collected in 2 phases :
Phase 1 (1st cycle audit) : July - September 2024
Phase 2 (2nd cycle audit) : February - April 2025

- Data was collected via the Malaysian Trauma Registry, Trauma Team Activation (TTA) records, Patients Registration Book, medical record tracing, and the Hospital Information System (HIS).
- The audit assessed compliance with activation criteria, as well as the time intervals from patient arrival to the completion of imaging and laboratory investigations.

Standards	Description	Target
1. All eligible trauma patients must have TTA activated	All patients must meet criteria of activation according to HSNZ TTA Policy	100%
2. All essential radiological imaging ordered must be completed within 30 minutes	The essential radiological investigations are the primary adjunct x -rays (i.e chest and pelvic x -rays) and CT scan	100%
3. All essential point-of-care laboratory investigation must be available within 30 minutes	All essential poin-of-care laboratory investigations are POCT Full Blood Count (FBC) and POCT Blood Gas	100%

2ND CYCLE AUDIT - PHASE 2

The TTA activation rate dramatically rose to 58.8%, and the completion rates for investigations such as FBC, blood gases, X-rays, and CT scans all showed notable increases in compliance within the designated timeframe. However, approximately 41.2% of eligible trauma cases still lacked timely activation, and delays in investigations continued to occur.



SUMMARY

- Initial audit revealed low adherence to TTA policy.
- Interventions (education, visual aids, digital tools) led to significant improvement in TTA activation and timeliness of investigations.
- Sustained efforts needed for full compliance and continued improvement to ensure consistent high-quality trauma care remains ongoing .

1ST CYCLE AUDIT - PHASE 1

COMPARE TO STANDARD PRACTICE

Standard 1 : All eligible trauma patients must have TTA activated

Phase	Number of patients met criteria	Activated TTA patients	Percentage
Phase 1	41	8	19.5%

Standards 2 and 3: All essential imaging and laboratory investigations must becompleted within 30 minutes

Investigation Parameter	Number of Patients Met Criteria	Number of Patients Whose Investigations completed within 30 minutes	Percentage
FBC	41	6	14.6%
Blood gas	41	6	14.6%
X-ray	41	4	9.8%
CT scan	41	4	9.8%

REASON FOR SHORTFALL IN QUALITY

Lack of awareness

- Unfamiliarity regarding TTA policy, criteria, and activation steps among ETD staff.
- Inconsistent training and limited exposure since the introduction of the policy.

Poor task prioritization

- Delay in performing essential investigations (labs and imaging) especially during peak hours as teams struggled with multiple tasks
- Lacked clear escalation protocols.

Staff shortage

- Limited manpower, especially during peak hours, led to delayed activations and slow execution of investigations.
- Fatigue and burnout further affected efficiency.

INTERVENTION

OCTOBER 2024 - JANUARY 2025

Surveillance

1st and 2nd audit cycle survey were conducted to determine the knowledge of TTA Policy among ED doctors. The 2nd cycle audit survey done after intervention showed significant improvement (> 80% of staff scored > 12/15) compared to only 53% of emergency doctors had scoring of > 8/15 during the 1st cycle audit.

Educational session

A department-wide Continuing Medical Education session was held to educate staff on TTA policy and activation steps.

Posters and Flowcharts

Visual guides explaining the TTA process were placed in trauma bays and high-traffic zones to reinforce learning and assist during resuscitation.

QR code access

A QR code linking directly to the digital TTA policy was created and shared via WhatsApp, allowing quick reference for all staff.

Monitoring

All TTA activated patients were documented in TTA record form as a part of reinforcement strategy, and being monitored by departmental trauma audit team.

QR CODE TO
TRAUMA PROTOCOL
POLICY HSNZ 2022

References :

- 1.Hospital Sultanah Nur Zahirah. Trauma Team Activation Policy. Kuala Terengganu: Emergency and Trauma Department; 2022.
2. Nurlaelah, S, Kamal, AF, Irawati, D, Mansyur, M & Bardosono, S 2024, 'Trauma Team Activation in the Emergency Department: A Literature Review of Criteria, Processes and Outcomes', Malaysian Journal of Medicine and Health Sciences, vol. 20, no. 1, pp. 323-329
3. Rather IH, Ain Q ul, Rather AA, Rather SA, Tarifi AO. Impact of Trauma Protocol Adherence on Patient Outcomes in Resource-Limited Settings: A Study from Sharourah General Hospital, Saudi Arabia. J Fatima Jinnah Med Univ [Internet]. 2024 Mar. 10 [cited 2025 Apr. 29];17(4):180-4.

QR CODE TO APPENDICES
TO TTA CLINICAL AUDIT
HSNZ 2022