TRAUMA TEAM ACTIVATION GUIDELINES - ST GEORGE HOSPITAL (SGH)

This Business Rule does not apply to Code Crimson *Refer to SGH BR 548 Code Crimson - Trauma SGH*	
1. Purpose	To provide minimum patient criteria for triage and guidelines for activation of three specific levels of Trauma Team Activation for trauma patients presenting to the Emergency Department (ED): 1. Trauma Required 2. Trauma Standby 3. Trauma Consult To identify special populations of patients for whom modified triage criteria and specific management guidelines: 1. Paediatric patients 2. Elderly patients 3. Pregnant patients 4. Burns
2. Risk Rating	High
3. National Standards	1 – Clinical Governance 5 – Comprehensive Care 6 – Communicating for Safety 8 – Recognising and Responding to Acute Deterioration
4. Employees it Applies to	Senior Medical Officers and Emergency Nursing Staff receiving trauma patients in the ED Trauma/Surgical Consultants, Fellows and Registrars

Contents

5.PROCESS

5.1 BACKGROUND

- Trauma triage systems aim to categorise injured patients utilising information available at the time of patient notification or presentation, to enable the proper allocation of resources.
- A systematic approach reduces both morbidity and mortality.
- Physiological derangement following trauma is associated with highest levels of morbidity and mortality, regardless of the mechanism of injury/ trauma. For this reason, patients with physiological derangement should have the highest level of trauma call activation (i.e. trauma required) regardless of the mechanism of injury (if the physiological derangement is thought to be due to injury).
- Ineffective trauma triage protocols result in either over call or under call of patients. Priority is given to reducing under-triage which may result in preventable mortality or morbidity.
- Over trauma call has few consequences for the patient but can lead to increased cost and resource burdens. Current guidelines suggest an acceptable over call rate of 25–35% but maintain a stricter under call rate of 5%.

5.2 TRAUMA TEAM ACTIVATION CRITERIA

- Please refer to Appendix 1 Trauma Team Activation Criteria Flowchart which outlines an easy flowchart for rapid identification of the criteria for activating either a Trauma Required, Trauma Standby or Trauma Consult. These criteria are discussed in more depth in the main document.

5.3 TRIAGE IN THE EMERGENCY DEPARTMENT

- Trauma patients are initially triaged according to physiological criteria per the Flowchart (Appendix 1),
- Mechanism, Injury, Symptoms & Treatment (MIST) & Estimated Time of Arrival (ETA) may be communicated by Pre-hospital/Retrieval personnel via the “Batphone”. The ED Clinician receiving the details must scribe this information onto the batphone sheet, then use the TTAC Flowchart (Appendix 1) to determine if a Trauma Required or Trauma Standby is to be activated. This is done via Switchboard (call 2222) and ask for the Page to be activated (Trauma Required / Trauma Team Standby).
- NOTE: if the patient is arriving via helicopter you must activate the helipad via Switchboard (call 2222) and state "Activate Helipad" in addition to activating the Trauma call, as per Helicopter Operating Procedures - St George Hospital
- ANY significant hypotension (systolic < 90 mmHg in patients aged 12 – 70 years) occurring at **any time** from the point of injury necessitates activation of a Trauma Required call, even if BP > 90 mmHg at time of Batphone call or arrival to ED.
    - In patients < 12 years, ANY episode of hypotension with systolic BP in red for age on SPOC chart.
    - In patients > 70 years ANY episode of hypotension < 110mmHg from time of injury.
- Trauma patients presenting without pre-hospital notification will have their vital signs assessed by the Triage Nurse. If physiological derangement is present (as per the TTAC Flowchart (Appendix 1), or if there is confirmed period of BP < 90mmHg since time of injury from Ambulance NSW (ANSW) a Trauma Required is to be activated. Note will be made of critical injuries, the mechanism of injury and anatomic criteria. Based on this information the Triage nurse will activate the appropriate Trauma Team page by calling 2222 and will notify the senior ED MO and ED Nurse in charge that a Trauma Call has been activated.

Note: Code Crimson activation occurs when Pre-hospital Retrieval Medical staff notify SGH Emergency Department (ED) they are transporting an exsanguinating patient per ACI-ITIM.
NSW Govt Institute of Trauma & Injury Management *Trauma code crimson pathway*
The most senior ED MO may activate a hospital Code Crimson for an enhanced full trauma call.
Refer to SGH BR 548 *Code Crimson - Trauma SGH*

5.4 TRAUMA REQUIRED CRITERIA

Refer to Appendix 1.

5.4.1 Special Populations Criteria

1) Geriatric Patients Age > 70

As per Appendix 1 NOTE altered criteria below:

Circulation	– SBP < 110mmHg – HR > SBP

2) Paediatric Patients < 16 Years Old

- Critically injured children < 16 years old should be primarily transferred to the SESLHD Paediatric Major Trauma Centre – Sydney Children's Hospital (SCH) Randwick
- St George Hospital receives paediatric trauma on occasion if pre-hospital personnel (Retrieval/Paramedics) are concerned about the haemodynamic status of the child and choose to divert to the SGH ED.
- Activation criteria (Appendix 1) and note age-specific physiological criteria for children under 12 years as per the SPOC BTF chart, where vital signs in the red zone are considered the threshold for trauma required activation
- For children age 12 to 16 years, adult parameters should be used for determining physiological derangement as per Appendix 1
- Activation of the paediatric Trauma Required team should include the full Trauma Required team as per Appendix 2 in addition to the paediatrics Registrar +/- Consultant
- If paediatric patient requires subsequent transfer to SCH call Paediatric Acute Trauma Care Hotline – PATCH 13004 TRAUMA - Press 2 for SCH. Refer to Sydney Children's Hospital Network Paediatric Acute Trauma Care Hotline (PATCH)

3) Pregnant / Post Partum Trauma Patients - "Pregnant Trauma Required"

- Pregnant patient > 20/40 (Fundus palpable at/above umbilicus)
- Post partum women < 6 weeks meeting Trauma Required Activation
- Activate Obstetric Rapid Response Team
  - Obstetric Rapid Response Team:
    - → Obstetrician or Obstetric Fellow
    - → Paediatrician or Paediatric Registrar
    - → Senior Midwife
- For further management refer to *SGH BR 159 Pregnancy- Management of the Pregnant Trauma Patient, St George Hospital* and *SCG WCH BR 012 Emergency Department Management of Pregnant & Post Partum (< 6 weeks) Women, St George Hospital*

4) Burns

- Any burn patient who also meets physiological criteria
- Inhalation with unsecured airway
- 10% TBSA in Children (<12 years) or elderly (>70 years)
- 15% TBSA in adults

Note: Children with ≥10%TBSA burns should be primarily transferred to Westmead Children's Hospital

5.4.2 Other Criteria for Activation of Trauma Required (Special Considerations)

- Emergency Department Senior ED Clinician discretion
- Interhospital transfer patients who require ongoing blood transfusion
- Interhospital transfers with ongoing respiratory compromise/assisted ventilation (excludes patients intubated at another facility now stable from a respiratory standpoint)
- Patients with high likelihood of requiring immediate/ urgent surgery

5.5 TRAUMA TEAM STANDBY CRITERIA

- Trauma Team Standby should be activated for patients presenting to ED who meet any of the criteria from EITHER mechanism OR anatomic criteria. Refer to flowchart (Appendix 1).
- Exceptions – section 5.5.1
- Mechanism – see section 5.5.2
- Anatomic criteria – see section 5.5.3

Note: Injury must have occurred within 48 hours

Patients who present outside this window are reviewed by the ED team. The Trauma Team may be contacted as required by calling the Trauma Registrar in hours, or the Surgical Registrar (099) after hours requesting a Trauma Consult.

5.5.1 Exceptions

- Injury occurring greater than 48 hours from presentation
- Interhospital Transfers – should be reviewed in the ED prior to admission to the ward unless otherwise arranged by the admitting team.

5.5.2 Mechanism

- Fall from height > 3m or > 2 x height
- High risk Motorcycle crash (MBC) > 30 kph or rider thrown (separation of rider from motorcycle)
- High risk Motor vehicle collision (MCV) > 55 kph intrusion into vehicle, death of occupant in vehicle, prolonged entrapment
- Assault with blunt object (blunt force assault)
- Traumatic asphyxiation (hanging, drowning)
- Pedestrian or cyclist struck by motor vehicle at any speed
- Cyclist, E-bike or E-scooter fall / collision at speed
- Fall from standing height in patients > 70 yrs if either:
    - Signs of head injury with drop of baseline GCS by 2 or more points *OR*
    - Signs of chest / abdomen / pelvic trauma on anticoagulation* (Warfarin, NOAC (Apixaban, Rivaroxaban), therapeutic clexane)

5.5.3 Anatomic criteria

- ≥ 2 body systems involved with ANY trauma (including fall from standing height)
- ≥ 2 proximal long bone fractures
- Significant facial injuries
- Possible depressed or open skull fracture
- Flail chest

May upgrade any level per ED Senior Clinician Discretion

5.6 TRAUMA CONSULT

- All other patients presenting with injury outside of the above criteria, or those stable enough to remain in the waiting room (excludes Acute Awaits) should be reviewed by the EDMO with appropriate assessment and imaging undertaken.
- If a Trauma opinion is indicated, then the Trauma/Surgical Registrar can be contacted via pager # 078 or pager # 1298 (in hours), or the Surgical Registrar pager # 1530 or # 099 after hours requesting a “Trauma Consult”.
- Where a single system injury is identified, referral to the relevant specialty team should be made directly.

5.7 ATTENDANCE REQUIREMENTS

- Refer to Appendix 2
- Trauma Team Leader (TTL) is responsible for ensuring that representatives of all the teams listed in Appendix 2 are in attendance.
- In case of non-attendance (failure of paging/phone system, competing duties etc.) prior to or shortly after the arrival of the patient, the TTL should request a staff member to make contact

5.8 TEAM ROLES AND RESPONSIBILITIES

5.8.1 Trauma Team Leader

- Usually fulfilled by ED Consultant or ED Senior Registrar
- Responsible for pre-arrival brief of trauma team and role allocation
- Responsible for ensuring all members of Trauma Required team are in attendance

5.8.2 Roles and Responsibilities within Trauma Team

- It is the TTL responsibility to allocate roles to the members of the trauma team on each occasion based on the experience and skill set of those in attendance e.g. Surgical Registrar to do primary survey
- When attending a Trauma required, please introduce yourself and your role to the Trauma Team Leader (TTL) and inform them of your skills and capabilities e.g. “Hi, I am Grace the Surgical Registrar, I’m happy to do a primary survey, chest tubes etc.”
- Trauma/ General Surgical Registrar must ensure to notify Fellow/ Consultant when the MIST information is available for Trauma Required patients
- When the patient arrives listen to the handover – hands off the patient until this is complete, unless advised otherwise by TTL (e.g. unstable patient).
- Perform designated role and feedback any information to the TTL.
- Once you have completed your allocated task notify the TTL. Do not leave the Trauma Required without checking with TTL

5.9 DISPOSITION OF THE PATIENT

- Decisions about patient disposition (OT, IR, ICU, ward) are to be made by the most Senior Medical Officers in attendance including discussion with but not limited to:
  - ED Team Leader
  - Trauma Consultant/Fellow
  - Interventional Radiologist
  - ICU Outreach Registrar who then must discuss with the ICU Senior Registrar or ICU Duty Intensivist for further management advice or ICU admission

No Trauma Required patient is to leave the Emergency Department prior to:

1. Review by the ICU Fellow/Registrar
2. Discussion with the On Call Intensivist about appropriateness of HDU/ICU admission.

If the patient is not accepted to HDU/ICU this must be discussed with the Admitting Team.

If ICU Outreach Registrar is unavailable this should not delay definitive treatment in OT/IR

6. Cross References	NSW Govt Institute of Trauma & Injury Management *Trauma code crimson pathway* SGH BR 548 *Code Crimson - Trauma SGH* SGH BR 159 *Management of the Pregnant Trauma Patient, SGH* SGH BR 758 *Paediatric - Management of the critically injured child in ED, SGH* *SGH BR 300 Helicopter Operating Procedures, SGH* *SGH BR 017 Emergency Department Admission Acceptance – St George Hospital (SGH)* *SGH BR 159 Pregnancy- Management of the Pregnant Trauma Patient, St George Hospital* *SCG WCH BR 012 Emergency Department Management of Pregnant & Post Partum (< 6 weeks) Women, St George Hospital* *SGH BR 751 Clinical Emergency Response System Management in the Emergency Department St George Hospital* Sydney Children's Hospital Network *Paediatric Acute Trauma Care Hotline (PATCH)*
7. Keywords	Trauma Team Activation, Trauma Required, Trauma Standby, Physiological Derangement, Mechanism of Injury
8. BR Location	SGH-TSH Business Rule Webpage- Trauma & ED SGH
9. External References	1. Trinder_et_al-2018-Emergency_Medicine_Australasia.pdf 2. Washington State DoH.pdf 3. Success_Of_An_Expedited_Emergency_Department_Triage (1).pdf 4. Waydhas2020_Article_SurveyOnWorldwideTraumaTeamAct.pdf 5. Carpenter et al 2017 ACUTE GERIATRICS Major trauma in the older patient: Evolving trauma care beyond management of bumps and bruises 6. ACS American College of Surgeons, 2023 Best Practice Guidelines – Geriatric Trauma Management. 7. Schellenberg, M, 2021 ACS Highlight: Trauma Team Activation: Optimising Prehospital Triage of the Injured Patient 8. Statewide Burn Injury Service | Agency for Clinical Innovation
10. Consumer Advisory Group (CAG) Approval	Not Applicable
11. Aboriginal Health Impact Statement	The Aboriginal Health Impact Statement does not require completion because there is no direct or indirect impact on Aboriginal people. The process within this BR applies to all population groups.

12. Implementation and Evaluation Plan	**Implementation:** The document will be published on the SGH-TSH business rule webpage and distributed via the monthly SGH-TSH CGD report. Dissemination, Resources, Tabling at meetings / committees. Training & education coordinated by SESLHD District Trauma CNC **Evaluation:** Monitoring of appropriate Trauma Team activations, feedback to ED where deficiencies are noted, case by case discussion
13. Knowledge Evaluation	**Q1: Which criteria are used to determine Trauma Team Required Activation?** A1: Physiological derangement and critical inures **Q2: What is the time frame of injury occurring to meet Trauma Team Standby?** A2: Less than 48hrs from injury **Q3: What speciality must review Trauma Required patients prior to them leaving the Emergency Department?** A3. The Intensive Care Unit (ICU) Fellow/Registrar
14. Who is Responsible	Director of Trauma

Approval for: TRAUMA TEAM ACTIVATION GUIDELINES - ST GEORGE HOSPITAL (SGH)	
Nurse Manager / Divisional Director (SGH)	Andrew Bridgeman, Divisional Director Surgery Date: 03.03.2025
Nurse Manager / Divisional Director (SGH)	Melanie Lax, Nurse Manager Emergency Department Date: 07.03.2025
Medical Head of Department (SGH)	Dr Lillian Jenkins, Deputy Director of Trauma SGH Date: 05.03.2025
Medical Head of Department (SGH)	Dr Stephen Asha, Deputy Director Emergency Department Date: 04.03.2025
Executive Sponsor	Andrew Bridgeman, Divisional Director Surgery Date: 03.03.2025
Executive Sponsor	Cheryl Trudinger, Division Director Critical care & Medical Imaging Date:
Contributors to BR	**Contribution** Director of Trauma, Dr Mary Langcake Deputy Director Trauma, Dr Lillian Jenkins Trauma Consultant, Dr Jessica Wong Anaesthetics Consultant, Elizabeth Mackson Anaesthetics Consultant, Illana Delroy-Buelles Anaesthetics Consultant, Robert Scott SESLHD District Trauma CNC, Sarah O'Hare & Raphael Mendoza ED Staff Specialist, Dr Alex Tzannes ED CNC, Sara Smith & Rochelle Cummins

	Consultation: Dr Heidi Boss, Director Medical Services Dr Amy Manos, Deputy Director Medical Services Surgery Divisional Director, Andrew Bridgman Critical Care & Medical Imaging Divisional Director, Cheryl Trudinger ICU Consultant, Swapnil Pawar ED Director Jacqueline Weeden ED Nurse Manager, Melanie Lax ED Staff Specialist, Dr Donovan Dwyer ED Staff Specialist, Dr Peter Grant ED Staff Specialist Dr Natalie May ED Staff Specialist Dr Stephen Asha ED CNC Lauren Neuhaus CMC Rebecca Smith Trent Miller O&G HOD CHW A/Trauma CNC Ka Ki Lui SCH Network Trauma CNC Claire Collins / Sara Adams

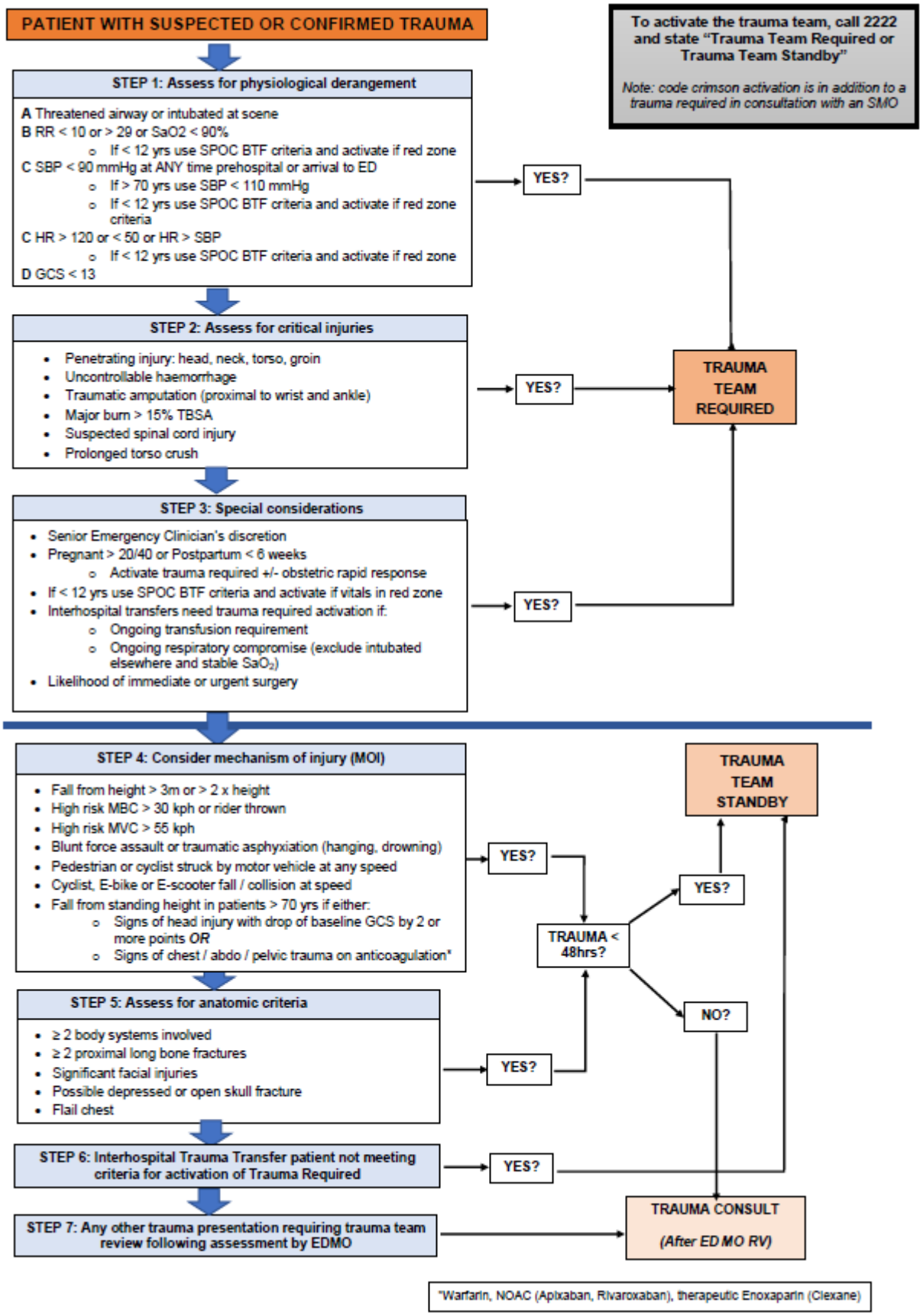
Revision and Approval History

Revision Date	Revision number	Reason	Coordinator/Author	Revision Due
Feb 2012	3	Review	Kate Curtis, Trauma CNC	Feb 2016
Jun 2014	4	Review	Kate Curtis, Trauma CNC	Jun 2017
Jan 2017	5	Review	Kate Curtis, Trauma CNC	Jan 2020
Jul 2024	6	Major review and change in title	Dr Mary Langcake, Director Trauma	Jul 2026
Feb 2025	7	Major Review: Flowchart updated to reflect body of document. Approved Feb 2025 CGDC. Uploaded 04.04.2025	Dr Mary Langcake, Director Trauma	Feb 2028
May 2025	8	Update: Flowchart amended – fall from standing height >70yrs. Uploaded 05.05.2025	Dr Mary Langcake, Director Trauma	Feb 2028

General Manager's Ratification

Angela Karooz (SGH) Date: 04.03.2025

APPENDIX 1: TRAUMA TEAM ACTIVATION TRIAGE CRITERIA FLOWCHART



APPENDIX 2: ATTENDANCE REQUIREMENTS

Response	Attendance time	Team members	Comments
TRAUMA REQUIRED	**IMMEDIATE ATTENDANCE**	**ACTIVATION OF ENTIRE TRAUMA TEAM** – Senior Staff - Emergency Department Staff Specialists, Consultant – Trauma/General Surgeon, (in hours) – Trauma/General Surgeon will attend at the request of the General Surgical Fellow/ Registrar (out of hours) – Duty Anaesthetist ▪ Mon-Fri 0730-1230hrs Consultant ▪ Mon-Fri 1230-2230hrs Fellow ▪ Mon-Fri 2230-0730 Registrar ▪ Weekends 0800-1800hrs Fellow ▪ Weekends 1800-0800hrs Registrar – ICU Outreach Registrar +/- ICU consultant +/- ICU Senior Registrar – Senior Nursing staff – ED Nurses, Trauma Case Managers * note no TCM cover on night shift – Junior Medical staff - Trauma/General Surgical Registrar, ED Registrars – Radiographer, – ED Administrative Officer – Orderlies – Social Worker – Other specialty surgical staff may be requested to attend based on the information received from the Pre-Hospital personnel.	Afterhours: – Trauma Fellow role is fulfilled by the General Surgical Fellow on Call – The Trauma Registrar role is undertaken by the General Surgical registrar (Pager 099).

Response	Attendance time	Team members	Comments
TRAUMA STANDBY	**Response Within 60 Minutes**	– Trauma/Gen Surg Registrar – ED Registrar – ED Nurse +/- Trauma Case Manager – Trauma/General Surgery Fellow will attend at request of Trauma/General Surgery Registrar	– Mon – Fri 0800 – 1630 - in case of multiple Trauma Standbys the Trauma Fellow +/- Consultant will attend ED to assist with workload. – Outside these hours, when multiple Traumas present, the ED Staff Specialist/Senior Registrar may upgrade a Trauma Standby to a Trauma Required if: – There is concern about the patient status (e.g. Physiological status) – Activity within the ED is high and competing priorities prevent review in a timely manner.
TRAUMA CONSULT	**Response Within 60 Minutes of Referral Being Made**	The Trauma Team is contacted by calling either: ▪ Trauma Registrar pager # 078 or pager # 1298 (in hours) or ▪ Surgical Registrar pager # 1530 or # 099 after hours requesting a “Trauma Consult”.	– In hours Monday - Friday 0730hrs-1600hrs. – After hours – 1600hrs - 0730am Weekdays & Weekends