North West Children's Major Trauma Network
Always Children First

Trauma Team

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Trauma Team Triggers:

1) On receipt of Major Trauma pre-alert from NWAS or Trauma Unit, self-presentation of trauma patient with or later presentation of:

Anatomical triggers:
Unmanageable airway (not protecting own)
Unsupportable inadequate breathing
Unstoppable haemorrhage (not controlled by simple pressure)

Physiological triggers: GCS 12 or less
Abnormal physiology: (guide values):

Age	**Heart Rate** beats/min		**Respiratory Rate** breaths/min	**Systolic BP** mmHg
	Tachycardia	***Bradycardia***		
0-7 days	>180	<100	<30 or >60	<60
7-28 days	>180	<100	<30 or >60	<80
1 month – 1 year	>180	<90	<30 or >40	<75
2-5 years	>140	<60	<25 or >30	<75
6-12 years	>130	<60	<20 or >25	<85
>12 years	>110	<60	<15 or >20	<90

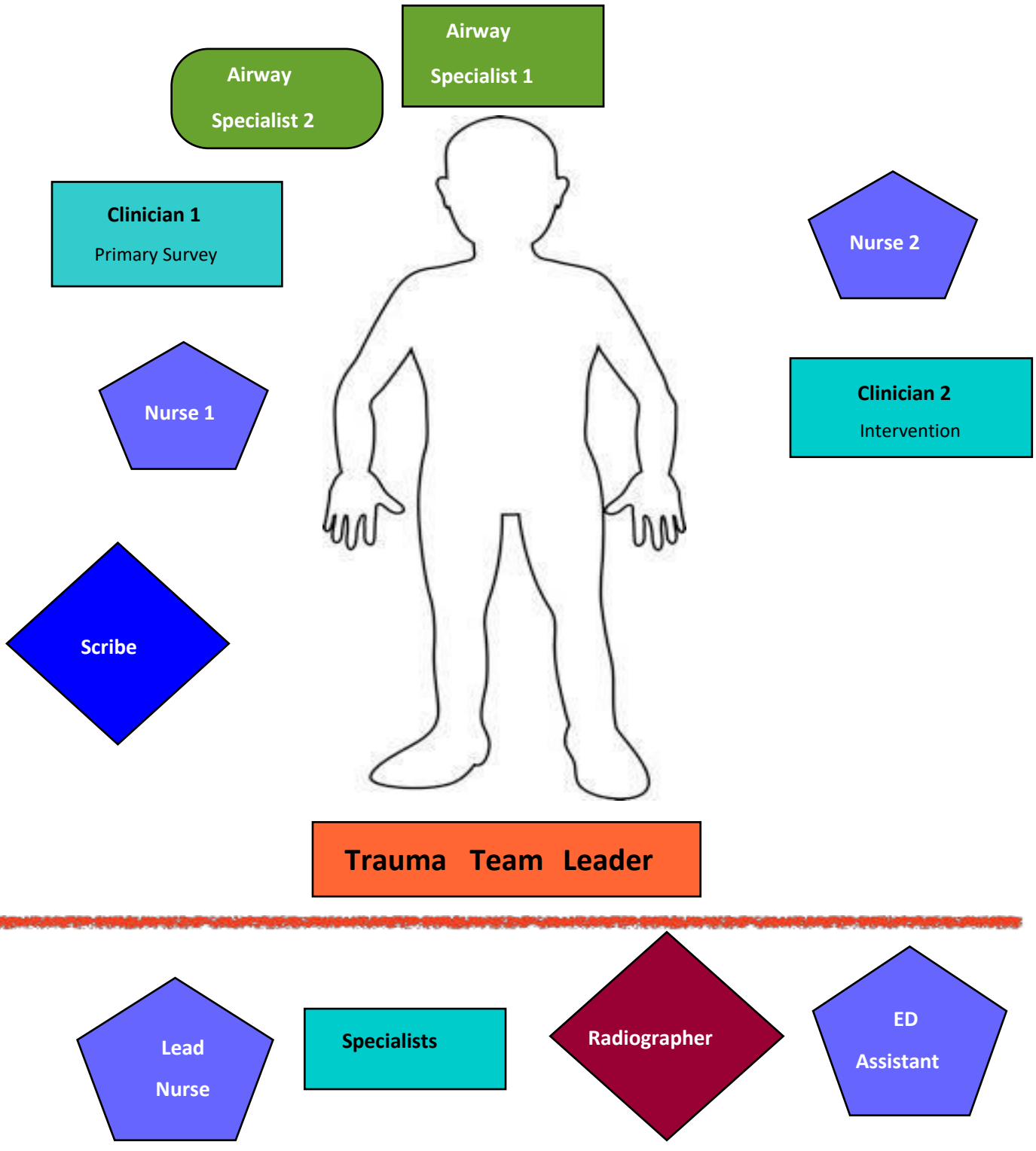
Clinical signs triggers
Flail chest
Penetrating trauma to head, neck, trunk, or limbs proximal to elbow or knees
Fractures of 2 or more long bones (humerus/femur/tibia) or fractured pelvis
Amputation proximal to wrist or ankle
Crushed, mangled or degloved extremities
New onset sensory or motor deficits (whole limb or partial)
Rigid abdomen
Severe burns >20%

Mechanism of injury triggers
Falls over 3 times patient's own height
Entrapment
Complete or partial ejection from a motor vehicle
Death in the same passenger compartment

Other triggers
Significant comorbidities
Pregnancy of 20 or more weeks
Other clinician concern

The North West Children's
Major Trauma Network

Trauma Team



Trauma Team

Trauma management is a team responsibility, which requires clear leadership by an experienced Trauma Team Leader (TTL) who is designated for each Trauma call. The Trauma Team should ideally assemble in the ED before the patient arrives.

The whole team should listen to the ambulance handover. The handover should be documented on the trauma board under the headings ATMIST. This will ensure reliability of the pre-hospital events and reduce the repetition of the story detracting from patient care.

Trauma team roles and responsibilities

Whilst roles and responsibilities are outlined in the list below, these are neither exhaustive nor inclusive. The TTL is the single point of contact for all information and decision-making and should work in tandem with the scribe. All team members should inform the TTL of their skills and competencies on arrival to the ED and perform designated roles. The team members should be identifiable as per local standard operating policy this helps to improve communication within the team. Staff should stay outside the resuscitation zone (behind the red line) unless they have been given specific permission to enter the area.

Trauma Team Leader – Agreed actions

Pre arrival check list

The following should be actioned prior to the patient's arrival where possible:

- All members of the Trauma Team should be identified, and key roles assigned by TTL
- Allocate scribe role and ensure clarity on responsibilities
- Team members 'book in' with scribe
- Personal Protective Equipment worn by all key personnel
- Warmed fluid prepared
- ATMIST documented on the trauma board

The TTL role is to command the resuscitation, coordinating staff and resources. They are rarely required to be 'hands on' with the patient.

This role may be handed over, but there must be a named lead for the entire patient journey.

The key responsibilities of the TTL are to:

- Log your details with the scribe
- Ensure team wear personal protective equipment (including lead gowns and sticker identifying the role), allocated roles are clear and personal introductions made
- Lead the handover (to be heard by all team members) from the pre-hospital team
- Immediately assess the child on entry to the ED bay to ensure CPR not required
- Appropriately direct team members in their actions according to their competence
- Establish priorities for investigation and management
- Order or authorise investigations and procedures
- Receive and interpret results of investigations and hand over to subsequent lead for child
- Consult with other specialties and make decisions including most appropriate clinician to undertake procedures.
- Liaise with MTC / LEH TTL if at trauma unit.
  - Ensure clear and documented handover
  - Decide on appropriate disposition of the patient
- Speak to relatives
- Check completeness of documentation
- Debrief team

Also consider the following may be required:

- Resuscitation is a continuum not dependent on geographical location
- Ensure everyone involved in patient pathway, including support services (e.g. blood bank), is aware of the patient's location as they move through the system
- Ensure appropriate leader and team for the entire patient journey
- Early calls to notify CT or specialty Consultants on call as required e.g. Neurosurgeon, Consultant General Surgeon, interventional radiology, cardiac surgeon
- Tranexamic acid (consider timeliness)
- Activate massive haemorrhage protocol
- CT within 60 minutes of arrival
- Antibiotics, urinary catheter, arterial lines and tetanus immunoglobulin*
- The possibility of parents being present when patients are being resuscitated
- Any cultural, religious and pastoral needs

*Please note there is a global shortage of immunoglobulin products and tetanus immunoglobulin should only be used when indicated in accordance with this guidance https://www.gove.uk/government/publications/tetanus-advice-for-health-professionals. Supply may be required from Pharmacy.

Clinician 1 - Agreed Actions

The key responsibilities of Clinician 1:

- Identify yourself to the TTL and log your details with the scribe
- Inform TTL of skills and competencies
- Wear personal protective equipment (including sticker with assigned role)
- Actively listen to the ambulance handover
- Conduct a primary survey
- Reassure patient on arrival, set the scene of what is happening
- Take AMPLE history (**A**llergies, **M**edications, **P**ast medical history, **L**ast meal, **E**verything else relevant)
- Vascular access (intravenous or intraosseous)
- Trauma bloods
- Undertake secondary survey
- Administer medications as directed by TTL
- Ensure notes are complete and clear plans are documented
- All findings or acute changes should be clearly communicated to the TTL
- Patients cool very quickly and this can have profound effects on haemostasis; ensure patient is kept warm.

Clinician 2 - Agreed Actions

The key responsibilities of Clinician 2:

- Identify yourself to the TTL and log your details with the scribe
- Inform TTL of skills and competencies
- Wear personal protective equipment (including sticker with assigned role)
- Actively listen to the ambulance handover
- Vascular access (intravenous or intraosseous)
- Trauma bloods
- Request investigations and chase results
- Prescribe medication and fluid
- Write in the notes and document all actions and findings
- All findings or acute changes should be clearly communicated to the TTL
- Patients cool very quickly and this can have profound effects on haemostasis; ensure patient is kept warm

Anaesthetist / Airway Specialist 1 - Agreed Actions

The key responsibilities of the anaesthetist:

- Identify yourself to the TTL and log your details with the scribe
- Wear personal protective equipment (including sticker with assigned role)
- Actively listen to the ambulance handover
- Reassure patient on arrival, set the scene of what is happening
- Assessment of airway and breathing with cervical spine immobilisation
- Ensure patient oxygenated and ventilated with no airway obstruction
- Take AMPLE history (**A**llergies, **M**edications, **P**ast medical history, **L**ast meal, **E**verything else relevant)
- Monitoring of vital signs
- Monitoring of fluid and drug administration
- Analgesia provision, in discussion with TTL.
- Provide anaesthesia for surgical procedures
- Provide a clear handover of care to lead consultant for next stage of definitive care
- Write in the notes and document all actions and findings with a clear plan
- All findings or acute changes should be clearly communicated to the TTL
- It is usually appropriate for the anaesthetist to talk to the patient and provide on-going assessment of GCS
  The anaesthetist will control the log roll
- Consider need for, and route of, endogastric tube
- Arterial lines may be indicated, to avoid delay to CT this can usually be done after CT or in the operating theatre; it should not delay either
- Communication with theatres role is shared with operating surgeons
- Anaesthetist may have the role of lead for massive transfusion protocol in PED, once in theatre this is their responsibility and blood bank must be informed of any changes to patient details and location

Anaesthetic Practitioner / Airway Specialist 2 - Agreed Actions

The key responsibilities of the anaesthetic practitioner:

- Identify yourself to the TTL and log your details with the scribe
- Wear personal protective equipment (including lead gown and sticker with assigned role)
- Actively listen to the ambulance handover
- To assist Airway Specialist 1 with their responsibilities
- ODP / Airway Specialist 1 takes emergency airway equipment / drugs to CT and re-stocks key equipment

Surgeon - Agreed Actions

The Surgeon focuses on assessment of the abdomen and perineum.

The key responsibilities of the surgeon:

- Identify yourself to the TTL and log your details with the scribe
- Inform TTL of skills and competencies
- Wear personal protective equipment (including lead gown and sticker with assigned role)
- Actively listen to the ambulance handover
- Primary assessment of thorax and abdomen including genitalia
- Secondary assessment of the abdomen
- May need to undertake thoracostomy or thoracotomy as directed by TTL
- Urinary catheter, where appropriate
- Stay with the patient in PED / CT until stood down by the team leader
- Assist with log roll
- Inform the Consultant Surgeon on call if patient has complex multisystem injury or is likely to need early surgery
- Liaise with theatres and anaesthetics colleagues for patients needing theatre, for paediatric surgical procedure
- Obtain necessary consent
- Write in the notes and document all actions and findings with a clear plan

Also consider the following:

- All findings or acute changes should be clearly communicated to the TTL
- Active discussion of the surgical plan with the TTL will allow the patient's priority needs to be addressed
- The possibility of parents being present when patients are being resuscitated

ED Nursing Staff – Nurse 1 and 2 Agreed Actions

Two members of the ED nursing staff are allocated to the team. They should work with Clinicians 1 and 2 and assist in their tasks. The nurses should not have to leave the resuscitation room, portering staff should be available to take samples to the labs etc.

The key responsibilities of the nurses:

- Identify yourself to the TTL and log your details with the scribe
- Wear personal protective equipment (including sticker with assigned role)
- Prepare necessary equipment for major trauma patient
- Agree responsibility for ongoing recording of vital signs
- Actively listen to the ambulance handover
- Document vital signs, including temperature, every 5 minutes in unstable patients and every 15 minutes otherwise
- Assist with IV therapies including rapid infuser, intraosseous devices, fluid and medication etc.
- Prepare for transfer to CT and/or theatre
- Assist with procedures as identified e.g. urinary catheter, chest drain
- Ensure patient identification labels are secured on the patient
- All findings or acute changes should be clearly communicated to the TTL
- Patients cool very quickly and this can have profound effects on haemostasis; ensure patient is kept warm
- Any cultural, religious and pastoral needs

Scribe - Agreed Actions

A member of the Trauma Team will be assigned by the TTL to be responsible of keeping the full record of the trauma call. They should have appropriate experience. They should also be positioned near the TTL so that all information passing through the TTL is then passed to them.

The key responsibilities of the scribe:

- Actively listen to the ambulance handover
    - Inform the team leader every 15 minutes that pass, or the agreed time interval as required by the TTL
- Use local standard operational protocols to record a chronological record of all events and information to include:

    - Personnel present at call including specialty and grade
    - Time of patient arrival
    - Mechanism of injury
    - Previous Medical History
    - Physical findings
    - Transfer times i.e. CT, theatre
    - Vital signs. Urine output. Glasgow Coma Scale

- Results of X-rays, scans and other investigations
- All interventions, with timings
- Fluids administered
- Drugs administered
- Summary of injuries
- Transfer of patient to receiving location including time of handover and transfer of leadership

- This role continues into CT and until the patient is discharged from the ED
- Inform the team leader if key observations have not been recorded e.g. temperature or GCS

Radiographer – Agreed Actions

The key responsibilities of the radiographer:

- Attend trauma room and perform portable plain film x-rays as required
- Contact CT radiographer if requested by TTL

Orthopaedic Surgeon - Agreed Actions

The key responsibilities of the orthopaedic surgeon:

- Identify yourself to the TTL and log your details with the scribe
- Inform TTL of skills and competencies
- Wear personal protective equipment (including stickers with assigned role)
- Actively listen to the ambulance handover if present
- Assessment of limbs, spine and pelvis including a neurovascular assessment prior to muscle relaxants
- Check or apply pelvic binder or splints
- Assessment of wounds and photographic documentation before covering
- Assessment of limb injury
- Initial dressing of wounds and stabilisation of fractures
- Liaise with theatres and anaesthesia colleagues for patients needing theatre, as appropriate.
- Obtain necessary consent
- Document findings and actions
- All findings or acute changes should be clearly communicated to the TTL
- Active discussion of the surgical plan with the TTL will allow the patient's priority needs to be addressed

Lead Consultant – Key Roles and Responsibilities

The Lead Consultant for the patient should be identified as soon as possible after initial assessment. (See local Lead Consultant Policy.)

The key responsibilities of the Lead Consultant:

- To lead the team in the acute clinical management of the patient.
- Completion of the Tertiary Survey
- To lead in the rehabilitation of the patient, including liaison with the Major Trauma Team, and the Trauma and Rehabilitation Coordinators to facilitate:
- The initiation of the Rehabilitation Prescription within the first 24 hours after admission
- The first multi-disciplinary team meeting within 48 hours of admission (including weekends)
- Weekly MDT meetings while the patient is an in-patient
- Ensure onward rehabilitation and follow-up as required in the community

Additional Trauma Team Members

If deemed necessary by the TTL, the Consultant On Call for any of the trauma specialities may be contacted via switchboard at any point.

The Paediatric Intensive Care Unit may also be contacted to provide support as necessary. This should be done by contacting PICU directly.

In the event that the specialty trainee for a speciality does not respond, or responds to a call but is unable to attend in the time period required by the patient's condition (as judged by the TTL), then the call will be escalated to the Speciality Consultant through Switchboard.

TTL and Speciality Consultant will then liaise and agree a plan of action that makes best use of available resources to provide optimal clinical care.