NHS South Western Ambulance Service NHS Foundation Trust

Clinical Guideline

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Title	Trauma Care: Accessing Trauma Services during the COVID-19 Pandemic
Supplements/ Replaces	Supplements: JRCALC Trauma Emergencies Overview
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1. Scope

1.1 This guideline outlines the operational function of the major trauma system across the South West during the increased burden on Intensive Care Beds and Major Trauma Centres during the COVID-19 pandemic.

2. Background and Definitions

2.1. Major trauma is the leading cause of death in all groups under 45 years of age and a significant cause of short and long-term morbidity. The National Audit Office (NAO) estimates that there are at least 20,000 cases of major trauma each year in England, resulting in 5,400 deaths and many others resulting in permanent disabilities requiring long-term care.

2.2 The challenge in delivering major trauma care is that whilst the clinical skills and experience required to deliver optimum care are considerable, for most clinicians, the frequency of exposure to cases is negligible.

2.3 The burden of COVID-19 on bed availability in adult MTC, particularly Intensive Care beds mandate that only those patients with the need of the specialist MTC care are triaged from scene directly to a MTC. There will be an increased expectation on TUs to deliver care to those patients able to be cared for there.

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2.4 When considering trauma, there are three types of designated hospitals across the South West, as detailed in Table 1.

2.5 Table 1 - Designated Centres

Type	Location	Description
Major Trauma Centre	• Derriford (Plymouth) • Bristol Royal Hospital for Children (under 16yrs only) • John Radcliffe (Oxford) • Southampton General • Southmead, Bristol (Patients under 16yrs must go to Bristol Royal Hospital for Children)	Provides the highest level of trauma care, through the provision of specialist services available 24/7
Trauma Unit	• Bristol Royal Infirmary • Dorset County (Dorchester) • Gloucester Royal • Great Western (Swindon) • Musgrove Park (Taunton) • North Devon District • Poole General • Royal Devon and Exeter (Orthoplastics) • Royal United Bath • Salisbury District (Orthoplastics) • South Devon (Torbay) • Royal Cornwall Hospital • Yeovil District	Provides a level of trauma care suitable to stabilise a patient suffering major trauma, prior to transfer to an MTC Ability to manage non-major trauma on-site.
Emergency Department	• Royal Bournemouth • Cheltenham General • Weston General (Will not accept patients under 16yrs unless peri-arrest or in cardiac arrest)	Not offering major trauma services

3. Guidance

3.1 Patient Assessment

3.1.1 All patients who may be experiencing trauma or major trauma must continue to be assessed using the Trusts standard CABCD assessment process, supported by JRCALC guidelines. Clinicians should be mindful of the additional Trust clinical guidelines and PGDs (e.g. tranexamic acid) which support trauma management.

3.2 Major Trauma

3.2.1 In all cases where major trauma is suspected, the ambulance clinician must complete the modified Major Trauma Triage Tool (MTTT) checklist in order to determine the most appropriate receiving hospital. The MTTT must be used in all cases of suspected/actual major trauma, even when the patient's nearest hospital is an MTC. Once a patient has been identified as having suspected Major Trauma the **24/7 Trauma Advice Line** must be contacted on **0300 369 0510** and the following information given:

- Vehicle Call Sign
- Clinician Name
- Location
- Reason for call (Referral to MTC OR Clinical Advice)
- Age of Patient
- Time of Incident
- Mechanism of Injury
- Injuries Sustained
- Signs (RR, HR, BP, GCS)
- Treatment

3.2.2 In the unlikely event that the Trauma Advice Line cannot be contacted, the clinician must proceed to the nearest MTC, calling them directly while en-route. Contact the Clinical Hub and ask that they attempt to contact the Trauma Advice Line.

3.2.3 The trauma Advice Line should be used for all patients that are deemed MTTT positive prior to transport to MTC and can also be used to discuss those patients that are not MTTT positive to seek advice on appropriate destination and management.

3.2.4 The Bristol Royal Hospital for Children and Southampton General Hospital are the designated paediatric MTCs. Patients known to be under the age of 16 years, who meet the Trust criteria for transportation to an MTC, must be conveyed to these units, in preference to another MTC, where it can safely be reached within 60 minutes. Please note that Southmead Hospital do not accept patients under the age of 16 years.

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3.2.5 Irrespective of whether they have major trauma, all paediatric patients (under 16 years old) who require admission within the current catchment area for Southmead Hospital must be transported to the Bristol Royal Hospital for Children, as Southmead do not offer paediatric services.

3.2.6 The decision on which hospital to transport a patient to is dynamic and may need to be reassessed at any time should the patient's condition change. If a patient deteriorates whilst en-route to an MTC, the lead ambulance clinician may consider diverting to another TU/ED where the travel time to the hospital is less than that to the MTC, and they believe that the patient may no longer be able to safely continue the journey.

3.3 Anatomical and Physiological Criteria

3.3.1 If the patient fulfils any of the physiological or anatomical criteria, the lead ambulance clinician is responsible for deciding whether the airway and catastrophic haemorrhage (if present) can be safely managed whilst on-route to the MTC.

3.3.2 In accordance with national guidance from the Major Trauma Clinical Director, the SWAST triage tool triggers have been modified to reduce over triage to MTC.

3.3.3 The physiological triage triggers remain **unchanged**. The anatomical triage triggers have been modified, with the changes summarised in Table 2.

3.3.4 Table 2 - Summary of MTTT Changes

Criteria	**Status**	**Rationale**
Extensive chest wall injury	Unchanged	
Neck or back injury with paralysis	Removed	If this is an isolated injury the patient is unlikely to require emergency MTC care. They can be assessed and imaged at TU and referred accordingly.
Suspected open, depressed or basal skull fracture	Modified	Only if the GCS motor score is 4 or less (flexing to painful stimulus should the patient be bypassed to MTC. Those patients with a higher GCS Motor score can be assessed and imaged at TU prior to referral to neurosurgical centre if required.
Amputated limb	Modified	Only limb amputations proximal to wrist or ankle joint will be deemed triage tool positive. However, extensive injuries to the hand or foot should be discussed with the Trauma Advice line to guide on destination to orthoplastics centre.

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Criteria	Status	Rationale
Extensive chest wall injury	Unchanged	
More than 1 proximal long bone fracture	Modified	This has been modified to **Bilateral femoral fracture.** Bilateral femoral shaft fractures is associated with high mechanism of injury and significant haemorrhage and is considered a marker for requirement for MTC care. Those with multiple long bone fractures should be discussed with the Trauma advice line to ascertain appropriate destination hospital.
Open long bone, midfoot or hind foot fracture	Removed	Whilst all open long bone fractures would benefit from care in a specialist orthoplastics centre, this is only required within 6 hours of injury. Orthoplastics centres are often available at the MTC. However, in the Wessex Trauma Network (Dorset and parts of Wiltshire), orthoplastics are provided at Salisbury, which will require MTC bypass. In East Devon, RD&E will also provide orthoplastics. All patients with open long bone fractures as an isolated injury should be discussed with the Trauma Advice line to guide on destination hospital. All open fractures should receive eraly antibiotic treatment with Co-Amoxiclav in accordance with PGD unless contraindicated as early as possible
Crushed, degloved or mangled limb	Unchanged	
Suspected major pelvic fracture	Unchanged	Patients should now only have pelvic immobilisation applied if a major pelvic fracture is suspected; where mechanism of injury is suggestive of a pelvic fracture **and** is accompanied by **any** of the following: • Haemodynamic instability/signs of shock. • Deformity on examination. Suspected open pelvic fracture due to bleeding PU, PV or PR (or scrotal haematoma).

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3.4 Airway and Catastrophic Haemorrhage

3.4.1 If either the airway and/or catastrophic haemorrhage (if present) cannot be safely managed, the patient must be transported to the nearest designated unit which may be an MTC or TU; whichever is the closest. If cardiac arrest is imminent, consideration should be given to utilising an Emergency Department not designated as a TU or MTC, where this is the closest hospital. This is a clinical judgement by the lead ambulance clinician caring for the patient, taking into consideration the additional travelling time to a TU or MTC, against the advantage of the trauma care available at these destinations.

3.4.2 If the airway and catastrophic haemorrhage (if present) can be safely managed, the lead clinician is responsible for deciding whether the patient can safely reach a MTC within a 60 minute travelling time from the incident. The 60 minute rule is applied purely to the travel time, and does not include time on-scene, such as that during an entrapment RTC.

3.5 Special Patient Groups

3.5.1 Consideration must be given to special groups of patients who are more prone to occult injury or complications from injury, they include:
- Children aged 12 and under.
- Pregnancy.
- Anticoagulants.

3.5.2 These have been retained for the following reasons:
- The impact of COVId-19 on paedatric major trauma bed availability is likely to be negligible,
- Late stage pregnancy has high chance of occult intra-abdominal pathology and physiological compensation often occurs in spite of heamorrhagic shock and these patients will benefit from the multidisciplinary care available at an MTC
- Anticoagulation is often present in younger age patients with single system comorbidity and likely to worsen haemorrahge

3.5.3 The special considerations of patients aged over 65 and polypharmacy have been removed.

3.5.4 These have been removed as though they are valid for “silver trauma” triage they may conflict with the introduced Exclusion Criteria (3.6) and factors of frailty and comorbidities take precedence

3.6 Exclusion Criteria

3.6.1 Previously the Major Trauma Triage Tool had no exclusion criteria. In light of the COVID-19 pandemic and the impact this will have on MTC capacity together with evidence from frailty and comorbidities on long-term survival exclusion criteria have been developed.

3.6.2 These criteria are

- Patients resident in a Nursing Home
  Patients with a Clinical Frailty Scale (Rockwood Score) of 5 and above. The Clinical Frailty Scale of 5 corresponds to “Mildly Frail”, andis defined as “*These people often have more evident slowing and need help in high order activities of daily living. Typical mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework*”.

3.6.3 This is in accordance with NICE Rapid Guideline: Critical Care (NG 159) that would advocate that only patients with a Clinical Frailty scale less than 5 are considered for critical care interventions, this is those patients in whom major trauma does not co-exist. Therefore with the addition of major trauma it is recognised that the ceiling of care will seldom involve critical care interventions.

3.6.4 There is solid evidence from TARN that those patients with major trauma and significant frailty have equivalent outcomes at TU with MTC care.

3.6.5 Any patient initially taken to a TU rather than MTC in accordance with these exclusion criteria can be assessed and discussed with MTC as a secondary transfer if it is felt appropriate and beneficial for their care.

3.6.6 Any patient with exclusion criteria where the MTC is closer than the nearest TU should still go to the MTC.

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3.7 Clinical Concern

3.7.1 There may be exceptional cases where a patients do not trigger the MTTT for bypass to a Major Trauma Centre, but the lead ambulance clinician on-scene has significant concerns that not taking the patient to the MTC may have a detrimental effect (e.g. due to the potential for underlying injury, or the risk of deterioration). In these circumstances, the clinician will contact the Trauma Advice line 0300 369 0510 for guidance as to destination. The decision of the clinician on the Trauma Advice line is definitive and **will** be accepted by MTC or TU receiving the patient.

3.8 Air Ambulance

3.8.1 Consider the use of an Air Ambulance (HEMS) or other air asset (e.g. SAR, Coastguard) where this will enable patients to reach an MTC within a 60 minute travel time that is otherwise not achievable by road, or when the patient could arrive at the MTC considerably quicker by air than by road. Air assets should also be considered when the patient would benefit from the skills of the critical care team in facilitating prolonged transfer times. However, it should be noted that during the COVID-19 pandemic there are significant restrictions on the ability to transfer high risk patients by air.

3.8.2 The decision to use air assets is a dynamic one, which should be reassessed throughout the patient journey. For example, if the decision has been taken to transport by road and traffic conditions unexpectedly deteriorate, consideration should be given to arranging a secondary transfer to an Air Ambulance. Contacting the HEMS desk through your normal Dispatcher will assist with identifying suitable transfer site en-route.

3.9 Early Alerts and Pre-Alerts

3.9.1 During the COVID-19 pandemic all pre-alerts of MTTT positive patients to MTCs will be delivered via the senior clinician on the Trauma Advice Line.

3.9.2 Enhanced and critical care teams are not required to use the Trauma Advice Line to pre-alert and they will still practice in accordance with standard procedure.

3.9.3 Pre-alerts to TU will be delivered by the responding clinician, flowing discussion with the Trauma Advice line if required.

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3.9.4 If the travel time to the major trauma centre exceeds approximately 60 minutes, the patient should be transported to the nearest TU. Please consider discussion with the Trauma Advice Line to support extended transfer times. If cardiac arrest is imminent, consider ED guidance in Para 3.4.1.

3.9.5 If the patient is transported to a TU or non-designated ED, the patient will be handed over and the ambulance resource will book clear in the normal manner. If a subsequent secondary transfer is required to an MTC, the TU/ED will book this with the Clinical Hub. In certain very limited circumstances the TU/ED may attempt a rapid turnaround. The original ambulance resource must continue to book clear from the incident. Whilst they may be reallocated to the subsequent transfer, the Clinical Hub must consider the priority of all emergency incidents within the local area.

3.10 Non-Major Trauma

3.10.1 If following completion of the Major Trauma Triage Tool the patient is not considered to have suffered from major trauma, they must be transported to the nearest TU. If the MTC is the closest hospital, then the patient should be transported there. Some Emergency Department may be able to accept certain minor trauma presentations such as an isolated arm fracture- see local guidance.

3.11 Secondary Transfers

3.11.1 Where a patient suffering major trauma requires transfer from a TU to an MTC, the TU will contact the Clinical Hub following agreed network policies and procedures to request an appropriate level of transfer. The transfer will be undertaken within normal Trust policies and practices.

3.12 Clinical Decision Making

3.12.1 The core responsibility for clinical decision making rests with the lead ambulance clinician on-scene. This may be the attending Paramedic (SPCC, SPUEC, HART), Bronze Commander, BASICS Doctor or other clinician.

3.12.2 Further support is available via the Trauma Advice line 24/7. This can be contacted by phone or airwave radio on **0300 369 0510**.

3.12.3 Enhanced and critical care teams are staffed by senior clinicians and are not required to utilise the trauma advice line to gain MTC acceptance and will function in accordance with pre-existing practice.

3.12.4 The Major Trauma Triage Tool has been agreed by a range of trauma and associated specialists within the Trauma Networks, and by the Trusts senior clinical team following extensive evaluation. Staff will receive the full support of the Trust when this clinical guidance and the triage tool are followed, or any exceptions can be clinically justified if the case has been discussed with the Trauma Advice line clinician.

3.13 Further On-scene Support

3.13.1 Early consideration should be given to whether additional clinical support maybe beneficial at the scene. Potential options include:

- Air Ambulance.
- BASICS.
- Critical Care Team.
- HART with Enhanced Skills

3.14 Major Trauma Centre Capacity

3.14.1 In the unlikely event that the demand placed on an individual MTC exceeds its capacity; the MTC will contact the Clinical Hub Duty Manager to highlight the potential capacity issue. The Duty Manager will escalate the issue to the Strategic Commander and Senior Clinical Advisor who are jointly responsible for resolving the issue. In the unlikely event that an MTC becomes unable to accept major trauma patients, the message will be disseminated to staff using the data head message function.

3.15 Major Incidents

3.15.1 During a major incident, the demand on each MTC may exceed capacity. The additional demand placed on ambulance resources by the extended travelling time to an MTC also may no longer be viable. The Senior Clinical Advisor will discuss the incident with the MTC Consultant, to decide whether to temporarily suspend the normal MTC bypass.

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3.15.2 In the unlikely event that a major incident is declared within a MTC and they are unable to accept major trauma patients, the Senior Clinical Advisor will discuss the incident with the MTC Consultant, to decide whether to temporarily suspend the normal MTC bypass procedure.

4. Documentation

4.1 In line with Trust Policy, a Patient Clinical Record must be completed and annotated appropriately. A Trauma Checklist must also be completed for all patients where major trauma is suspected. The Trauma Checklist must be completed even when the MTC is the nearest hospital to the incident. Any deviation from this guideline must be recorded, with any potential or actual adverse event reported through the incident reporting system.

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Appendix 1 - Major Trauma Triage Tool (CV-19)

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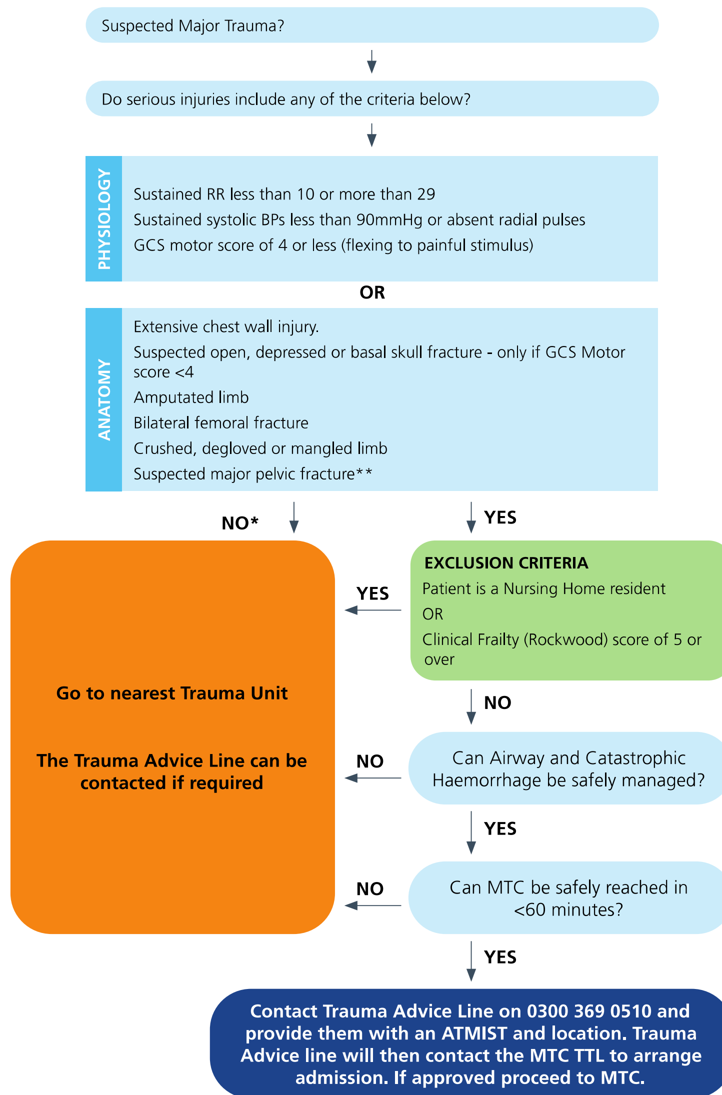
Major Trauma Triage Tool

Consider early critical care or HEMS activation

Consideration of special patient groups to heighten suspicion of injury:

- **Children aged 12 and under**
- **Pregnancy**
- **Anticoagulants**



** Suspected major pelvic fracture, where mechanism of injury is suggestive of a pelvic fracture AND is accompanied by any one or more of the following:

- Haemodynamic instability/signs of shock
- Deformity on examination
- Suspected open pelvic fracture due to bleeding PU, PV or PR (or scrotal haematoma)

*** DECISION SUPPORT**

If clinician remains concerned contact Trauma Advice Line 0300 369 0510 for advice on management or destination.

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