Sussex Trauma NETWORK

Prevention | Pre-hospital | Acute Care | Rehab

Sussex Trauma Network

Patient Pathways

Including Secondary Transfers

February 2025

STN Patient Pathways

Control Page

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Date approved:	
Name of author:	Geoffrey Bryant, Director of Education, Sussex Trauma Network, ED Consultant, UHS
Name of responsible committee/individual:	Sussex Trauma Network – Dr Peter Westhead, Clinical Director for the Sussex Trauma Network
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Target audience:	All specialities and services dealing with Major Trauma (Prehospital Services, UHS and Network TUs)
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Contents

1 Executive Summary

- Criteria for Pre-hospital Triage of patients with major trauma is as defined by the current algorithms of the two organisations providing pre-hospital care.
- The South-East Coast Ambulance Service (SECAMB) Major Trauma Decision Tree has been updated since November 2023.
- Hospital In Reach by Air Ambulance KSS is supported.
- Secondary Transfer protocols are defined and described.
- See Appendices 2 to 5 for summary algorithms.

2 Introduction

- The Sussex Trauma Network (STN) comprises several organisations involved in the care of patients with major trauma. They include:
    - 2 pre-hospital providers
        - South-East Coast Ambulance Service NHS Foundation Trust (SECAMB)
        - Air Ambulance Kent Surrey Sussex (AAKSS)
    - 1 Adult Major Trauma Centre (MTC)
        - Royal Sussex County Hospital
    - 4 Trauma Units (TUs)
        - Conquest Hospital, Hastings – adults and children
        - St Richard's Hospital, Chichester – adults and children
        - Worthing Hospital – adults and children
        - Royal Alexandra Children's Hospital, Brighton – Paediatric Trauma Unit only
    - 2 Local Emergency Hospitals
        - Eastbourne District General Hospital,
        - Princess Royal Hospital, Haywards Heath
    - Numerous rehabilitation and community care providers
- There is no Paediatric Major Trauma Centre in the STN. Children under 16 years old requiring MTC care are transferred to the nearest Paediatric MTC in South London, St Thomas' or Kings College Hospitals, or Southampton.
- This policy describes the initial passage of patients from pre-hospital to treating hospital, whether that be a Major Trauma Centre (MTC) and / or Trauma Unit (TU).
- It also covers secondary transfers from TUs to MTC.

- It does not cover repatriation from the MTC to a TU or any other hospital. This is covered by the STN Repatriation Policy.
- At present it does not include patient pathways to rehabilitation facilities, community resources or home.

3 Purpose of the Policy

The aims and objectives of this guideline are:

- To provide a system-wide approach for management of patients with major trauma
- To define appropriate patient pathways for these patients
- To list appropriate accepted routes of communication

4 Scope

The policy covers all major trauma patients within the Sussex Trauma Network. It replaces and supersedes all previous Patient Pathways covering Sussex Trauma Network and is applicable to adults and children.

5 Standard Operating Procedure

5.1 Pre-Hospital Triage

Pre-hospital Triage of patients with major trauma is performed by the two organisations providing pre-hospital care:

- South East Coast Ambulance Service NHS Foundation Trust (SECAMB)
- Air Ambulance Kent Surrey Sussex (AAKSS)

Both of these serve more than one trauma network and so have their own over-arching trauma triage protocols.

See Appendix 2 for the current SECAMB Major Trauma Decision Tree that has recently been updated.

Injured children under 16 years old whose condition warrants bypass of the nearest TU, will be taken to the nearest Paediatric MTC unless either:

- The MTC is more than 60 minutes travel time away
- The child's airway or any catastrophic haemorrhage cannot be stabilised

In which case the child will be taken to the nearest TU.

5.2 Hospital In Reach

Our local Air Ambulance (AAKSS) provide a primary enhanced care and transfer service and also a secondary time-critical inter-hospital transfer service to the population of Kent, Surrey and Sussex. Each helicopter is staffed by an experienced doctor and a paramedic with advanced prehospital trauma care skills.

There are occasions when AAKSS are called to assist a trauma patient in the community, who prior to the arrival of the AAKSS team, are moved from scene to the nearest Emergency Department (either a Trauma Unit or Local Emergency Hospital) for resuscitation.

Hospital In Reach is a framework to enable AAKSS clinical staff to work within the hospital premises and alongside the hospital team to expedite the stabilisation and transfer of a trauma patient where appropriate, but only ever with one organisation having clinical responsibility for the patient. This is covered by a AAKSS - Hospital In Reach Standard Operating Practice (SOP).

The Sussex Trauma Network agrees to working with AAKSS in the manner described by the SOP and has a Memorandum of Understanding with AAKSS.

There are three potential clinical scenarios that this SOP covers:

A. Patient brought to a hospital by SECAMB
   - AAKSS liaise with hospital trauma team leader (TTL) and agree either:
     i. AAKSS will take clinical handover and responsibility for the patient
     ii. AAKSS will leave the clinical responsibility with the hospital team
     iii. AAKSS will be co-opted in the trauma team working under the TTL for a specific intervention (most likely to be resuscitative thoracotomy or resuscitative hysterotomy)

B. Patient self presents to a non-trauma receiving hospital (LEH or MIU) and AAKSS are dispatched.
   - On arrival they would receive a handover and assume clinical responsibility for the patient as deemed necessary by the hospital TTL

C. Hospital used as a rendezvous
   - AAKSS would ask the senior lead in the Emergency Department for use of a resuscitation bay, but the patient care, clinical responsibility and governance remains with AAKSS. The AAKSS team may in turn co-opt members of the hospital team into their team if required.

5.3 Secondary Transfer Protocols

5.3.1 Principles

1. These protocols apply after a patient has been assessed at a Trauma Unit (TU) and the assessing Team determine that the patient may benefit from transfer to a Major Trauma Centre (MTC) or cannot be appropriately managed at the TU.

2. Mechanism of Injury or “polytrauma” are NOT of themselves indications for secondary transfer to the MTC.

3. Patients triaged to a TU should be assessed and stabilised within the Emergency Department (ED) and not 'turned around' at the front door.

4. Most patients undergoing secondary transfer to the MTC should pass through the Emergency Department at the MTC, where a Trauma Call will be invoked.

   Senior staff in the MTC ED will determine the type of Trauma Call put out, based on the information given prior to transfer or the condition of the patient. The Trauma Call will be co-ordinated by ED clinical staff.

   This process will occur even if the patient's transfer has been authorised by a MTC specialist, and the patient referral has been accepted by the specialist. However, the specialist team must participate in the Trauma Call.

5. There are two levels of secondary transfer as follows:

   a. **Immediate Secondary Transfers** (<60 minutes) – for patients with life threatening conditions. See Immediate Secondary Transfers for a full description and criteria, and see Appendix 3 for the algorithm.

      This level of transfer should be regarded as an Emergency Medicine to Emergency Medicine transfer and does not involve discussion of the case with a non-Emergency Medicine MTC specialist and so should **ONLY** be used when there is life-threatening urgency and little or no doubt about the appropriateness of transfer to the MTC.

   b. **All Other Secondary Transfers (Non-immediate) or requests for advice** – For all other referrals, there are three separate methods of negotiating the transfer. See All Other Secondary Transfers (Non-immediate) or requests for advice for a full description and Appendix 4 for the algorithm.

      All of these non-immediate transfers involve discussion between a non-Emergency Medicine specialist at the referring hospital and a non-Emergency Medicine MTC specialist.

      It is the responsibility of MTC specialist:
      - to determine if transfer is appropriate,
      - to agree with the referring team when the transfer should occur i.e. whether same-day or delayed,
      - to inform the MTC Bed Management Team of the expected admission before arrival so the process of identification of a suitable bed can start early,
      - to inform the MTC ED of the accepted transfer,

- to accept responsibility for and assess the patient once they arrive at the MTC.

6. All secondary transfers should only occur after a doctor at the receiving hospital has been informed of and agreed to the transfer and accepted the referral.

7. MTC specialists should never advise transfer of a patient to the MTC but decline to accept the referral. The need for a Trauma Call, as described in 5.3.1.4 above, is NOT a reason for the specialist to decline a referral.

8. The referring doctor should never be asking for advice from the duty MTC ED Consultant.

9. The MTC will provide 24/7 access to consultants in trauma and orthopaedics. neurosurgery, cardiothoracic surgery, general surgery, paediatric surgery, liver surgery and intensive care to discuss the appropriateness and feasibility of transfer.

10. Wherever possible in the appropriate timeframe, discussion between sending and receiving hospital should be between Consultant and Consultant. If a Consultant cannot assess the patient sufficiently quickly (e.g. in the Immediate Transfer group), then the Consultant may delegate this role to a doctor who is able and authorised to:
    a. perform an accurate assessment of the patient's condition and needs,
    b. agree to and arrange admission at the "sending hospital" if the outcome of the consultation is not to transfer the patient straight away,
    c. act as host and arrange theatres etc. if the outcome of the consultation is for a specialist surgeon to attend perform the surgery at the "sending hospital".

11. If the Consultant of the relevant speciality team responsible for the patient at the TU believes that a referral for transfer has been inappropriately declined by the MTC specialist or that the patient's condition has changed such that transfer may now be appropriate, they should have a Consultant to Consultant discussion with the relevant MTC speciality.

12. Exclusion Criteria for transfer of patients from TU to MTC:
    a. patient transfer declined by the consultant at the MTC
    b. patient over the age of 75 with fixed, dilated pupils after head injury and a GCS of less than 13 or a motor score of less than 4
    c. patient for whom end-of-life care is being given or is appropriate
    d. patient with a relevant advanced directive declining such an action

13. When arranging Emergency or Urgent secondary transfer to the MTC always contact the Ambulance service. They will assess and decide whether transfer by HEMS might be more appropriate. Patients considered to have risk of COVID-19

should NOT be transferred by helicopter – because time to clean the helicopter is prohibitive.

14. The two algorithms below (Appendices 3 to 4) are for adults and children from their 16th birthday upwards.

    For children under 16, referrals should be direct to the relevant Paediatric MTC – St George's Hospital, Kings College Hospital or Southampton General Hospital. When transferring children to the Paediatric MTC, the telephone numbers to contact the ED Consultants are as follows:

    a. Kings College Hospital: 0203 299 9000 ext. 5447
    b. Southampton General Hospital: 023812 206 666 (Direct dial Resus Priority Phone).

5.3.2 Immediate Secondary Transfers (<60 minutes)

These transfers are for patients with immediately life-threatening conditions. See Appendix 3 for the algorithm.

This level of transfer should be regarded as an Emergency Medicine to Emergency Medicine transfer and does not involve discussion of the case with a non-Emergency Medicine MTC specialist and so should **only** be used when there is urgency and little or no doubt about the appropriateness of transfer to the MTC.

The referring doctor should not be asking for advice from the duty MTC ED Consultant.

These patients will include those who have been taken to a Trauma Unit for attempted stabilisation due to distance from the MTC (> 60-minute isochrone), as well as patients who either deteriorate at the TU or have been found after initial assessment to have a life-threatening condition.

Examples of immediately life-threatening pathologies suitable for immediate secondary transfer:

1. Extradural haematoma with altered GCS
2. Traumatic subdural haematoma in patients <70 years old and requiring airway support
3. Proven vascular injury with on-going bleeding
4. Truncal penetrating injury with haemodynamically instability or evidence of pericardial tamponade
5. Penetrating injury to the neck with expanding haematoma

Patients meeting the exclusion criteria (see above) will not be suitable for immediate transfer.

5.3.2.1 Steps in Immediate Secondary Transfer Protocol

1. Contact SECAMB to arrange an immediate transfer to RSCH.

- This should be done even if the patient is suitable for helicopter transfer because SECAMB are required to co-ordinate the process and arrange for an ambulance to convey between East Brighton Park and the MTC.
- If the patient requires hyper-acute or time-critical transfer from the Emergency Department, consider HEMS transfer request to AAKSS. Ring AAKSS direct to discuss suitability and the process. See Appendix 7 for current AAKSS Transfer Process and Transfer Checklist.

2. Treating senior clinician in TU contacts the ED Consultant at RSCH (01273 696955 ext [redacted]) to inform them of the transfer.

   If there is no reply from extension [redacted], try also:
   - extension [redacted] (second ED consultant or night registrar)
   - or extension [redacted] (nurse in charge).

5.3.3 All Other Secondary Transfers (Non-immediate) or requests for advice

For all other referrals, there is a separate pathway. See Appendix 4 for the algorithm.

These transfers involve discussion with a non-ED MTC specialist and it is the responsibility of that specialist to determine if transfer is appropriate **AND** to inform the ED of the accepted transfer and accept responsibility for the patient once they arrive at the MTC.

Do not ask MTC ED Consultants for advice about appropriateness of otherwise of non-immediate transfers.

Most if not all of these patients, if transferred to the RSCH, should pass through the Emergency Department and have a repeat Trauma Call.

5.3.3.1 Steps in Non-Immediate Secondary Transfer Protocol

1. Contact the appropriate MTC specialist. In each case this contact should ideally be from a consultant. But in all cases contact should only occur after discussion with the consultant leading the patient's care at the TU.

   - Paediatric major trauma referrals should be made to your normal receiving Paediatric MTC.

   - For patients with an isolated head injury or spinal injury contact the duty Neurosurgical or Spinal Consultant or Registrar at RSCH (01273 696955) AND complete the on-line referral form on www.referapatient.org/refer-a-patient.

   - If the referral is to Trauma and Orthopaedics first complete relevant online referral via nww.bsuh.nhs.uk/clinical/teams-and-departments/trauma-and-orthopaedics/ which can ONLY be accessed from hospital computers.

This process is described in more detail in the document - ***Processes for Urgent Referral to the Trauma and Orthopaedic Service at the Major Trauma Centre at the Royal Sussex County Hospital*** – which can be viewed at www.uhsussex.nhs.uk/pro-resources/urgent-referral-to-trauma-and-orthopaedic-service-at-rsch-mtc/.

- For all other referrals (non-orthopaedic, non-neurosurgical, non-spinal) contact duty Consultant for the relevant speciality at the MTC.

- DO NOT make adult trauma referrals by any other routes.

2. If transfer is agreed, then identify whether this is the same day or delayed.
   - If transfer is delayed, patient should be admitted to the TU under the referring speciality pending transfer.
   - If the transfer is the same day:
     i. Arrange transport
     ii. Informed ED Consultant at the MTC when the patient is leaving – see extension number above.

6 Monitoring Arrangements

Any case not complying with these pathways should be notified according to the ST Clinical Governance Framework. If appropriate by completion of the STN Incident Report Form whose link is on the Framework page.

7 Links to other SOPs and Trust policies

This guidance refers to and links with the following STN publications or other documents:

- STN Repatriation Policy
- STN Clinical Governance Framework
- Processes for Urgent Referral to the Trauma and Orthopaedic Service at the Major Trauma Centre at the Royal Sussex County Hospital

It also refers to the AAKSS Hospital In-Reach SOP.

8 Appendices

8.1 Appendix 1 – Abbreviations

AAKSS	Air Ambulance Kent Surrey Sussex
CCD	Ambulance Service Critical Care Desk
DNACPR	Do Not Attempt Cardiopulmonary Resuscitation
ED	Emergency Department
EM	Emergency Medicine
HEMS	Helicopter Emergency Medical Service
LEH	Local Emergency Hospital
MTC	Major Trauma Centre
MIU	Minor Injuries Unit
OPEL	Operational Pressures Escalation Levels
RSCH	Royal Sussex County Hospital
SECAMB	South East Coast Ambulance Service
SOP	Standard Operating Practice
STN	Sussex Trauma Network
TTL	Trauma Team Leader
TU	Trauma Unit

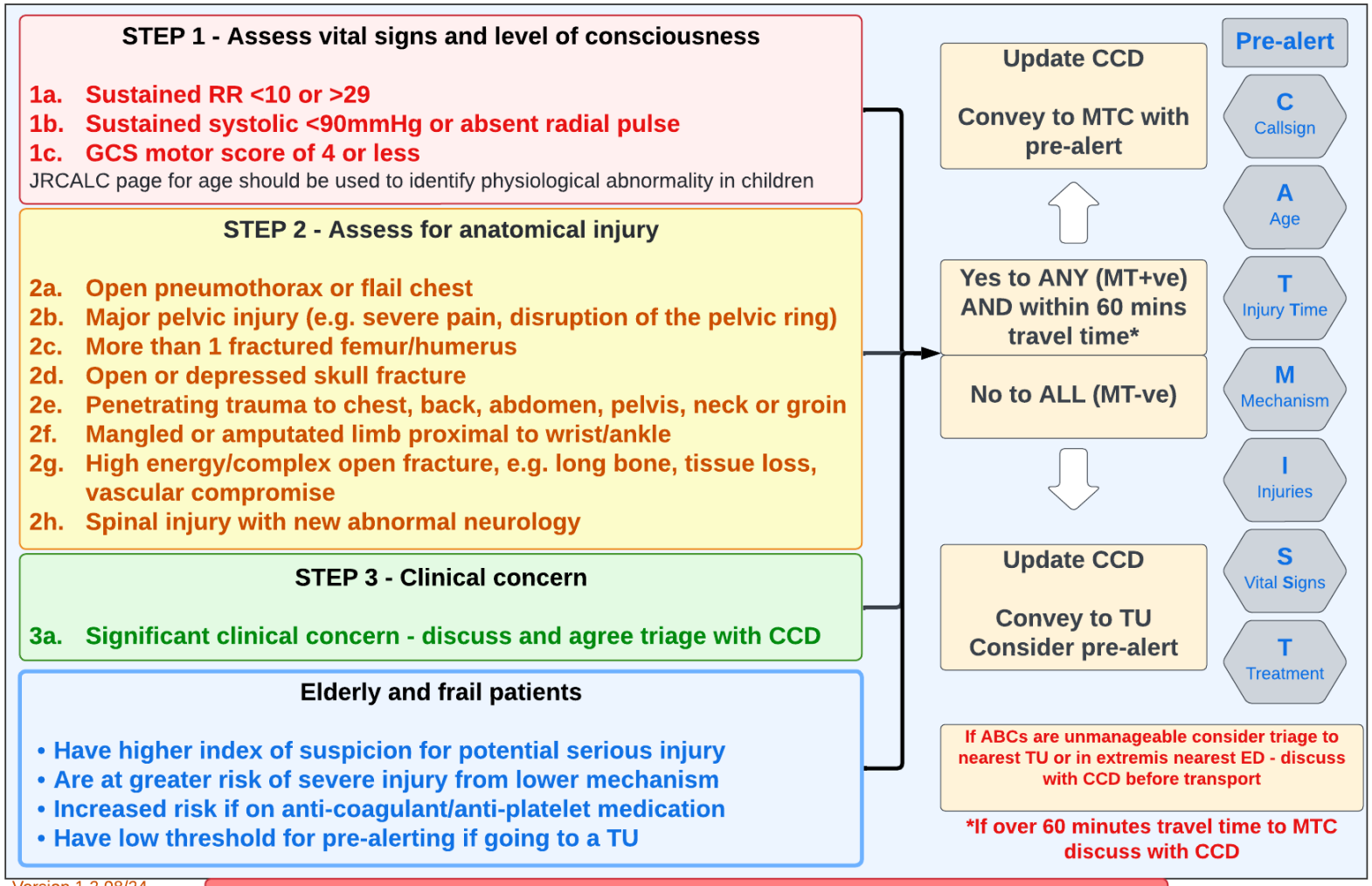
8.2 Appendix 2 – SECAMB Major Trauma Decision Tree

See on the next page

Major Trauma Triage Tool

South East Coast Ambulance Service NHS
NHS Foundation Trust

Apply to all adults or children with possible major trauma



Version 1.2 08/24

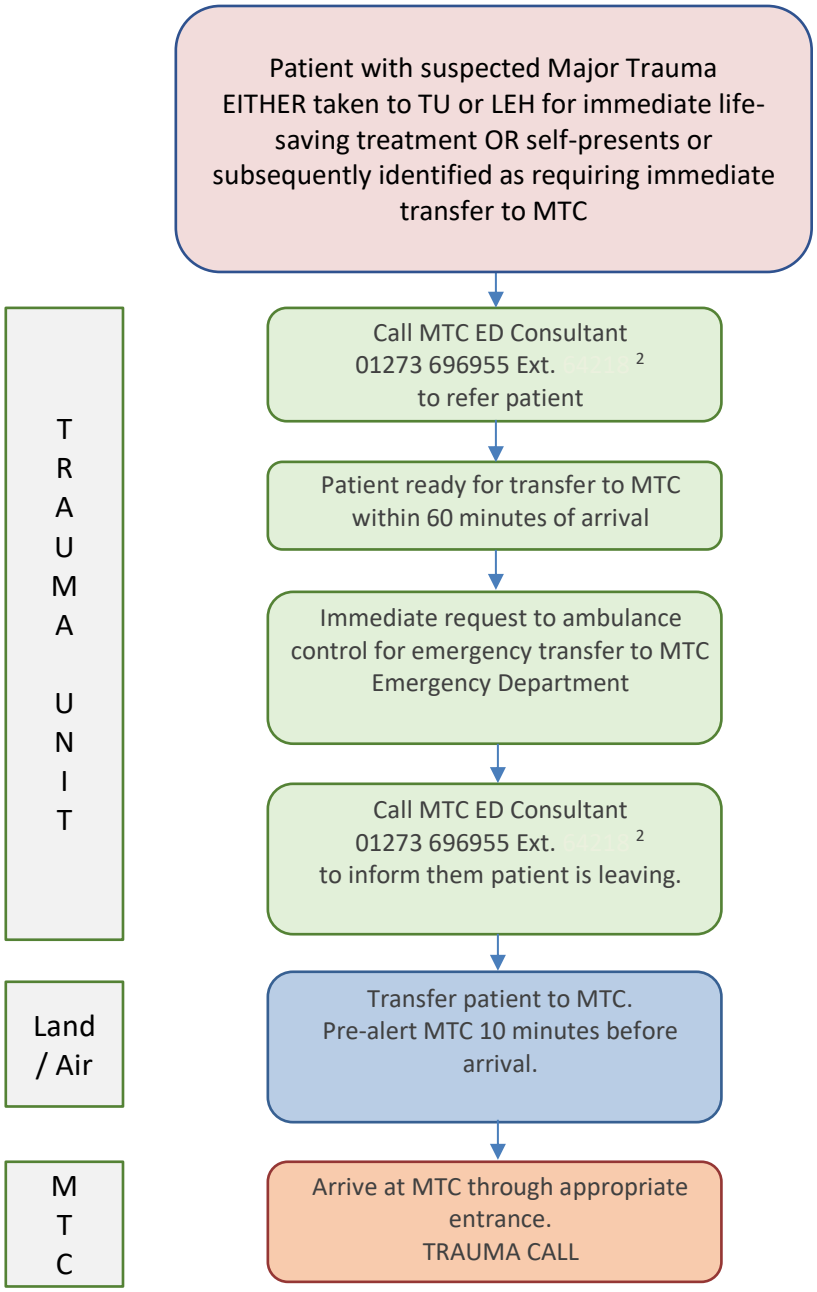
Provide an early scene update to CCD for all potential major trauma patients - Talk Group 16 or call 0300 123 1252

8.3 Appendix 3 – Immediate Transfers

Immediate Transfers (<60 minutes)

For all Adults and Children from their 16th birthday

See principles listed above

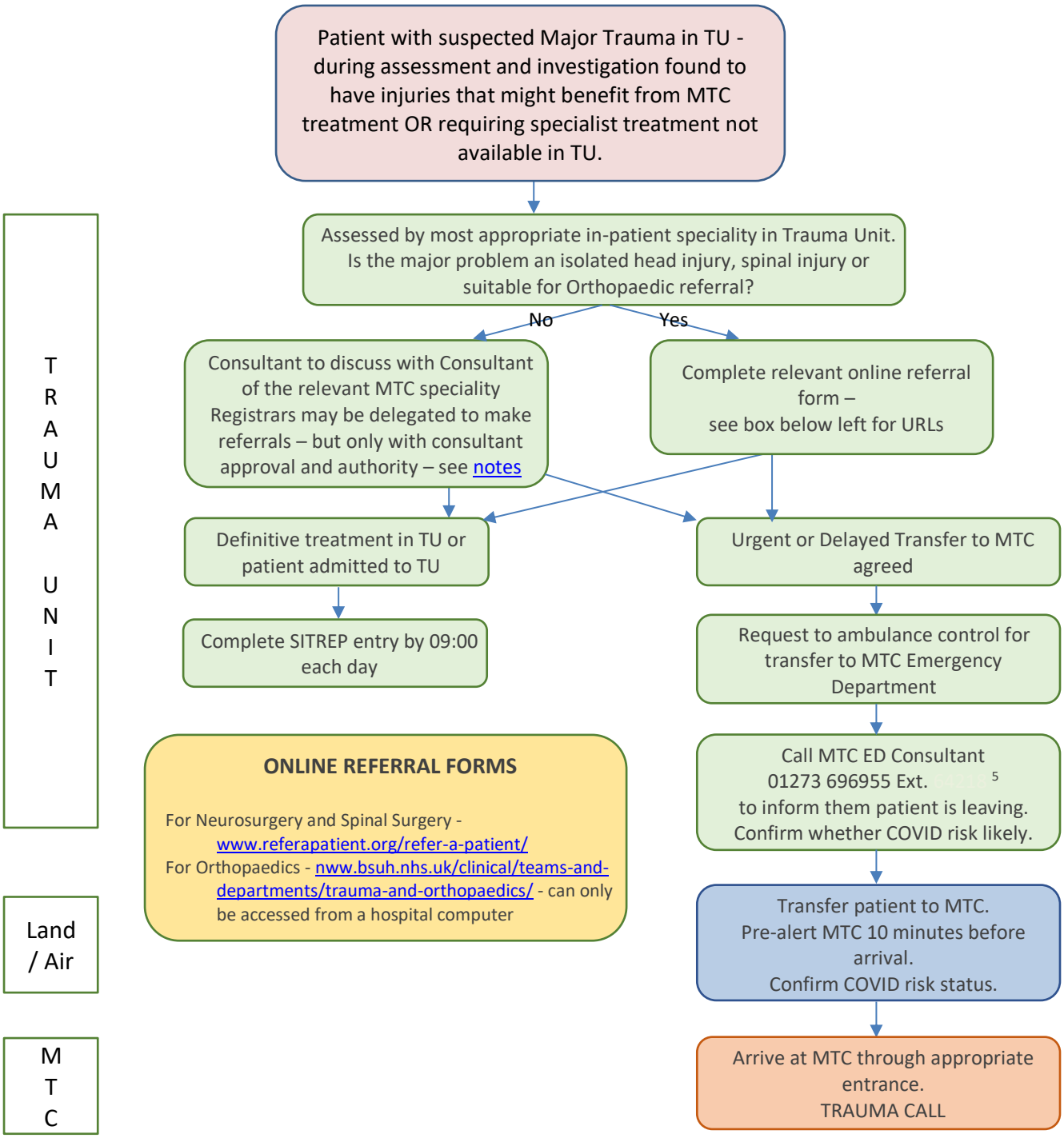


Notes:

1. When transferring children under 16 to a Paediatric MTC, the telephone numbers to contact the ED Consultants are as follows:
   a. Kings College Hospital: 0203 299 9000 ext. 5447
   b. Southampton General Hospital: 023812 206 666 (Direct dial Resus Priority Phone).
2. See above for alternative ED Consultant contact numbers

8.4 Appendix 4 – All Other Transfers

All Other Transfers / Requests for Advice (Non-immediate)



For all Adults and Children from their 16th birthday. See principles listed above.

Notes:

4. When transferring children under 16 to a Paediatric MTC, the telephone numbers to contact the ED Consultants are as follows:
   a. Kings College Hospital: 0203 299 9000 ext. 5447
   b. Southampton General Hospital: 023812 206 666 (Direct dial Resus Priority Phone).
5. See above for alternative ED Consultant contact numbers

8.5 Appendix 6 – National OPEL Triggers for Major Trauma Centre and Network

MAJOR TRAUMA	Major Trauma Specific Trigger Points
OPEL - 1	**MAJOR TRAUMA CENTRE** MTC able to receive critically injured patients into appropriate critical care area **MAJOR TRAUMA NETWORK** Network functioning as currently; triage tool at steps 1 & 2 (limited) only
OPEL - 2	**MAJOR TRAUMA CENTRE** MTC can provide immediate resuscitation, emergency surgery and specialist critical care for life threatening conditions **but** limited capacity for other categories of automatic transfers or ward level patients. **MAJOR TRAUMA NETWORK** Any one of: • MTC at **OPEL-2** • 1-3 TUs not accepting triage positive trauma (if all TUs in network escalate to **OPEL-3**) • 1-3 TUs or critical care transfer service not able to support time critical secondary transfers (if all TUs in network escalate to **OPEL-3**) • Pre-hospital running only primary transfers
OPEL - 3	**MAJOR TRAUMA CENTRE** MTC can provide immediate resuscitation, emergency surgery and specialist critical care for life threatening conditions **but** MTC unable to accept other categories of automatic transfers or ward level patients. **MAJOR TRAUMA NETWORK** 1. MTC at **OPEL-2 AND** any of the below: • Pre-hospital running primary transfers and time critical secondary transfers only • 1-3 TUs only able to accept triage positive patients with airway compromise or life-threatening haemorrhage • 1-3 TUs or critical care transfer service not able to support time critical secondary transfers **Or** 2. Adult or paeds MTC in network at **OPEL-3** **Or** 3. All TUs only able to accept triage positive patients with airway compromise or life threatening haemorrhage **Or** 4. All TUs and / or critical care transfer service not able to support time critical secondary transfers
OPEL - 4	**MAJOR TRAUMA CENTRE** Any one of: • No capacity for critical care • MTC cannot provide immediate resuscitation and/or emergency surgery **MAJOR TRAUMA NETWORK** Any one of: • Pre-hospital service unable to run primary transfers • All TUs unable to accept triage positive trauma and support time critical transfers • Any MTC is at **OPEL-4** (either adult/paeds/combined MTC) No rapid access to specialist care

8.6 Appendix 7 – AAKSS HEMS Transfer Request and Transfer Checklist

HEMS Transfer Request

Is your patient a hyper-acute or time critical transfer from the Emergency Department?

↓

Is the patient within the scope of AAKSS?
Refer to transfer checklist

↓

- Contact HEMS dispatch desk at the earliest opportunity on 0300 123 5811 or 0782 798 2152
- Provide a short summary of the transfer and a contact telephone number
- Dispatch desk can advise on immediate availability and weather
HEMS Clinical Managers will call back within 5 minutes

↓

- Complex or level 3 transfers may require a HEMS Consultant review
- Less Complex transfer should be dispatched on with minimal delay
- If AAKSS HEMS are unable to support the transfer, please contact the Ambulance Service to arrange land transfer

↓

If the transfer is accepted, the HEMS coordinator will provide an ETA and activate the helipad or make arrangements where required for an ambulance transfer to the secondary landing site (Covid-19 duration only)

Air Ambulance
Kent Surrey Sussex

LIFE-SAVING CHARITY REGISTERED 1021367 CHARITY NO. FUNDED BY YOU

HEMS Transfer Checklist

Patients to meet ALL the following criteria:

- Adult patients (paediatric patients considered on a case by case basis);
- Hyper-acute transfer (patient still in the Emergency Department);
- From a hospital with either a primary (on-site) or secondary (off-site) helicopter landing site that is available (not all sites are available after dark)
- To a hospital with an available primary (on-site) helicopter landing site (some secondary sites will be considered on a case by case basis)
- Ideally to the Emergency Department at the receiving hospital
- NOT risk or confirmed for Covid-19

Guidance around ***clinical parameters*** suitable for AAKSS transfer (all numerical values are maximums):

Ventilation:

- FiO2 ≤ 0.6
- PEEP ≤ 10 cmH20
- Peak pressure ≤ 35 cmH20
- Stable on Oxylog 3000 plus or equivalent transport ventilator

Circulation:

- Noradrenaline ≤ 0.3mcg/kg/min
- Not requiring more than 1 unit/hr PRC *

* if > 1 unit/hr but haemorrhage controlled at sending hospital then d/w AAKSS team

Sedation:

- If required, comfortable on analgesic and sedative infusions (e.g. fentanyl, remifentanil, propofol or midazolam) requiring less than 50ml/hr

24/7 landing sites are available at:

- Kings College
- TWH Pembury
- Maidstone Hospital
- WHH Ashford
- QEQM Margate
- Eastbourne Hospital
- Southampton Hospital

All other sites are daylight only

8.7 Appendix 8 – Important Version Changes

Version	Changes

9.10	• Fuller Summary
	• Fuller Introduction
	• More about paediatric patients, especially in Pre-Hospital Triage
	• New section on Hospital In Reach from AAKSS
	• Secondary Transfer Protocols section re-written for clarity with sub-sections. Also:
	  ○ clarification of the differences between Immediate and Non-Immediate Secondary Transfers
	  ○ paediatric patients paragraph
	  ○ isolated spinal injuries pathway same as isolated head injury
	  ○ removal of Major Trauma Advice Consultant
	  ○ removal of separate Pathways A & B for non-immediate transfers
	• New SECAMB Major Trauma Decision Tree
	• Updated Algorithms and AAKSS HEMS Transfer Request and Transfer Checklist
	• Removal of Appendix 5
	• This Appendix added

9.11/12	Not adopted
9.13	• 2. Introduction, 5.1 Pre-Hospital Triage. Clarification about age cutoff between paediatric and adult MTC responsibilities. • 5.3.1 Secondary Transfer Protocols, and 5.3.2 significantly updated • Minor correction
9.14	• 5.4 SITREP reports removed