Midlands Critical Care & Trauma Networks NHS

Official

Trauma Unit / Local Emergency Hospital to Major Trauma Centre Life ± Limb Threatening Transfer Policy

Adult and Paediatric Call Arrangements

Midlands Critical Care, Trauma and Burns Networks
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Description: This document contains the operating principles and call arrangements when enacting a Life ± Limb threatening Transfer from Trauma Units and Local Emergency Hospitals who are part of the: Birmingham, Black Country, Hereford & Worcester Trauma Network Central England Trauma Network North West Midlands & North Wales Trauma Network
Superseded document(s): TU (LEH) to MTC Hyper acute (Delayed Primary) Transfer Policy 2018 Adult & Paediatrics Call Arrangements TU (LEH) to MTC Hyper acute (Delayed Primary) Transfer Policy 09-17 Adult & Paediatrics Call Arrangements Incorporates spinal transfer guidance.
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Version control and record of amendments

Date	Amendment	Lead
September 2017	Change to Paediatric call arrangements included in this document on page 5	Dr T Newton
June 2018	Page 4 and 5 – breakdown of network call arrangements	S Graham
June 2018	Page 6 – inclusion of FICM Management of perceived devastating brain injury after hospital admission - Consensus Statement, January 2018	S Graham
Sept 2018	Section 11 – word change for clearer call arrangements	S Graham Dr T Newton
March 2021	Complete review of document. Change of name (as agreed at PaQ Board) to Life ± Limb Threatening Transfers Updates to formatting Removed (no.6) Pre-Hospital Transfer Actions and (no.10) Ambulance Transport as information was duplicated elsewhere in the document.	S Graham Dr J Hulme Dr M Nash Dr A Naveed

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1. Operating principle

Even in a well-functioning trauma system there will be occasions when patients who warrant Major Trauma Centre (MTC) care are initially cared for in Trauma Units (TU) or Local Emergency Hospitals (LEH). For a patient who requires MTC level of care for immediate intervention (including, but not restricted to, surgery, interventional radiology, critical care management) there should be no delays to transfer.

Patients eligible to undergo Life ± Limb Threatening Transfer are those needing immediate life / limb saving intervention at a MTC where it cannot be delivered in a TU or LEH or within an appropriate timescale there.

Patients in a TU / LEH meeting the Life ± Limb threatening transfer criteria may have arrived at hospital in this condition or deteriorate soon after arrival (i.e. they are still within the Emergency Department investigative / resuscitative phase of treatment).

2. Adult patient call arrangements

A principle of **"send and call / package and call"** will be used. The Trauma Team Leader (TTL) in the TU / LEH can identify those patients meeting the criteria for Life ± Limb threatening transfer.

2.1 For transfers by WMAS / Midlands Air Ambulance (MAA) to Queen Elizabeth Hospital Birmingham from:

- Sandwell District General Hospital, West Bromwich
- City Hospital, Dudley Road Birmingham (LEH)
- Manor Hospital, Walsall
- Russell's Hall Hospital, Dudley
- Royal Wolverhampton Hospital (New Cross), Wolverhampton
- Heartlands Hospital, Birmingham
- Worcester Royal Hospital, Worcester
- County Hospital, Hereford
- Alexandra Hospital, Redditch (LEH)
- Good Hope Hospital, Sutton Coldfield (LEH)
- Solihull Hospital, Solihull (LEH)

2.1.1 For transfers by WMAS to University Hospital Coventry & Warwickshire or University Hospital of North Midlands are:

- George Eliot Hospital, Nuneaton
- Royal Shrewsbury Hospital, Shrewsbury
- South Warwickshire Foundation Hospital, Warwick (LEH)
- Princess Royal Hospital, Telford (LEH)
- County Hospital, Stafford (LEH)

The TTL will contact the Regional Trauma Desk (**RTD: 01384 215696**); who will then contact the MTC TTL as a conference call via the relevant Emergency Department 'red phone'. (*The RTD will **NOT** take calls regarding **non**- Life ± Limb threatening adult transfers).*

N.B For patients within BBCHW Trauma Network requiring Life ± Limb threatening transfer the NORSe system for neurocritical care referrals to University Hospital Birmingham **should NOT be used as it adds delays to patient care.** Information regarding injury and ongoing management will be added to NORSe at a later time by UHB neurosciences as appropriate.

2.2 For transfers by East Midlands Ambulance Service (EMAS) / The Air Ambulance Service (TAAS) to University Hospitals Coventry & Warwickshire from:

- Northampton General Hospital, Northampton
- Kettering General Hospital, Kettering

The TU / LEH TTL will call the MTC TTL directly to inform them of the transfer and will call EMAS Emergency Operations Centre (EOC) **via 999** to request an interfacility transfer. It is expected that patients will be transferred from ED to ED.

During the hours of 07:00 to 02:00, the TAAS critical care team can be contacted via EMAS Air Support Desk on **0115 9675090** to facilitate such transfers by land in conjunction with EMAS ambulance and air (during daylight hours).

2.3 For transfers by North West Ambulance Service (NWAS) / North West Air Ambulance (NWAA) / Emergency Medical Retrieval and Transfer Service (EMRTS) to University Hospital of North Midlands from:

- Royal Shrewsbury Hospital, Shrewsbury
- Leighton Hospital, Crewe
- Princess Royal Hospital, Telford (LEH)
- County Hospital, Stafford (LEH)
- Queens Hospital, Burton on Trent
- Glan Clwyd Hospital
- Ysbyty Gwynedd Hospital
- Wrexham Maelor Hospital

The TU / LEH TTL will call the MTC TTL directly to inform them of the transfer and will call NWAS Emergency Operations Centre (EOC) **on 0151 261 4322** to organize transportation. It is expected that patients will be transferred from ED to ED.

During the hours of 08:00-20:00, the EMRTS Air Support Desk can be contacted **on 03001232301** to facilitate such transfers by land and air. Outside of these hours, Welsh Ambulance Service NHS Trust should be contacted via their regional control room.

For North Wales, this would be classified as an immediate transfer as per the Designed for Life; Welsh Guidelines for the transfer of the critically ill adult.

3. Unsurvivable Injuries

Some patients presenting to TU / LEH will have unsurvivable injuries and so transfer will be futile. However, this may not always be clear at initial presentation and the Trauma Network recognises

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that some patients transferred will die shortly after arrival at the MTC but this situation should be rare and avoided if possible.

For this reason, it is acceptable to initiate a consultant-to-consultant discussion to consider correct treatment options and for this group of patients accepting a short delay in transfer may be acceptable (see below). This group may include a variety of traumatic injuries but the majority of patients in this group will have serious brain injury. Patients >75 years of age with large intracranial haematomas demonstrated on CT scanning should be discussed with the MTC prior to transfer.

Please refer to the Faculty of Intensive Care Medicine link – Management of perceived devastating brain injury after hospital admission - Consensus Statement, January 2018. https://www.ficm.ac.uk/sites/default/files/dbi-consensus-statement-2018.pdf

4. When not to enact this policy

- For logistical reasons, e.g. lack of critical care beds in the referring hospital
- For patients initially assessed and treated at a TU / LEH but require ongoing care at the MTC or specialist unit within and using the urgent (48 hour) transfer pathway

5. Responsibilities List

5.1 TU / LEH Trauma Team Leader:

a. Make decision to enact Life ± Limb threatening transfer

b. For adult patients, to inform of ongoing transfer to allow reception preparations at MTC: Contact MTC TTL via
    i. RTD (hospitals listed in section 2.1)
    ii. EOC (hospitals list in section 2.2 & 2.3)

c. immediate transfer to MTC may not be in the adult patients' best interests, contact MTC TTL for consultant-to-consultant discussion via
    i. RTD (hospitals listed in section 2.1)
    ii. EOC (hospitals list in section 2.2 & 2.3)

d. Ensure that patients are safe to transfer. It is not possible to ensure all patients are stable for transfer as the intervention to achieve stability may be the reason for the transfer

e. Confirm emergency ambulance request and anticipated timing of transfer via
    i. RTD (hospitals listed in section 2.1)
    ii. EOC (hospitals list in section 2.2 & 2.3)

f. As a basic principle, the TTL should be satisfied that:
    i. Airway is safe for the duration of transfer or secured
    ii. Appropriate cervical spine protection is maintained
    iii. Life threatening chest injuries are excluded or treated as possible
    iv. Appropriate haemorrhage control achieved

v. Competent escort is provided for the transfer & must be able to manage ongoing patient needs prior to arrival at the MTC; adhere to Network Transfer Guidelines

vi. All relevant imaging and reporting is transferred electronically to the receiving MTC

vii. At all times the referring hospital should maintain the best clinical treatment within their capability until handed over to an MTC. It is likely that these patients will be considered one of the sickest in their department and as such it is expected that a senior registrar or consultant from emergency medicine and a supporting team should be actively caring for the patient until transfer takes place.

5.2 MTC Trauma Team Leader:

a. Accept details of enacted Life ± Limb threatening transfers from TU / LEH TTL
b. Ensure that trauma team is alerted to anticipated arrival of patient
c. Ensure that patient is received in appropriate clinical area (e.g. ED resuscitation room) by trauma team and any other staff needed for immediate management
d. Be available for advisory discussions with TU / LEH TTL
e. If needing specialist opinion prior to accepting transfer (e.g. in cases where transfer may be futile) seek that opinion and commit to providing a conclusion to the TU / LEH within 30 minutes. If an opinion cannot be provided within 30 minutes from the end of the initial call from TU / LEH TTL then automatic acceptance of the transfer is assumed
f. Review images on the Imaging Exchange Portal prior to patient arrival if possible
g. Notify relevant tertiary services as necessary

5.3 WMAS RTD critical care paramedic:

a. Coordinate communication between TU / LEH & MTC
    i. Receive call from TU / LEH and record details on WMAS call log
    ii. Set up conference call with MTC TTL and monitor call
    iii. Advise both parties of Life ± Limb threatening transfer process as appropriate
b. Liaise with Emergency Operations Centre staff to ensure emergency ambulance dispatched to TU / LEH within WMAS operational area
c. If required, Coordinate Enhanced Care Team involvement in Life ± Limb threatening transfer if available and able to attend TU / LEH within reasonable time

5.4 Other Emergency Operation Centres

a. Liaise with Emergency Operations Centre staff to ensure emergency ambulance dispatched to TU / LEH within their operational area
b. If required, Coordinate Enhanced Care Team involvement in Life ± Limb threatening transfer if available and able to attend TU / LEH within reasonable time

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6. Imaging within the TU/LEH

Image appropriately prior to transfer (e.g. chest / pelvic x-ray) which should be context specific e.g. blunt trauma vs penetrating injury. If transfer is based on existing clinical information do not delay it by performing further imaging within TU / LEH (e.g. clear traumatic brain injury does not require a CT scan in the TU / LEH).

If additional imaging is required to aid decision making, a Major Trauma CT scan should be performed without delay, using the same CT imaging protocol as the local MTC. A full radiologist report must be obtained and sent with the patient or direct to the MTC.

7. Pre-transfer actions at TU (as included within appendix 1 – Transfer Check List)

1. Undertake full primary survey
2. Secure airway if necessary
3. Decompress pneumothoraces or haemothoraces: ideally use transport type drains not under water seal bottles
4. Control haemorrhage
    a. Stop external bleeding
    b. Use haemostatic agents if necessary
    c. Activate massive transfusion protocol if required; avoid administering crystalloids
    d. Give initial dose tranexamic acid (if not already administered by ambulance crew)
    e. Apply pelvic binder if required ± confirm ambulance service binder is optimally sited
    f. If exsanguinating internal haemorrhage perform damage control surgery
5. Splint femoral fractures with traction splint
6. Immobilise other fractures with splints or plaster as clinically indicated
7. Only send blood products with patient if they are to be transfused en route; do not routinely send blood products
8. Do not delay transfer to insert invasive monitoring; use non-invasive methods

8. Escort

The TU TTL will determine the appropriate escort. For example:

- Ventilated patients: anaesthesia or critical care doctor (adhere to Network Transfer guidelines)
- Non-intubated patients: escort capable of dealing with anticipated potential complications en route
- When available a prehospital Enhanced Care Team may be used however these services are limited and timely availability cannot be guaranteed

The ambulance service will not routinely return escorts to the TU / LEH.

9. Paediatric Transfers

ALL children with trauma needing a transfer to the Children's MTC (Birmingham Children's Hospital) should be referred via KIDS (Kids Critical Care and Intensive Support). **Do not** phone ED or a Specialty area or the RTD. The Paediatric call arrangements are:

- The TTL in the adult MTC / TU / LEH will identify paediatric patients meeting the criteria for Life ± Limb threatening transfer and initiate the process.

- **KIDS tel: 0300 200 1100** will be the hub for communication for **all** paediatric patients who require transfer to BCH.
    - KIDS will facilitate the call and provide TTL advice when required
    - KIDS will be used in a coordination capacity and will not necessarily move the child but will assist with sorting out an alternative
    - If the patient is time critical it will still fall on the local team to transfer

For paediatric transfers from University Hospitals North Midlands (Royal Stoke) to Alder Hay Hospital in Liverpool they should contact 0151 252 5600. This is a direct "trauma line" to the Emergency Department in Alder Hey Hospital. (These patients are usually those from the North of UHNM).

9.1 Paediatric Imaging within the TU/LEH

If you need to do a CT you should follow the Royal College of Radiologists guidelines for imaging in paediatric trauma.

Image appropriately prior to transfer (e.g. chest / pelvic x-ray) which should be context specific e.g. blunt trauma vs penetrating injury. If transfer is based on existing clinical information do not delay it by performing further imaging within TU / LEH (e.g. clear traumatic brain injury does not require a CT scan in the TU / LEH).

If additional imaging is required to aid decision making, a Major Trauma CT scan should be performed without delay, using the same CT imaging protocol as the local MTC. A full radiologist report must be obtained and sent with the patient or direct to the MTC.

See appendix 3 for the Checklist for transfer of children with neurosurgical emergency

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Appendix 1

Adult Life ± Limb threatening transfer check list (example)

Action undertaken or considered	Completed by	Comments
Call RTD (01384 215696) and speak to MTC trauma team leader		
Name of MTC TTL		
Upload images to IEP/ PACS		
Airway safe or secured		
Chest decompressed		
Pelvis splinted		
Femurs splinted		
External bleeding stopped		
Tranexamic acid given		
Cervical spine immobilised		
Patient on scoop stretcher		
Escort personnel briefed		
Transfer bag checked		
Transfer drugs ready		
CCN transfer form available		
Copy of trauma chart and ambulance (e) PRF ready		
Appropriate imaging performed and reviewed		

Appendix 2

Checklist for transfer of children with neurosurgical emergency (example)

Checklist:
- ✓ Use this checklist to assist in ensuring adequate therapy and monitoring are in place prior to and during transfer

Identify and consult:
- ***Identify acute neurosurgical emergency:***
  (eg. Mode of injury or history, focal neurological deficits, reduced GCS, dilated/unequal pupils, bradycardia & hypertension)
- ***Urgent conference call with KIDS consultant and Neurosurgeon***
  if time-critical, likely to require primary transfer by referring team
- ***If immediately life-threatening, may require primary transfer to neurosurgery theatre (theatre 1 at BCH) or local neurosurgical intervention – discuss with neurosurgeon and KIDS consultant***

Airway and Breathing:
- Oral ETT, firmly taped, T2 on CXR
- Cervical spine immobilisation if trauma
- $PaCO_2$ 4.5-5.3 kPa
- Orogastric tube on free drainage

Circulation:
- 2 peripheral iv lines
- Request crossmatch (*Aim Hb>10gms)*
- Aim for normovolemia
- Avoid hypotension
- 0.9% Saline maintenance (*+dextrose if hypoglycaemia*)
- Volume expansion 0.9% Saline 10ml/kg boluses
- Consider noradrenaline infusion to maintain BP (see KIDS drug calculator)
- CVL and arterial line if sufficient time

Disability and other management:
- 15 mins Neuro Obs
- CT scan (*discuss with Neurosurgeon/KIDS)*
- Normothermia (36-37° C)
- Phenytoin 18 mg/kg over 20 mins if seizures
- Maintain plasma Na >140mmol
- Hyperosmolar therapy (discuss with Neurosurgeon/KIDS see KIDS drug calculator)
- Secondary survey if trauma

Preparing for transfer:
- Adequate sedation and analgesia with morphine/midazolam infusion – see KIDS drug calculator for dosing
- Muscle relaxant infusion – see KIDS drug calculator for dosing
- Urinary catheterisation – especially if mannitol used
- Strategy for managing raised ICP:
  (discuss with Neurosurgeon/KIDS regarding sedation, pCO_2, ABP target for cerebral perfusion, hyperosmolar therapy)
- Secure child to trolley (*not on spinal board*)
- Connect long extension to allow additional drug and fluid administration en route
- Sufficient portable oxygen for whole journey x2
- Sufficient battery life on monitor and infusion pumps
- Use ambulance oxygen gas and electricity supply where possible
- Transfer documentation, radiology, blood results
- Regular observations (at least once every 15mins) – including pupillary reactions, heart rate, blood pressure $ETCO_2$, SpO_2
- Seat belts at all times
- Travel safe – Lights/Sirens only when necessary to manage traffic congestion or unstable patient or time critical

References:

APLS 4th edition 2004
Joint statement from the Society of British Neurological Surgeons (SBNS) and the Royal College of Anaesthetists (RCoA) Regarding the Provision of Emergency Paediatric Neurosurgical Services (document)