WYMTN - Adult Transfer guidance

December 2020

Purpose of document
This guideline describes the pathway for the safe and efficient emergency transfer of adult patients from a Trauma Unit (TU) or Local Emergency Hospital (LEH) to the Major Trauma Centre (MTC).

Transfer categories:

Life / Limb saving
These patients require transfer to the MTC for immediate life or limb saving treatment. This is an ED to ED transfer. If the TU / LEH consultant believes a patient has immediately life or limb threatening injuries that cannot be managed at their hospital then the patient will be automatically accepted at the MTC and a 'send and call' approach should be followed.
Inform the LGI ED Consultant and, if time allows, the LGI Major Trauma Specialist Nurse (MTSN)

Stop / Sort / Go
These patients will have undergone a 'pitstop' at the Trauma Unit and require immediate onward conveyance to the MTC for full investigation and treatment. This is an ED to ED transfer. Inform the LGI ED Consultant and, if time allows, the LGI Major Trauma Specialist Nurse (MTSN). More information on the stop, sort & go process can be found here https://www.wymtn.com/stop-sort--go.html.

Combination of injuries requiring MTC care
These patients have a range of injuries that will require observation or management at the MTC and may require specialist input at short notice (e.g. multiple rib fractures and splenic laceration). This is an ED to ED transfer.
The decision to refer such a patient should be a senior clinical decision involving the relevant TU specialties.
Contact the MTC ED Consultant in Charge on 0113 3920901 or NIC on 0113 3920904 to arrange ED to ED transfer. The decision to accept a patient currently in a TU ED will be made by the **LGI ED Consultant in Charge.** Acceptance of such a patient by the MTC T&O Consultant on Call is not required prior to transfer

Specific single system injury potentially requiring MTC care (including open fractures[1])
The decision that a single system injury exceeds TU specialist management capability should be made by a senior clinician of the relevant specialty. They should then contact the MTC on-call consultant or relevant specialty consultant via switchboard (or online for neurosurgery) and / or the MTSN on 07920 757 283 to discuss the case and decide if the patient would be for ED to ED transfer or for local admission initially and secondary transfer TU to MTC within 48 hours. If an admitted trauma patient becomes unstable and requires immediate MTC care then they should be transferred to the MTC ED following the 'send and call' approach.

PLEASE ENSURE that the transferring department informs the LGI ED Consultant in Charge of any patient being transferred to the LGI regardless of who has accepted them.

REFERRAL GUIDANCE
A **consultant must be involved in all decisions on transfer.** Referral should start with a clear statement of the reason for referral and then utilise an ATMIST structure:

A - Age / Gender / name & number
T - Time of incident
M- Mechanism of Injury
I - Injuries found
S - Signs and symptoms including most recent observations
T - Treatment given

"*I am transferring a patient with multiple injuries including a life-threatening head injury. He is a 43 year old male, Michael Thompson, NHS number 123 456 7899. At 12:20 he fell 30' from a ladder landing on concrete. He has had a polytrauma CT scan and has a large extradural, multiple left sided rib fractures and a splenic laceration. He is intubated and ventilated. His heart rate is 85, blood pressure 120/76, sats 100%, respiratory rate 14 and GCS 3 (intubated and ventilated).*"

The MTC ED Consultant can be reached on 0113 3920901
The MTC ED Nurse in Charge can be reached on 0113 3920904

[1] Note that transfer of isolated open limb fracture patients should generally not occur after 10pm. Please see https://www.wymtn.com/open-fractures.html for further information

For multiply injured patients who you feel would benefit from MTC care but who have no immediately life or limb threatening injuries contact the MTC ED Consultant.

For advice on specific injuries:
For neurosurgical advice use the online referral system https://patientpass.leedsth.nhs.uk/

T & L Spinal Injury - Spinal surgery on call

Thoracic Injury - Thoracics on call (please note all trauma patients will be directed to LGI in first instance)

Cardiac injury - Cardiac Surgery on call

Intra-abdominal injury - Vascular surgery on call

Vascular Injury - Vascular surgery on call

Pelvic injury - Major Trauma T&O

Extremity injury - Major Trauma T&O

A summary of this guidance is included in APPENDIX THREE.

HOW TO PREPARE THE PATIENT FOR TRANSFER

A risk assessment must be carried out to determine the level of support and personnel required. The assessment should take into account the following:

- Patient's current clinical condition
- Specific risk related to patient's condition
- Risks related to movement / transfer
- Likelihood of deterioration during transfer
- Potential for requiring additional monitoring / intervention
- Duration and mode of transfer

Level 2 and 3 patients should normally be accompanied by two suitably trained, experienced and competent attendants during transfer whose background and competencies will depend on the nature of the patient's injuries, co-morbidity, level of dependence and risk of deterioration.

The risk assessment is contained in APPENDIX ONE.

Specific requirements

- **Traumatic Brain Injury** - please see section below

- All **intubated** patients must be accompanied by a suitably trained clinician able to manage an invasively ventilated patient

- All patients requiring ongoing **blood transfusion** or infusion of any drug must be accompanied by a suitably trained clinician able to manage the infusion device in use

- All patients with an **intercostal drain** must be accompanied by a suitably trained clinician familiar with the management of intercostal drains. Drains must not be clamped for transfer.

If blood products and / or components are being transferred with a patient to the LGI the TU team must liaise with the referring hospitals **own** Blood Bank as soon as possible. The Biomedical Scientist (BMS) will be aware of what documentation is required and the safest way to transfer the blood products / components. Blood products and components being transferred with a patient from another hospital out with LTHT must:

- Be packaged appropriately
- Have transit documentation completed which details the blood products and components and their storage conditions
- Labelled with a transport label on the outside of the transfer box.

Upon arrival at the LGI any blood products / components that are not being transfused and are not immediately required must be **delivered to the LGI blood bank** as soon as possible. The BMS staff will re-issue the products / components once they are satisfied that they are safe to use. Please inform the Blood Bank BMS at the LGI if the patient has received any blood products / components prior to arrival at LTHT

A pre-transfer checklist is included in APPENDIX TWO.

TRAUMATIC BRAIN INJURY[2]

Indications for tracheal intubation in brain-injured patients are:

- GCS <= 8
- Significantly deteriorating conscious level (eg fall in GCS of 2 or more points or fall in motor score of 1 or more points)
- Loss of protective laryngeal reflexes
- Failure to achieve PaO2 >= 13kPa
- Hypercarbia (PaCO2 > 6kPa)
- Spontaneous hyperventilation (PaCO2 < 4.0 kPa)
- Bilateral fractured mandible
- Copious bleeding into the mouth (eg from skull base fracture)
- Seizures

Blood pressure management in TBI

Persistent hypotension will adversely affect neurological outcome. Ongoing bleeding must be controlled prior to transfer if possible. Once bleeding is controlled hypotension that persists despite appropriate blood transfusion may require the judicious use of inotropes or vasopressors to offset the hypotensive effects of sedative agents. A systolic blood pressure of 110 - 150 mmHg with MAP of > 90mmHg is a reasonable target. Permissive hypotension should not be used in cases of significant TBI.

Seizure management

If the patient has had a seizure consider loading with 20mg/kg (max dose 1g) of iv levetiracetam prior to transfer.

Patient positioning

If possible the patient should be managed at a 20-30^{o} head up tilt.

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[2] Nathanson MH, Andrzejowski J, Dinsmore J et al. Guidelines for safe transfer of the brain-injured patient: trauma and stroke, 2019. Association of Anaesthetists and the Neuro Anaesthesia and Critical Care Society https://doi.org/10.1111/anae.14866

IMAGING and NOTES

Please ensure all images will be visible on Xero image view and that a copy of the TU radiology report accompanies the patient. Please ensure that all relevant electronic notes and prescriptions are printed and transferred with the patient. An alternative is to email a PDF of the notes to the ED Consultant with their prior agreement.

HOW TO LIAISE WITH YAS

YAS should be contacted via 0300 330 0276 for all time critical transfers. The caller will be asked to press 1 for assistance in delivering an immediate life-saving intervention or to declare an obstetric emergency OR hold for an operator. *Trauma transfers would almost never come under this category*.

If there is a need for an immediate intervention that cannot be carried out at the current facility and the patient is at immediate risk of death or life changing loss of a limb or sight (eg immediate neurosurgery, thrombectomy, immediate life or limb saving surgery) a Category 2 response will be initiated. This involves dispatch of the closest emergency ambulance with a mean response time of 18 minutes.

POINTS FOR THE RECEIVING MTC CLINICIAN

- **MTC Critical Care Capacity** does not influence the decision to transfer a patient to the MTC. A decision to stop accepting patients to the MTC can only be made at **executive** level.
- **Repatriation from the MTC ED** to the TU should not occur. Once a patient has been transferred to Leeds they should be admitted to the LTHT bed base (assuming admission is required). Repatriation from the ward will fall under the ‘48 hour’ rule regardless of which LTHT ward they are admitted to.

APPENDIX ONE

Transfer risk assessment (*modified from WYCCN transfer guidance*) Risk assessment is subjective and other factors not listed may influence perceived risk. The risk tool is provided for guidance only. It is the referring consultant's responsibility to ensure that the transfer is appropriate and that the transferring team have the necessary skills required.

LOW RISK

□ NEWS 1-4 □ Maintaining airway □ Less than 40% oxygen requirement / base deficit - 4mmol / l
□ Not requiring inotrope / vasopressor support □ GCS 14-15
□ Normothermic

NURSE / PRACTITIONER WITH APPROPRIATE COMPETENCIES ONLY

MEDIUM RISK

□ NEWS 5-6 □ Maintaining airway □ 40-60% oxygen / base deficit -4 to -8 mmol / l
□ Low dose inotrope / vasopressor support (<0.2mcg/kg/min) □ GCS 9-13 (consider elective intubation)
□ Hypo / hyperthermic

DOCTOR accompanied by NURSE / PRACTITIONER with appropriate competencies. If potential to deteriorate then doctor should have critical care and advanced airway competencies

HIGH RISK

□ NEWS 7 or more □ Intubated / ventilated □>60% oxygen requirement or base deficit > 8mmol/l
□ CVS unstable and / or requiring inotrope / vasopressor support (>0.2mcg/kg/min) □ Hypo / hyperthermic

DOCTOR with critical care and advanced airway competencies accompanied by nurse / practitioner with appropriate competencies

APPENDIX TWO Transfer Checklist - ESCORT

E	**Equipment**	• Establish on transfer monitoring: 3 lead ECG / pulse oximetry / NIBP minimum (invasive BP if unstable or requiring inotropes) • End Tidal CO2 for all intubated patients • Emergency drugs, fluids and oxygen • Appropriate packaged blood products as needed • Transfer bag including battery back up • Any specialist equipment (eg warming blanket, spinal immobilisation)
S	**Systematic**	• Full ABCDE reassessment • Confirm airway safe or secured • 2 working iv access points • Confirm patient suitability for transfer
C	**Communication**	• Inform patient (if appropriate) and family • Inform MTC of departure • Mobile telephone available • MTC contact numbers with transferring team • Ensure 10 minute pre-arrival warning to MTC
O	**Observations**	• Full set of observations recorded prior to departure • Commence transfer documentation
R	**Recent Investigations**	• Copies of relevant medical notes (or email electronic records to MTC consultant) • Copies of recent investigation results including CT report
T	**Team**	• Skill mix of transfer team appropriate • Protective clothing / high visibility jackets available

APPENDIX THREE - Transfer guidance summary

ADULT TRAUMA TRANSFERS TO MTC-
A TU consultant must be involved in all decisions on transfer

Problem	Transfer	TU decision	MTC referral	Telephone
LIFE/LIMB SAVING	ED to ED	ED Senior	LGI ED Consultant in charge +/-MTSN (Major Trauma Specialist Nurse) **NO MTC ACCEPTANCE REQUIRED** **SEND & CALL**	0113 3920901 07920 757 283
STOP/SORT/GO	ED to ED	ED Senior	LGI ED Consultant in charge +/-MTSN (Major Trauma Specialist Nurse) **NO MTC ACCEPTANCE REQUIRED** **SEND & CALL**	0113 3920901 07920 757 283
MULTIPLY INJURED (eg/ rib fractures, splenic laceration)	ED to ED	TU Specialities	LGI ED Consultant in charge or LGI ED Nurse in charge MTC ACCEPTANCE REQUIRED#	0113 3920901 0113 3920904
SINGLE SYSTEM INJURY* (including open fractures)**		TU Specialities	MTC on-call Consultant (Trauma) or MTC Relevant Speciality (Senior) or Neurosurgical SPR +/- MTSN MTC ACCEPTANCE REQUIRED	LGI switchboard LGI Switchboard PatientPass 07920 757 283

*If the patient becomes unstable- becomes an ED to ED transfer via LGI ED Consultant in charge
** Note that transfer of open fracture patients should generally not occur after 10pm. Please see https://www.wymtn.com/open-fractures.html for further information
# MTC acceptance required means the patient must be accepted by an appropriate clinician at the LGI prior to transfer
Courtesy of Dr Jill Stewart, BTHFT

APPENDIX FOUR - WYMTN Boundaries