# LRI Emergency Department

Standard Operating Procedure for:

# Time-Critical Transfer of the Sick or Injured Child (<16 years)

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|---|---|
| Staff relevant to: | Medical and Nursing Staff |
| Senior team approval date: | July 2023 |
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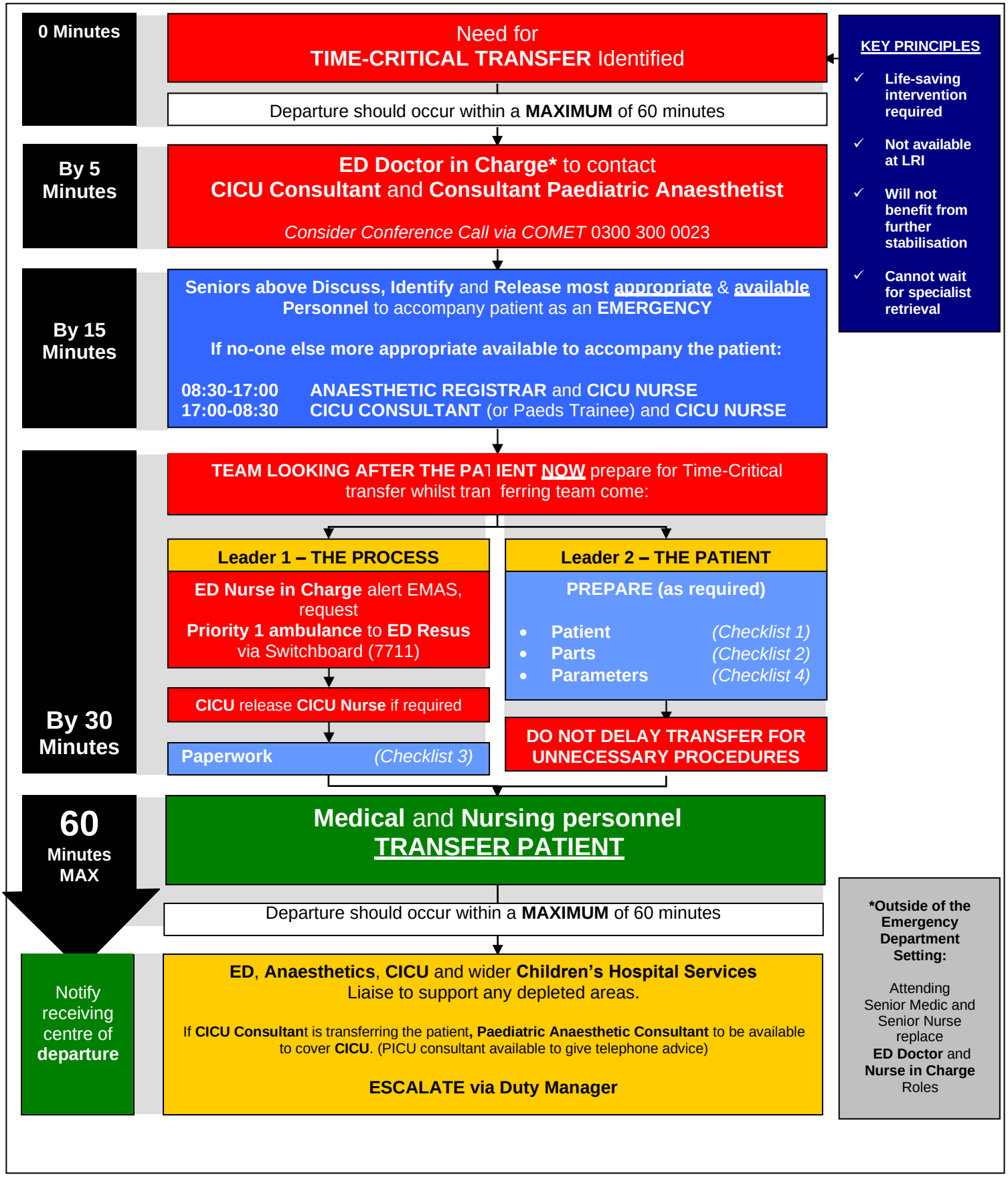
0 Minutes
Need for
TIME-CRITICAL TRANSFER Identified
Departure should occur within a MAXIMUM of 60 minutes
By 5 Minutes
ED Doctor in Charge* to contact
CICU Consultant and Consultant Paediatric Anaesthetist
Consider Conference Call via COMET 0300 300 0023
By 15 Minutes
Seniors above Discuss, Identify and Release most appropriate & available Personnel to accompany patient as an EMERGENCY
If no-one else more appropriate available to accompany the patient:
08:30-17:00 ANAESTHETIC REGISTRAR and CICU NURSE
17:00-08:30 CICU CONSULTANT (or Paeds Trainee) and CICU NURSE
By 30 Minutes
TEAM LOOKING AFTER THE PATIENT NOW prepare for Time-Critical transfer whilst transferring team come:
Leader 1 – THE PROCESS
ED Nurse in Charge alert EMAS, request
Priority 1 ambulance to ED Resus
via Switchboard (7711)
CICU release CICU Nurse if required
Paperwork (Checklist 3)
Leader 2 – THE PATIENT
PREPARE (as required)
Patient (Checklist 1)
Parts (Checklist 2)
Parameters (Checklist 4)
DO NOT DELAY TRANSFER FOR UNNECESSARY PROCEDURES
60 Minutes MAX
Medical and Nursing personnel
TRANSFER PATIENT
Departure should occur within a MAXIMUM of 60 minutes
Notify receiving centre of departure
ED, Anaesthetics, CICU and wider Children's Hospital Services
Liaise to support any depleted areas.
If CICU Consultant is transferring the patient, Paediatric Anaesthetic Consultant to be available to cover CICU. (PICU consultant available to give telephone advice)
ESCALATE via Duty Manager
KEY PRINCIPLES
✓ Life-saving intervention required
✓ Not available at LRI
✓ Will not benefit from further stabilisation
✓ Cannot wait for specialist retrieval
*Outside of the Emergency Department Setting:
Attending Senior Medic and Senior Nurse replace ED Doctor and Nurse in Charge Roles

## Key Points:

- There are rare occasions where paediatric patients require emergency inter-hospital transfer, to allow life-saving intervention which is not readily available on-site, which cannot wait for stabilisation or retrieval.
- These will by definition be the sickest children in the hospital at the time.
- The relevant services within the Children's Hospital will collaborate to support the emergency transfer of these children, and then liaise to support any resulting depletion in services.

# Introduction, definition and identification

There are rare occasions where Children (<16 years) presenting to LRI require emergency inter-hospital transfer based on the **following 4 key principles**:

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**1) To allow the provision of life-saving intervention, which:**

i. **is not readily available on-site at LRI**

ii. **will not benefit from further stabilisation**

iii. **cannot safely wait for specialist retrieval**

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The commonest clinical scenario likely to require Time-Critical Transfer from LRI is of a child with an expanding intracranial haemorrhage following a head injury, requiring immediate neurosurgical intervention at the nearest paediatric neurosurgical facility.

Other clinical scenarios may be identified based on the application of the above principle.

Identification of the need for time-critical transfer may occur via a number of routes including the patient's clinical condition, investigation findings, or on recommendation from a specialist centre.

**Time-critical transfer of the sick or injured child cannot safely occur without senior involvement from ED, Anaesthetics and CICU.**

These children will often by definition be the sickest in the hospital at the time, likely having already required activation of either UHL's paediatric trauma team or paediatric arrest team. As a result, in addition to the ED team, anaesthetic and paediatric intensive care teams are likely to be aware and attending the patient in the ED Resuscitation Room prior to confirming the need for time-critical transfer.

It is also likely that the child is already receiving significant airway, breathing and circulatory intervention/support.

**The over-arching agreement is that once identified, the relevant services within the children's hospital (Anaesthetics, ED, CICU) will collaborate to transfer the patient as SWIFTLY and as SAFELY as possible.**

## Communication with Receiving Centre

There will often be prior communication with a receiving centre to notify them of the situation and ensure bed availability. On some occasions it may be the receiving centre that identifies the need for time-critical transfer. This process must not delay a time-critical transfer.

### Paediatric Major Trauma

In this context, as a Trauma Unit within the East Midlands Major Trauma Network, UHL may receive injured children who cannot safely reach the Major Trauma Centre at QMC Nottingham without critical intervention. For example, those requiring urgent airway, breathing or circulatory intervention. In these cases the accompanying paramedic crew will remain with the patient ready for onward transfer. Please complete the Major Trauma Network Transfer Documentation and ensure a copy accompanies the child.

Once critical interventions have been performed, if onward transfer to the Major Trauma Centre is still required, it is not necessary to contact the MTC before departure, as a **"stop, sort, go"** agreement is in place.

However, the decision as to whether any onward transfer is time-critical must be based on the principles above.

Once the child has left the department, the receiving centre must then be notified.

**Departure should occur within a MAXIMUM of 60 minutes of identifying need for time-critical transfer**

## The Process of Time-Critical Transfer

It has been agreed that, on identification and confirmation of the need for time-critical transfer (Based on the **4 key principles** outlined above):

1. The ED Doctor in Charge will contact the Duty CICU Consultant and Emergency Paediatric Anaesthetic Consultant urgently, either via UHL switchboard, or via a conference call using COMET (0300 300 0023).

2. The ED Doctor in Charge, Duty CICU Consultant and Emergency Paediatric Anaesthetic Consultant will collaborate to identify and release the most appropriate and available doctor to accompany the child on transfer*.

3. ED, Anaesthetic and any additional personnel already present will prepare the patient for Time-Critical transfer urgently (*see checklists 1-4 below).*

4. If required, the CICU consultant will liaise with the CICU Nurse in Charge to release a nurse (or suitable alternative) from CICU to accompany the patient on transfer.

5. The ED Nurse in Charge will arrange for Emergency Transport to attend Resus, most often a Priority 1 (Next available) EMAS Ambulance.

6. The patient is secured and transferred safely but swiftly, accompanied by appropriate medical and nursing personnel.

7. The receiving centre is notified of the patient's departure and estimated time of arrival.

*If no-one else more appropriate is available to accompany the patient, the following agreement applies:

08:30-17:00 **ANAESTHETIC REGISTRAR** and **CICU NURSE**

17:00-08:30 **CICU CONSULTANT** (or Paeds Trainee) and **CICU NURSE**

**There must be NO DELAY in releasing resources to transfer the patient**

**Departure should occur within a MAXIMUM of 60 minutes of identifying need for time-critical transfer**

Once the patient has departed, the ED, Children's Hospital and paediatric anaesthetic services must liaise to support any depleted areas, with escalation as required via the UHL duty management structure.

## Time-Critical Transfer in the Non-ED Setting

It is recognised that rarely a Time-Critical Transfer situation may be identified outside of the Emergency Department setting, for example on a ward or admissions unit. In such a scenario, it is suggested the **senior medical and nursing team attending the patient** in that area replace the ED Doctor and Nurse in Charge roles in the guideline.

## Staff Responsibilities and Support

It is acknowledged in advance that in order to act in the best interests of patients staff may have to provide care or interventions that are outside of their normal areas of expertise and in which they may have little or no formal training.

Such responsibilities should only be undertaken if no better options are available, and all reasonable efforts should be made to seek advice / assistance from other staff members who may have more experience or formal training in the relevant areas.

However, if no better alternative exists the essential requirement is that staff who are prepared to take such responsibilities use all of their existing skills and expertise to provide the best care that they can for the patients involved.

Providing that these standards are met and can be confirmed / supported by appropriate documentation it is important that staff members are reassured that they will be fully supported by the Trust in any subsequent developments – whether these relate to personal distress, loss of confidence, professional criticisms or even retrospective litigation.

## Additional Resources

- The following **Checklists 1-4** are designed to help make transfer as safe and swift as possible.
- The **PED Resus Drugs Calculator** is available via INsite on the ED pages.
- **CICU Transfer Packs** are located with the **Paediatric Transfer Bags** in Resus and contain:
  - CICU transfer documentation – to complete en-route
  - CICU Infusion guides
- East Midlands Major Trauma Network **Transfer Documentation** is also available in the Emergency Room.

## Performance Measures

**This SOP is designed to drive safe transfer in time-critical situations**.
Through:

- Rolling audit and review of time-critical paediatric transfers
- Monthly analysis of paediatric transfers at the PED Critical Care Forum
- Datix reporting of incidents (including adverse events on base as a consequence of reduced staffing).
- Investigation and discussion at the monthly Paediatric ITU/Anaesthetic/ED meeting

Any issues identified may result in a review of the SOP and further changes being made.

## References


1. UHL Paediatric ITU/Anaesthetic/ED meeting agreement
2. Embrace Referral Information - Sheffield Children's NHS Foundation Trust: http://www.sheffieldchildrens.nhs.uk/refer-to-us/embrace/
3. National Ambulance Services Clinical Conveyance Group - Inter-Hospital Transfer Protocol: October 2010
4. South Thames Retrieval Service Guideline: Time Critical Neurosurgical Transfer, S Hanna 2013

Appendix 1: Checklists.

# Checklist 1 - Patient

**<u>CONSIDER</u> and confirm the following before transfer:**
***<u>DO NOT</u>*** *delay for unnecessary procedures*

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|---|---|
| ETT secured and position confirmed | ☐ |
| C-spine immobilisation considered for any trauma patient | ☐ |
| Attached to transport ventilator with continuous $ETCO_2$ monitoring | ☐ |
| Recent blood gas shows adequate gas exchange and normal blood glucose | ☐ |
| Gastric Tube placed on free drainage | ☐ |
| 2 points of IV access well-secured<br>*(Do NOT delay for difficult central or arterial access, consider IO)* | ☐ |
| Adequate analgesia, sedation and muscle relaxation<br>*(Consider bolus vs. infusion)* | ☐ |
| Pupillary responses monitored and recorded regularly | ☐ |
| Seizures controlled and metabolic causes excluded | ☐ |
| Maintain normothermia (temperature 36°C-37°C)<br>*(Unless otherwise advised)* | ☐ |
| Urinary Catheterisation | ☐ |
| Child Secured on Trolley<br>*(Do NOT delay for ICU transport system, use Ambulance Trolley)* | ☐ |

# Checklist 2 – Parts (Equipment)

**The attending ambulance will provide a compatible transfer trolley**

*If available, the dedicated CICU transport system is a desirable alternative – **DO NOT** unnecessarily delay transfer.*

Otherwise, the equipment required to safely transfer a child in an emergency is readily available in the Emergency Department:

Transport ventilator and circuit – Oxylog 3000 ☐
*(Starting settings: PEEP 5 / rate 15-20 / Ti 1.0 / PIP to move chest)*

Gas supply *(FULL and Spare)* ☐

Ambu bag and mask on trolley ☐

Patient transport monitoring:
- ECG ☐
- $SaO_2$ ☐
- $ETCO_2$ ☐
- BP ☐
- Temperature ☐

Infusion pumps ☐

Transport Bag – *with Emergency Airway, Breathing and Circulation equipment* ☐

Emergency Fluids and drugs ☐

Print off Children's ED Resus Drug Dose Calculator ☐

CICU Transfer pack ☐

East Midlands Major Trauma Network Transfer Form *(Where applicable)* ☐

Checklist 3 – Paperwork (Documentation/Communication)

## Maintain clear lines of communication at all times

***Within the team and to the designated receiving centre***

Update any parents/carers present on:

- their child's condition ☐
- plans for transfer ☐
- map / directions to destination and contact details ☐

Ensure transfer team have parents/carers contact details ☐

Photocopies of all (to accompany the patient):

- recent relevant notes ☐
- investigation results ☐
- drug charts ☐

Highlight/document any social concerns ☐

Ensure transfer of radiology investigations electronically ☐
*(or hard copy/CD-ROM)*

Update receiving centre on departure ☐

Print off Children's ED Resus Drug Dose Calculator sheet ☐

Commence CICU transfer documentation ☐

# Checklist 4: Parameters

**If any concerns or deterioration - update CICU consultant**

**General Strategy: NO HYPOXIA or HYPOTENSION**

$O_2$ Saturations > 98% ☐

Maintain Systolic BP ☐

Approximate targets for age
- <1yr >80
- 1-5yr >90
- 5-14yr >100
- >14yr >110

Maintain $ETCO_2$ 4-5kPa ☐

Keep temperature 36-37$^{o}$C ☐

Identify and treat seizures ☐

Maintain normal blood Glucose ☐
*Maintenance fluid 1-2mls/kg 0.9% Saline +/- Dextrose*

**Intracranial Pressure Spikes:** *Bradycardia, Hypertension, Pupil dilatation*

Ensure ETCO2 4-5 ☐

Give 2-3 mls/kg hypertonic saline (2.7%)
Or ☐
Give 0.5g/kg 20% Mannitol

Sedate ☐

Keep Moving ☐

**Transfer to Ambulance and Onward Journey**

Ensure child secure ☐

Switch to vehicle O2 supply ASAP ☐

Request as smooth journey as possible ☐

Seatbelts worn when vehicle moving ☐

Note Observations every 15 minutes including pupil response ☐

Record on CICU Transfer documentation ☐