



## **Principles for Operation of Cheshire & Mersey Critical Care Transfer Vehicle & Driver (CMCCN CCTVD) Version 5**

Prepared by CMCCN Nov 2021, updated Jan 2022, updated April 2022, updated September 2024, April 2025

### **Aim**

To provide additional 'blue light capable' vehicle and driver capacity to facilitate:  
Critical care transfers for (in order of priority for this service to provide)

1. Mutual aid
2. Repatriation
3. Specialist care &/or interventions (not if time-critical\*)

If not required for critical care transfers in any one day it may be formally released for other uses, subject to change if a critical care transfer is identified.

**\*NB this service is not suitable for time-critical transfers which will continue to be the remit of NWAS.**

### **Operating principles**

Vehicle and driver commissioned by Liverpool Heart and Chest Hospital on behalf of CMCCN with funding from NHSE Northwest allocating national monies identified for this purpose.

Current contract is fixed term pending the development of a Northwest fully commissioned Adult Critical Care Transfer Service (ACCTS) that is compliant with the national specification.

The contract is currently awarded to an existing private ambulance service (Spark Medical) using NWAS's established framework for securing additional ambulance capacity; this will ensure the provider meets required standards.

Vehicle and driver are 'blue light capable' and have the same level of equipment as a front-line NWAS vehicle.

NB. Units will need to provide their own transfer trolley. If a unit or department do not have a transfer trolley request the use of the LHCH one. This must be requested at the time of booking the transfer vehicle.

Operational management is the responsibility of LHCH where the service is based alongside their existing private ambulance service. LHCH will complete daily logs of use, referring and receiving sites and the personnel accompanying the patient (clinical staff provided by referring site).

On each and every occasion a CMCCN transfer form will be completed in full by the transferring team with the white copy retained in the patient's notes and the yellow copy retained by the transferring unit for audit (coordinated by the unit Local Service Improvement Leads (LSIL) and governance purposes according to NHS information governance standards.

Local geography will limit number of transfers to 2 (possibly 3 if very local) in any one day. Transferring clinical teams will be returned to base with accompanying equipment whenever possible; however, on occasions where the transfer vehicle is required to do another urgent transfer alternative means of transport may be required, if so, this is the responsibility of the relevant transfer team lead to arrange.

### **Hours of operation:**

7 days per week and between the hours of 10.00 & 20.00 (deadline for request to be accepted is 18.00)

### **Governance**

The CMCCN CCTVD is the Joint responsibility of LHCH and CMCCN. Accountability for compliance lies with NHS statutory bodies as applicable to patient pathway. CMCCN units will use established processes for auditing critical care transfers and incident management.

All transfer incidents should be reported via Trust Governance and incident processes and the CMCCN clinical governance reporting system. The CMCCN governance incident reporting form can be access using the following link.

[CMCCN Governance Incident Reporting and RESPONSE Form Feb 2025.pdf](#)

Any capacity transfers using the CMCCN CCTVD should be reported to CMCCN by using the CMCCN Capacity transfer form which can be accessed by using the following link.

[Capacity Transfer and CMCCN Clinical Incident Reporting Form](#)

### **Clinical priorities**

**The CMCCN critical care transfer policy will be adhered to at all times** including consultant-consultant referral and acceptance. Critical care transfers are an inherently high-risk clinical procedure (The Transfer of the Critically Ill Adult (FICM & ICS 2019).

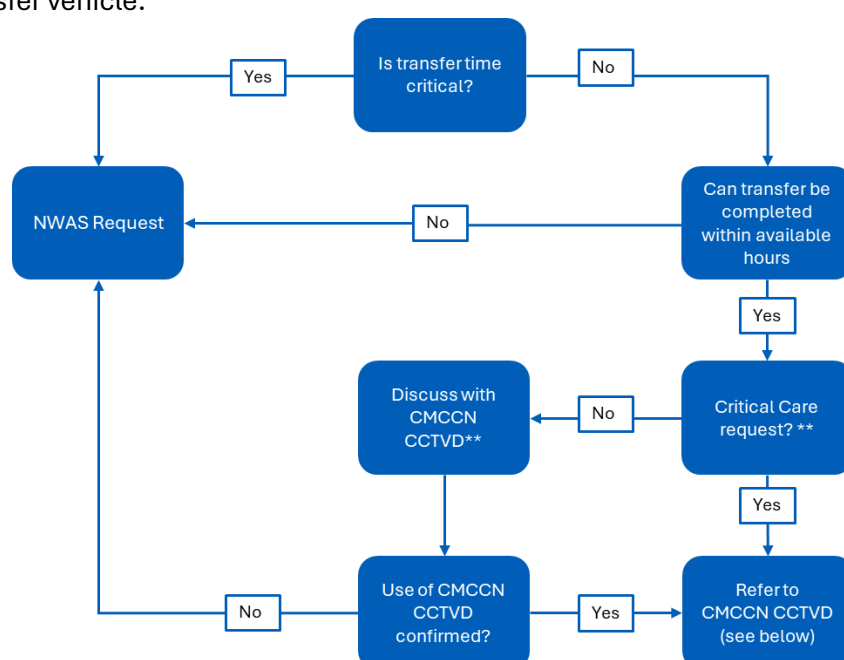
The patient is moved from a 'place of safety' and transported in an ambulance to another hospital site. It must be clear that the transfer is of benefit. Appendix 1-4 of this document gives guidance about the processes for undertaking Critical Care Transfers

## Process outline

### Pre-requisites

- Need for critical care transfer identified.
- Consultant-consultant referral (through a direct conversation) must be accepted and receiving site identified with critical care bed availability confirmed.
- Unit transfer teams must be suitably qualified and experienced in transferring critical care transfers as per ICS transfer of the critically patient guidelines (2019) and CMCCN critical care transfer policy.

The algorithm below is to be followed to support clinical decision making in the use of the CMCCN transfer vehicle.



**NB. The CMCCN critical care transfer policy must be adhered to at all times.**

### Request for vehicle

The following information **must be available before a request is made**, and provided with the request:

- Reason for transfer (see above categories)
- Referring site
  - Unit name & direct dial phone number
  - Name & contact details (email & phone) of consultant making the referral.
  - Patient name and age
  - Diagnosis
- Receiving site
  - Unit name & direct dial phone number
  - Name & contact details (email & phone) of consultant accepting the referral.
- Further details to be added as relevant.

**Ring LHCH switchboard (0151 600 1616) and ask for the hospital coordinator to be ‘bleeped’ for a critical care transfer. Ensure that the switchboard know it is for a Critical Care Transfer, they will do a bleep voice over.** Convey the above details, note date, and time referral made.

There is **no** need to send an email to CMCCN office. Logs of all transfers facilitated by vehicle provider are sent to the CMCCN Lead Nurse each week and these are recorded onto the CMCCN transfer vehicle database.

If more than 1 critical care transfer request is received at any one-time clinical priority will be assessed 08.30 – 16.00 Mon – Fri (excluding BHs) by a CMCCN clinical team members (Dr Tristan Cope, or Karen Wilson). Outside those hours this assessment will be done by Dr Cope or the designated consultant intensivist.

Please ensure once you have booked the CMCCN Transfer vehicle with the LHCH co-ordinators and had confirmation that the transfer will be taking place – please stand down any existing bookings with NWS or if you no longer need the CMCCN ambulance please contact the LHCH coordinators as soon as possible as the ambulance can be utilised for another critical care transfer.

#### **Provision and usage of the CMCCN Transfer Vehicle for non-critical care transfers.**

At times where the transfer vehicle is not being used for critical care transfers, the CMCCN vehicle may be used by the following services which can also assist with critical care service delivery.

Examples of these services include:

- Transfer of renal patients to tertiary renal services.
- Transfer of Cheshire and Mersey Rehabilitation Network patients
- Repatriation of patients from the Major Trauma Ward at Major Trauma Centre at Aintree Hospital.

#### **NB Any Critical Care transfers from critical care units within CMCCN will always take priority for the CMCCN transfer vehicle.**

Process for non-critical care transfers should follow established Trust transfer of patient’s policy and must adhere to the following principles.

- The transferring Trust are responsible for providing staff who are suitably qualified in the transfer of patients to undertake the transfer.
- The basis of a decision to transfer is an assessment of the risks, benefit and urgency associated with each individual patient. This must be documented by a senior clinician.
- The transfer process is the joint responsibility of the referring consultant / team, at the transferring unit / department and the at the receiving Trust consultant and transfer personnel. Final authority to accept the referral rests with the consultant / team in the receiving unit.

- The patient, where possible, and their next-of-kin should be informed of the decision to transfer, and an explanation given to them of the need for transfer. This discussion should be documented.
- All equipment used for transfer purposes must conform to the relevant safety standards and should have daily safety checks.
- Equipment used for transfers must be robust, durable, and lightweight and if electrical, battery powered.
- Monitoring must be continuous throughout the transfer. All monitors, including ventilator displays and syringe drivers should be visible to accompanying staff.
- A written record of clinical events, monitoring and therapy during transfer must be made.
- The patient must be wrapped with blankets to ensure they stay warm.
- A full verbal and written handover must be given to the receiving staff by the transferring personnel.
- Patients and their relatives should be kept informed at all stages of the transfer process  
Relatives must be informed of expected time of arrival to the new location and given contact details of the critical care unit.
- Check lists should be used to help to ensure that all necessary preparations and safety procedures have been completed, prior to each stage of the transfer.

## **Appendix 1**

### **Guidelines for the Transfer of a Critically Ill Adult to another Hospital**

#### **Aim**

The Department of Health's publication Comprehensive Critical Care made planning for inter-hospital transfer of the critically ill patient mandatory at local, regional and national level, with transport services organised and coordinated to deliver safe, efficient, and timely inter-hospital transfer, of all critically ill or injured patients.

All acute hospitals must have systems and resources in place to resuscitate, stabilise and transport critically ill patients when required. (ICS 2019)

#### **Transfer Decisions**

- Transfer decisions following an escalation in a patient's care must be made by the lead consultant at the transferring unit after full assessment of the patient and discussion between appropriate medical staff at the referring and receiving hospitals.
- The basis of a decision to transfer is an assessment of the risks, benefit and urgency associated with each individual patient. This must be documented by a senior clinician.
- Transfer for immediate lifesaving interventions must not be delayed by lack of availability of a critical care bed. If a critical care bed is not available at the nearest NHS acute Trust, a bed should be located at the nearest Trust within Cheshire and Mersey.
- The transfer process is the joint responsibility of the referring consultant, at referring unit and the consultant at the receiving unit and transfer personnel. Final authority to accept the referral rests with the ICU consultant in the receiving unit.
- The patient, where possible, and their next-of-kin should be informed of the decision to transfer, and an explanation given to them of the need for transfer. This discussion should be documented.

#### **Transfer Arrangement**

- Selection of transfer mode - road and air - must consider the following.
- Nature of the illness
- Urgency of transfer,
- Quality of transfer environment
- Mobilisation time needed.
- Geographical factors
- Weather, and traffic conditions

#### **Accompanying Personnel**

- In addition to the transfer vehicle crew a critically ill patient must be accompanied by a minimum of two attendants both appropriately trained in transfer of patients who require an escalation in care and critical care transfers. One must be an experienced medical

practitioner competent in resuscitation, airway management, ventilation and other organ support.

- All staff potentially involved in the transport of critically ill patients should have access to appropriate educational resources, received regular training in transfer medicine and have the opportunity to gain experience in a supernumerary capacity before being deemed as competent to undertake critical care transfers.
- This person must be accompanied and assisted by another experienced person, usually a nurse or ODP familiar with critical care procedures that is trained and competent in critical care transfer procedures and equipment.
- The outcome of the risk assessment prior to the transfer should be used to determine the competencies of the staff required to accompany the patient during transfer.
- All staff involved in transfers must be able to demonstrate the range of competencies appropriate to their role in the transfer. Staff without the appropriate training and competencies should not undertake unsupervised transfers.

Details of Transfer Courses and training are available through the critical care networks.

## **Equipment**

- All equipment must conform to the relevant safety standards and should have daily safety checks.
- Equipment used for transfers must be robust, durable, and lightweight and if electrical, battery powered.
- A monitored oxygen supply to last the maximum duration of the transfer, plus a reserve of 1-2 hours, is essential and should be available for all patients needing to be transferred.
- Standard equipment for establishing and maintaining secure airway must be available.
- There should be a portable mechanical ventilator with disconnection and high-pressure alarms, a means for providing PEEP and facilities for variable FiO<sub>2</sub>, I/E ratio, respiratory rate and tidal volume.
- A portable monitor should be used which is battery powered, with a clear illuminated display is required to record ECG, oxygen saturation, non-invasive blood pressure, invasive pressures, end-tidal carbon dioxide and temperature. Preferably the monitor will have a recording facility and visible and audible alarms.
- Portable suction and a defibrillator must be available for the transfer.
- Appropriate drugs and a number of syringe pumps with long battery life must be available.
- Clear communication should be paramount throughout the transfer process.
- All transfer equipment must be identified in a written local protocol, checked and such checks formally audited.
- Equipment must be serviced, maintained and checked prior to use in such a way as to reduce the risks of failure during transfer.
- All critical care units when transferring critically ill patients must have access to a CEN1 compliant transfer trolley.
- All monitoring and equipment must be suitable for use in the transfer environment and mounted on the transfer trolley in such a way as to be CEN compliant.

## **Preparation for transfer**

- Patients should be appropriately resuscitated and stabilised prior to transfer to reduce the physiological disturbance associated with movement and reduce the risk of deterioration during the transfer.
- Appropriate respiratory support for the patient must be established Intubation of the patient must be considered prior to transfer.
- Ensure adequate venous access in the patient is available and vascular access devices that are in situ are securely anchored and flushed prior to transfer.
- All notes, X-rays etc. must be checked and their presence assured.
- Contact must be made with a named person at the receiving NHS critical care unit and the method of future contact established and documented.

## **Inter-hospital Management**

- Monitoring must be continuous throughout the transfer. All monitors, including ventilator displays and syringe drivers should be visible to accompanying staff.
- A written record of clinical events, monitoring and therapy during transfer must be made. The patient must be wrapped with blankets to ensure they stay warm.
- A full verbal and written handover must be given to the receiving staff by the transferring personnel.
- Patients and their relatives should be kept informed at all stages of the transfer process Relatives must be informed of expected time of arrival to the new location and given contact details of the critical care unit.
- Check lists should be used to help to ensure that all necessary preparations and safety procedures have been completed, prior to each stage of the transfer.



## Appendix 2. Supplementary equipment list for use during transfer

### Advanced Airway Equipment

1x ET Tube 6  
 1 x ET Tube 7  
 1 x ET Tube 8  
 1 x ET Tube 9  
 2 x laryngoscope Handles , Bulbs Batteries  
 1 x Laryngoscope Blades 3  
 1 x Laryngoscope Blades 4  
 2 x Endotracheal ties  
 1 x Magill Forceps  
 1 x Tape for securing ET  
 3 x Lubricant gels  
 1 x Stylet  
 1 x Gum Elastic Bougie  
 1 x Tracheal dilator  
  
 1 x Scalpel size 22  
 1 x 10ml syringe  
 1 x Torch  
 2 x face masks  
 1 x ETCO2 indicator

### Self-ventilating Equipment

1 x Guedel airways size 2  
 1 x Guedel airways size 3  
 1 x Guedel airways size 4  
 1 x Nasopharyngeal airways 6  
 1 x Nasopharyngeal airways 7  
  
 1 x Oxygen Mask-non rebreathe size 4  
 1 x Oxygen Mask-non rebreathe size 5  
 2 x Oxygen tubing

### Breathing Equipment

1 x I-gel size 3  
 1 x I-gel size 4  
 1 x I-gel size 5  
 1 x Airway HME Filter  
 1 x Catheter Mount  
 1 x Waters circuit  
 1 x Sterile scissors  
 1 x Anaesthetic mask size 4 Green  
 1 x Anaesthetic mask size 5 Orange  
 1x Stethoscope  
 1 x Wave form capnograph

### Suction Equipment

2 x Yanker suckers  
 2 x Suction catheters (10F)  
 2 x Suction catheters (12F)  
 2 x Suction catheters (14F)  
 2 x Suction tubing

### External Equipment

1 x self-inflating bag and mask with oxygen reservoir and tubing (BVM)

### Inside pouch on side of bag

2 x Clinical waste bags  
 1 x Sharps box ( to be sourced locally )  
 1 x Hand-held portable suction  
 3 x IV Fluids (crystalloid) 500ml  
 1 x Pressure bag

### Circulation Equipment

2 x IV cannula size 14G  
 2 x IV cannula size 16G  
 2 x IV cannula size 18G  
 2 x IV cannula size 20G  
 2 x IV cannula size 22G  
 10 x Pairs of non sterile gloves  
 5 x Luer lock syringes 20ml  
 4 x Luer lock syringes 50ml  
 3 x Chloraprep skin wipes  
 10 x Alcohol wipes  
 2 x Blood./Colloid fluid giving sets (Gravity)  
 5 x Infusion device giving sets  
 5 x infusion device extension sets  
 4 x 3-way taps ( or equivalent)  
 10 x Obturators (Red and/or white bungs)  
 1 x Micropore tape  
 4 x Gauze  
 5 x Cannula dressings  
 12 x ECG Electrodes  
 1 x Trauma shear scissors  
 10 x Labels  
 10 x Sodium Chloride ampoules (flush)

### Interventional circulation Equipment

1 x EZ-IO Intraosseous Device  
 3 x EZ-IO Needles  
  
 5 x Needles Green  
 5 x Needles Blue  
 5 x Needles White  
 5 x Drawing up needles  
 2 x Tourniquets

## Appendix 3. Pre transfer check list examples

### 1: Is patient stable for transport?

#### Airway

- Airway safe or secured by intubation
- Tracheal tube position confirmed on chest X-ray

#### Ventilation

- Adequate spontaneous respiration or ventilation established on transport ventilator
- Adequate gas exchange confirmed by arterial blood gas
- Sedated and paralysed as appropriate

#### Circulation

- Heart rate, BP optimised • Tissue & organ perfusion adequate
- Any obvious blood loss controlled • Circulating blood volume restored.
- Haemoglobin adequate
- Minimum of two routes of venous access
- Arterial line and central venous access if appropriate

#### Neurology

- Seizures controlled, metabolic causes excluded
- Raised intracranial pressure appropriately managed

#### Trauma

- Cervical spine protected
- Pneumothoraces drained
- Intra-thoracic & intra-abdominal bleeding controlled
- Intra-abdominal injuries adequately investigated and appropriately managed
- Long bone / pelvic fractures stabilised

#### Metabolic

- Blood glucose > 4 mmol/l
- Potassium < 6 mmol/l
- Ionised Calcium > 1 mmol/l
- Acid – base balance acceptable • Temperature maintained

#### Monitoring

- ECG
- Blood pressure
- Oxygen saturation • End tidal carbon dioxide
- Temperature

## Appendix 4. Pre transfer check list examples

### 2. Are you ready for departure?

#### Patient

- Stable on transport trolley
- Appropriately monitored
- All infusions running and lines adequately secured and labelled
- Adequately sedated and paralysed
- Adequately secured to trolley
- Adequately wrapped to prevent heat loss

#### Staff

- Transfer Risk assessment completed
- Staff adequately trained and experienced
- Received appropriate handover
- Adequately clothed and insured

#### Equipment

- Appropriately equipped ambulance
- Appropriate equipment and drugs
- Pre-drawn up medication syringes appropriately labelled and capped
- Batteries checked (spare batteries available)
- Sufficient oxygen supplies for anticipated journey
- Portable phone charged and available
- Money for emergencies

## **References**

Intensive Care Society / Faculty of Intensive Care Medicine (2019) ***Guidance On: The Transfer of The Critically Ill Adult***

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