Midlands Critical Care & Trauma Networks NHS

Birmingham & Black Country, Central England and North West Midlands Critical Care Operational Delivery Networks

Standards and guidance for the transfer of adult critical care patients. (From one hospital site to another)

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Title	Standards and guidance for transfer of adult critical critical care patients – (from one hospital site to another)
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Amendments

P9	Removal of wording: whether fixed or rotary wing	Sarah Graham Rob Dawes
P9	Inclusion of wording starting from the sentence: There are a number of…..	Sarah Graham Rob Dawes

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1.0 Introduction

The transfer of critically ill patients from one hospital to another may be necessary to facilitate access to appropriate clinical care, including specialist investigation or treatment. The transfer of critically ill patients is however not without risk, and provider organisations must make every effort to reduce the need for transfer of patients arising from lack of critical care capacity alone. The primary aim for all transfers is to ensure safety and minimise potential risk at all times. This principle applies to both intra (same trust/different site) and inter-hospital transfers; patients and staff. (It does not apply to internal transfers, e.g. ED to Critical Care or to major incidents/mass casualty incidents, please continue to use your own internally process/documentation/major incident plans). It is none the less anticipated, that the requirement for patient transfer between organisations for a higher level of care is likely to increase as reconfiguration of specialist services takes place across the region. Where transfer is required three over-arching principles must be observed.

- The potential benefits of any transfer must be weighed against the clinical risks.
- No transfer is so urgent as to compromise the safety of the patient or staff.
- Staff undertaking transfers must have the required level of knowledge and competence as defined in the *Guidelines for the transport of the critically ill adult,* [1] *(3rd Edition, 2011*

The development of guidance is therefore required to underpin and support safe clinical practice and address the risks associated with transferring critically ill patients. These standards and guidelines aim to assist organisations and individuals to improve the treatment of patients, who require transfer between various hospital settings including but not limited to:

- General wards/emergency care/theatres and critical care/diagnostic services.
- Primary, secondary and tertiary sites.

This guidance should be used in conjunction with the Intensive Care Society *Guidelines for the transport of the critically ill adult,* [1] *(3rd Edition, 2011), Guidelines for the provision of Intensive Care Services* [2] *(2015) and the Association of Anaesthetists of Great Britain & Ireland Safety Guidelines for Inter hospital Transfers (2009)* [3]

As part of an effective approach to clinical governance with the ultimate aim to standardise practice amongst all organisations within the Operational Delivery Networks, the intention is for Provider Organisations to use the guidance when developing and reviewing their own transfer policies.

Each organisation should nominate a lead consultant for critical care transfers with responsibility for guidelines training and equipment provision. This individual should report to the critical care board (or equivalent).

2.0 Principles of transfer

2.1 The decision to transfer any critically ill patient will always be a balance of associated risks and benefits. The decision must be made by a consultant in critical care medicine or anaesthesia at the referring (parent) hospital, in discussion with consultant colleagues from the receiving hospital and whenever possible the patient. In all cases the patient and/or next of kin must be promptly informed of the need for transfer. The final decision to accept a patient lies with the critical care consultant in the receiving hospital. However, there may be occasions when decisions for time critical transfers are initiated or made without direct discussion with a consultant in intensive care medicine or a critical care bed being identified at the receiving hospital in accordance with two Coroners Section 28 reports. This would include situations where guidelines exist to support decision making and immediate transfer for time critical specialist management for example, referral to a tertiary neurosciences centre, as delaying transfer to a neurosurgical centre for definitive treatment can lead to harm including death.

2.2 As a result, the receiving organisation should aim to work in accordance with the current national guidance as set out in the following documents:

https://www.judiciary.gov.uk/publications/mary-muldowney/

https://www.judiciary.gov.uk/wp-content/uploads/2017/02/Dennett-2017-0026.pdf

2.3 Assessment of risks associated with any inter hospital transfer must take account of the benefits of transfer, the patient's current physiological status and the emergent nature of the intervention(s) required.

2.4. When considering a capacity transfer, all internal critical care escalation options should have been exhausted and transferring the patient to another hospital must only occur as a last resort. Recommended strategies to create capacity should include:

2.4.1 Expedite delayed discharges.

2.4.2 Review current patient case mix and identify any additional patients for safe discharge from critical care.

2.4.3 Obtain additional appropriately trained staff and utilise non-commissioned critical care bed spaces.

2.4.4 Manage post-operative cases temporarily in theatre recovery area, dependent on local policies and staffing arrangements.

2.4.5 Some patients may be cared for in the general ward environment where there are sufficient numbers of skilled staff and/or with the support of the Critical Care Outreach Team or equivalent, where these are available. For example, non-invasive ventilation may be carried out on designated wards and patients with tracheostomies may well be managed safely on cohort wards.

2.4.6 As a short-term plan, evaluating patient/nurse dependency ratios and service capability within the critical care environment, thereby assessing if an additional patient can be accommodated.

2.4.7 Patients with predominantly cardiac problems may be managed in a coronary care unit following discussions with the duty Cardiologist, dependent on facilities.

3.0 Prior to Transfer

3.1 All admissions and discharges to / from critical care or transfers between hospitals must be discussed on a consultant to consultant basis.

3.2 All units should have a capacity management plan in place to optimise bed availability and manage short term capacity issues.

3.3 Non-clinical transfers should only occur as a last resort when other options for managing capacity in the referring hospital have been exhausted.

3.4 All units will use the online Directory of Services (DOS) bed availability system to identify available beds **www.pathwaysdos.nhs.uk.** You will need to setup a DOS account in order to do this.

3.5 It is not acceptable for a unit to hold their last critical care bed for potential local admissions if a bed is required for a critical care patient from another unit.

3.6 Non-clinical transfers should only occur within the referring transfer group, these are groups which are based upon historical transfers, geography and bed capacity. For clarity, a **Transfer Group** is: ***"A group of hospitals that serves any individual hospital to which capacity transfers can be made".*** Any non-clinical transfers occurring outside agreed transfer group must be recorded as critical incidents on datix and reported to the Chief Executive / executive team of both hospitals.

3.7 It is recommended that the specialist tertiary beds are not used for capacity transfers *except* to avoid long distance transfers of patients at times of bed shortage. However, it is expected that all other contingencies have been explored prior to this course of action.

3.8 It is the referring consultant's responsibility to ensure that the patient being transferred is suitable for transfer and that an appropriate risk assessment has been completed prior to transfer.

3.9 The staff transferring the patient should have the appropriate skills and experience to enable them to transfer the patient safely.

3.10 Standards of monitoring and care during transfer should comply with nationally published guidelines.

3.11 All equipment used must be compliant with relevant safety standards and be regularly serviced and maintained.

3.12 All transfers should be documented using the Network approved transfer form, (appendix 1) which should be completed as fully as possible and retained by the receiving hospital and kept in the patient notes.

4.0 Definitions

4.1 Critical care patients are defined utilising the DOH (2000) definition of level 0 to level 3 as shown in table 1:

Table 1

Level 0	Patients whose needs can be met through normal ward care in an acute hospital
Level 1	Patients at risk of their condition deteriorating, or those recently relocated from higher levels of care, whose needs can be met on an acute ward with additional advice and support from the critical care team
Level 2	Patients requiring more detailed observation or intervention including support for a single failing organ system or post-operative care and those 'stepping down' from higher levels of care
Level 3	Patients requiring advanced respiratory support alone or basic respiratory support together with support of at least two organ systems. This level includes all complex patients requiring support for multi-organ failure

(Department of Health, 2000)

4.2 The type of transfer can be categorised as:

Clinical Transfer / Tertiary Referral	Transfer of a patient to another hospital for care or facilities that are not available within the referring hospital e.g. specialised critical care or discrete surgical, neurosurgery, general surgery and vascular surgery radiological or medical interventions such as angiography, trans jugular intrahepatic portosystemic shunt (TIPPS)
Non-Clinical Transfer	Transfer of a patient due to insufficient bed capacity in the referring unit. This Includes transfers between different hospitals within the same Trust.
Repatriation	The movement of a patient being transferred back to the initial referring (parent / host)

	hospital or to a hospital nearer to the patient's home.
Primary Transfer	The movement of a patient from the scene of injury or illness to the nearest receiving hospital.
Secondary Transfer	The movement of a patient from any hospital facility (e.g. emergency department, ward, theatre or critical care unit) to another hospital site.
Intra Hospital Transfers	These are described as the movement of a patient between areas/departments within the same Trust and happen for a variety of reasons e.g. diagnostics, operating theatre, interventional radiography, movement between clinical area / departments.

5.0 The Decision to Transfer

5.1 Transfer of the patient should not take place until:

5.1.1 Their condition is deemed adequately stable for transfer or that transfer is necessary for life saving treatment.
5.1.2 The transfer equipment is checked and in working order.
5.1.3 Staff with the appropriate skills are available.
5.1.4 The receiving hospital area has informed that they are ready to receive the patient.
5.1.5 All lines, tubes, leads are appropriately secured.
5.1.6 The Critical Care Networks pre-transfer checklist should be used to ensure all key elements above are checked and in place before a transfer occurs. The checklist is located on the back of the Network transfer form. (Appendix 1)

6.0 Organising a Critical Care Transfer

6.1 Consultation Process

6.1.1 If a critical care transfer is required, the Directory of Services (DOS) system should be utilised to ascertain local bed availability within the local Network.
https://nww.pathwaysdos.nhs.uk/app/controllers/login/login.php
In the event of a patient being referred to a tertiary referral centre for life saving treatment, then direct referrals should be made to those organisations and specialities following agreed local pathways.

6.1.2 Any intra- or inter-hospital transfer to or from a critical care unit must always involve discussions with the Critical Care Consultant and Critical Care Nursing Shift Leader.

6.1.3 It is accepted that Intensive Care Consultants often do not have admitting rights and care for patients admitted under a parent specialty.

6.1.4 Once an available critical care bed has been located, it is the responsibility of the consultant in the referring (parent) hospital to decide upon the suitability of patients for transfer and conversely the responsibility of the consultant in the receiving hospital to determine the suitability of the patient for admission.

6.1.5 The decision to transfer a critically ill patient may also involve consultants from other specialities. Patients should not be transferred without a consultant from the parent clinical team at the referring (parent) hospital taking responsibility for the ongoing management of that patient.

6.1.6 A consultant or nominated other will be responsible for organising the transfer of the patient and identifying appropriate staff to undertake the transfer.

6.1.7 Contact must be made with the receiving hospital consultant to discuss and clarify clinical details and discuss specialist management prior to, and during transfer.

6.1.8 The patient continues to be the responsibility of the transferring team until the patient has been formally handed over to the receiving hospital post-transfer.

6.1.9 In the case of transfers from the Emergency Department, the ED Consultant may take overall responsibility but must liaise with colleagues from anaesthetics or critical care at the referring hospital. The transfer must be accepted by the receiving hospital using the same principles given above.

6.1.10 If a capacity transfer is required, it is recommended that such transfers take place within the Network if at all possible and that these transfers are recorded as a critical / untoward incident.

7.0 Selection of Transport Mode

7.1 Road ambulance is the most appropriate mode of transport for the majority of inter-hospital transfers. Road transportation has the advantage of a rapid mobilisation time, less limitations by adverse weather conditions, less potential for physiological disturbances, easy patient monitoring and a lower overall cost. Ambulance Control should be informed immediately that a critical care transfer is to take place and they will require details regarding patient status, escorting personnel and the estimated time the patient will be ready for transfer. Clear indications of timeframes required must be obtained and agreed when booking the transfer and whether a time critical transfer is required.

7.2 Arrangements for air transfers are made through Ambulance Control. *It should be noted that it is unlikely that the escorting personnel will be returned by helicopter*; therefore, alternative arrangements will need to be made to return staff to their base.

7.3 NB. Only staff with additional specialist training should undertake air transfers, Ambulance Control may on occasion advise that air transfer is preferable to road. There are a number of important factors to consider before deciding on transferring a patient by air. Due to the speed of the vehicles, air support should be considered for longer distance transfers, typically where the anticipated length of transfer is over an hour. Weather does have implications for air vehicles (in particular fog) and in situations of severe weather the advice of the air support unit should be sought to see if air transit is feasible. Most air transfers currently occur in daylight hours although it is possible to transfer by helicopter at night between hospitals with lit helipads.

8.0 Accompanying Personnel

8.1 The Networks recommend that critically ill patients should normally be accompanied by two suitably trained, experienced and professionally competent attendants during transfer, one of which should be a medical practitioner or an advanced critical care practitioner (ACCP). The background of the accompanying staff (medical/nursing/other) and the competencies required will depend on the nature of the underlying illness, co-morbidity, level of dependency and risk of deterioration during transfer.

8.2 The escorting staff should be determined by the consultant arranging the transfer in partnership with the senior nurse/shift coordinator. This decision should be based on the condition of the patient and the level of expertise required.

8.3 Prior to each transfer the level of risk should be established and recorded by undertaking a risk assessment which may include:

8.3.1 Patient's current clinical condition (assessed using a physiological track and trigger score where appropriate, and other physiological parameters relevant to the patient's condition).

8.3.2 Specific risks related to the patient's condition.

8.3.3 Likelihood of deterioration during transfer.

8.3.4 Potential for requiring additional monitoring/intervention/treatment.

8.3.5 Duration and mode of transfer.

8.4 NB: The outcome of the risk assessment should be used to determine the competencies of the staff required to accompany the patient during transfer.

8.5 The escorting staff should ideally have been directly involved with the care of the patient and be able to provide the required handover of patient and clinical information.

8.6 Staff potentially involved in the transport of critically ill patients should receive appropriate training in transfer medicine and have the opportunity to gain experience

in a supernumerary capacity. All staff involved in transfers must be able to demonstrate the range of competencies appropriate to their role. There are local and national courses run by external organisations that medical and nursing staff can access and The National Competency Framework for Registered Nurses in Adult Critical Care, Step 1 and Step 2 Booklets contain sections about intra and inter hospital transfers. (Appendix 2)

8.7 Staff escorting critically ill patients must be appropriately insured. This is usually covered through the trusts staff indemnity clause.

9.0 Preparing for Transfer

9.1 Prior to any transfer, measures must be taken to ensure the patient's condition is stable. Meticulous resuscitation and stabilisation will reduce complications during the journey, although this needs to be balanced against the need for immediate transfer for specialist life-saving intervention.

9.2 Prior to departure, escorting staff must ensure they have an appropriate transfer bag and associated equipment which they have checked.

9.3 Staff who have not been involved in the patient's direct care must familiarise themselves with the patient's history, treatment and investigations undertaken. Results from pathology and diagnostic services should be reviewed and recorded. A full clinical assessment including a physical examination should be performed and documented.

9.4 The patient's airway must be assessed, and if appropriate secured and protected. Comatose and burns/smoke inhalation patients pose a particular risk from airway obstruction developing during transport and so careful consideration must be given to intubation prior to setting off.
NB. Significant swelling will occur in major burns 6 -12 hours after injury; therefore, it is recommended that endotracheal tubes are not cut.

9.5 Adequate sustainable gas exchange must be achieved before transportation commences. It is therefore recommended that patients are attached to the transfer ventilator for a period of at least 15 minutes prior to transfer, which allows for blood gas analysis before departure. However, clinical emergency to transfer the patient may limit this assessment/process and decision to transfer must be based on experienced clinical judgement. Advanced ventilator settings such as inverse ratios may not be achievable on portable ventilators.

9.6 Intubated patients should normally be sedated, paralysed and mechanically ventilated. Inspired gases should be humidified using a heat moisture exchange filter (HME).

9.7 Inspired oxygen should be guided by oxygen saturation and ventilation by end tidal carbon dioxide monitoring (EtCO2) with a trace displayed on the transport monitor.

9.8 Where a pneumothorax is present or suspected, a chest drain(s) should be inserted prior to departure as part of the patient's meticulous resuscitation and the minimisation of risk/complications during transport.

9.9 Secure venous access is mandatory and at least two intravenous cannulae (central or peripheral) are required during transfer. At least one of these should be large bore. Suitably secured arterial cannulae for blood pressure monitoring where possible would be considered best practice.

9.10 Hypovolemic patients do not tolerate transfer movement well. The source of continuing blood loss should be identified and controlled. Circulating volume should be optimised wherever practicable; however, this may require ongoing intervention during transfer. If inotropes or other vasoactive drugs are being used to optimise haemodynamic status, patients should be stabilised prior to leaving the referring unit. Sometimes, in time-critical situations such as major trauma, circulatory stability can only be achieved following definitive surgical intervention.

9.11 A naso*/oro-gastric tube and urinary catheter should be passed and on free drainage unless there is a clear clinical indication not to do so.
**NB: Should be avoided in head injury patients*

9.12 When cervical spine injury is suspected, full spinal immobilisation must be implemented until clearance has been given. The injury should be confirmed or excluded at the first possible opportunity. Fractures should receive, at the very least, a basic toilet and splinting.

9.13 When transferring a patient with spinal cord injury the patient must be aligned, secured and protected. The preference is to use a vacuum mattress. If a scoop is to be used, ensure that pressure area protection is provided in the form of a specialised pressure blanket.

9.14 A pre-departure checklist is recommended for use by escorting staff to help ensure that all preparations have been completed (appendix 1).

9.15 Conscious patients should be kept fully informed of the transfer and other relevant information. Relatives should similarly be kept informed of travel arrangements.

9.16 Before departure the receiving unit should be contacted with an update on the patient's condition and to provide an estimated time of arrival.

9.17 To ensure adequate communication for inter-hospital transfers, a mobile phone, contact numbers and money should be available during transfer for emergencies.

9.18 Inter-hospital transfer personnel should have high visibility and warm clothing in case they need to leave the vehicle.

10.0 Management During Transfer

10.1 The Ambulance

10.1.1 The Committee for European Standardisation dictates that all patient trolleys for the purpose of inter- or intra-hospital transfer will be expected to meet the minimum European standards of safety and it will become the responsibility of the user to assure that this level is attained.

10.1.2 It is good practice to prepare critically ill patients for transfer before requesting transportation to ensure effective 'turn-around time'.

10.1.3 Patients must be safely secured to the transport trolley by means of appropriate restraint.

10.1.4 Pressure areas should be appropriately protected and warming/insulating blankets should be used to keep the patient warm unless clinically contraindicated. The patient's temperature should be monitored and recorded.

10.1.5 Indwelling lines and tubes should be secure, visible and accessible.

10.1.6 All equipment must be securely mounted/stowed away. Equipment should be either fastened to the transfer trolley or stored in lockers within the ambulance. Under no circumstances should equipment (e.g. syringe driver) be placed on top of the patient trolley. This may become a dangerous projectile in the event of a sudden deceleration. Gas cylinders must be held in secure housings at all times. Monitors should be clearly visible by the transferring team from their seated position.

10.1.7 During ambulance transfers staff should remain seated at all times and wear available seat belts. When emergency patient intervention is required the ambulance must first be stopped. Adequately resuscitated and stabilised patients should not normally require any significant changes to their treatment during transport. If, however, despite meticulous preparation, unforeseen clinical emergencies arise, and the patient requires intervention, this should not be attempted in a moving vehicle. The vehicle should be stopped in a safe place before administering treatment.

11.0 Equipment

11.1 All transfer equipment and medications must be checked prior to departure; it is especially important that the escorting personnel are familiar with and competent in the operation of all equipment used in the transportation process.

11.2 Ideally, a transfer trolley should be used, however this should be clarified with the ambulance service provider upon booking the transfer, to ensure a safe transfer.

11.3 Oxygen supplies must be adequate to cover the transportation process, e.g. from bed to bed, with sufficient reserve to allow for delays; it is recommended to have at least twice as much as anticipated. It is the responsibility of the escorting personnel to calculate requirements prior to departure.

11.4 Escorting personnel must ensure they are competent in the use of the defibrillator should it be required during a transfer.

11.5 Transfer monitors should allow clear display of the physiological parameters. Monitor alarms should be both audible and visible. The monitor should be adequately charged and have a back-up battery pack. All equipment should be checked for compatibility with the ambulance power supply.

11.6 Portable ventilators must have disconnection and high-pressure alarms and the facility for post end expiratory pressure (PEEP), the ability to allow manipulation of oxygen concentration, inspiratory: expiratory ratios, respiratory rate and tidal volume as a minimum specification. In addition, the ability to provide pressure-controlled ventilation and continuous positive airway pressure (CPAP) is desirable. CO2 analysis including waveform display is mandatory, side stream technology is recommended.

11.7 Infusion pumps with the facility to run on battery must be sufficient in number to allow delivery of essential medications and fluids. This equipment should be fully charged prior to departure and additional syringes of medications e.g. inotropes and sedatives should be carried to ensure timely exchange.
NB: Gravity dependent drips are recognised as unreliable for use in moving vehicles and should be avoided.

11.8 Daily checks of transfer equipment must be performed and documented to ensure that equipment is fully functional and ready for use at all times. All equipment must be kept on charge when not in use. It is the responsibility of the transferring staff to check the equipment is safe to use prior to transfer.

11.9 Bariatric Patients – this must be requested specifically with the ambulance service provider upon booking the transfer to ensure the correct equipment / vehicle can be obtained to ensure a safe transfer.

12.0 Monitoring During Transfer

12.1 The standard of care, monitoring and documentation during transport should be at least as good as that at the referring hospital or base unit. The minimum standards for monitoring are:

- Continuous cardiac rhythm (ECG) monitoring
- Oxygen saturation (SPO2)
- End tidal carbon dioxide (in ventilated patients)
- Temperature
- Respiratory rate
- Non-invasive blood pressure* **(as a back-up, NIBP monitoring should be available in addition to invasive monitoring systems).**

*Intermittent non-invasive blood pressure monitoring is sensitive to motion artefact and is unreliable in a moving ambulance. It is also a significant drain on the battery supply of monitors. Therefore, continuous invasive blood pressure monitoring through an

indwelling arterial catheter should be used or considered in the event of a time critical transfer.

12.2 Central venous catheterisation is not essential but may be of value in optimising filling status prior to transfer or may be required for the administration of inotropes and vasopressors.

12.3 In mechanically ventilated patients the oxygen supply, inspired oxygen concentration ventilator settings and airway pressure must be monitored.

12.4 The recording of patient physiological parameters and treatments during transportation must be recorded on the Network Transfer form.

13.0 Documentation

13.1 A Network Transfer form should be used for every level 2 or 3 inter-hospital critical care transfer and kept by the receiving hospital and put in the patient notes.
NB: it is the responsibility of the transferring clinician from the referring hospital to ensure that all fields and required information are completed.

13.2 When the patient arrives at the receiving area/hospital, there should be a formal handover from escorting personnel to the medical and/or nursing staff of the receiving unit.

13.3. Handover must include a verbal and written account of the patient's history, vital signs, therapy and significant clinical events during transport. X-rays, scans and other investigation results should be described and handed over to receiving staff. The use of formal structures to aid safe communication of information such as the SBAR (Situation-Background-Assessment-Recommendation) tool or a transfer receiving checklist such as in (appendix 1) is recommended.

13.4 It is recognised that medical records and investigations will need to be transferred with the patient. Careful consideration should be given as to **how** they are transported. A member of the transferring team should be identified to take responsibility for the transfer of the documentation and that it is in line with local/national data protection and information governance policy.

14.0 Issues/Incident Reporting

14.1 Any issues/incidents that occur during transfer of a patient must be reported by the transferring clinician upon returning to the referring hospital, using the Trust critical care adverse incident system. The incident **must** also be reported to the Midlands Critical Care Network office, using the reporting system described below. We no longer ask for incidents to be documented on the transfer form as these can be mislaid or do not progress to the Network office to investigate.

14.2 On occasions issues associated with a transfer will manifest itself after the patient has arrived on the receiving unit; this must be recorded by the receiving clinician and reported as above.

14.3 When providing issues/incident details to the Network office, it can be done in 2 ways; preferably via the online Critical Care Related Issues Database (CCRID) report form on the network website, link is https://www.mcctn.org.uk/ccrid.html (appendix 3). The website is not password protected.

- Click on the critical care heading
- Click on the report form button and enter the necessary details, this excludes all patient identifiable details. You will then receive a secure NHS.net email from the Network office initiating dialogue with you and requesting patient details for the sole purpose of fully investigating the incident.

14.4 The reporting system can be easily accessed using all computer platforms and mobile telephones. It allows the Network office to effectively monitor and audit incidents as well as ensuring a safe and timely investigation process.

14.5 If you are unable to access the website you can send the details of the incident via secure NHS email to criticalcare.mcctn@nhs.net. Please remember that **you** also need to send the email via a secure email address if sending patient identifiable information, if you do not have an NHS.net email or unable to encrypt your message please use the reporting system on our website.

14.6 All issues/incidents pertaining to critical care transfers should be discussed at the Trust Critical Care Delivery Group and Critical Care Network Boards/Forums with lessons learned and shared to enhance best practice. Any remedial action required should be recorded in an accompanying action plan.

15.0 Auditing of Inter-Hospital Transfers

15.1 The Network office will measure the incidence of transfer issues using data obtained from MELA and the Incident Reporting system (CCRID). Audit results will be shared and discussed at local and Network meetings.

16.0 Management of 'Outliers'

16.1 It is the responsibility of each critical care unit to monitor the outliers transferred due to capacity pressures which should be compliant with local guidelines and aligned to NICE guidelines. Information on patients expected to be repatriated must be conveyed and acted upon at unit/trust bed management forums/meetings.

16.2 The ethos of the Networks is that the facilitation of repatriation should be undertaken as a priority, if clinically appropriate, and that repatriation of outlying patients should be considered within local operational policies.

17.0 Transfers from Independent Hospitals into the NHS

17.1 When the occasion arises, that patients being cared for in the independent sector require admission to a critical care unit within a network, local policies should be referred to. Each Independent Sector Organisation should have a service level agreement with a local NHS provider for patients who unexpectedly require critical care provision.

17.2 Level 3 beds are limited within the independent hospitals located within the MCC&TN and the provision of level 2 beds also varies across the sector.

18.0 References

1. Intensive Care Society (2011) Guidelines *for the Transport of Critically Ill Adult*. Intensive Care Society, London, UK

2. The guidelines for the provision of Intensive Care Services (2015) Joint Professional standards committee of the Faculty of Intensive Care Medicine and the Intensive Care Society.

3. Safety Guidelines for Inter Hospital Transfers (2009) The Association of Anaesthetist's Great Britain & Ireland, London, UK.

19.0 Acknowledgments

Midlands Critical Care Networks Transfer Group
North West Critical Care Networks
North of England Critical Care Network
West Yorkshire Critical Care Network
West Midlands Ambulance Service
North West Midlands Ambulance Service
East Midlands Ambulance Service

Appendix 1 - Transfer Form / Checklists

Midlands Critical Care & Trauma Networks NHS

Name	
Hospital No.	
NHS No.	
D.O.B	
Address	

Date of Hospital Admission	
Date of Transfer	

Weight (kg): Est ☐ Act ☐ Allergies

Transfer Details

Transferring unit	Hospital Name: ICU ☐ HDU ☐ ED ☐ Ward ☐ Other (please specify):
Receiving unit	Hospital Name: ICU ☐ HDU ☐ ED ☐ Ward ☐ Other (please specify):
Transfer reason	Management: Neuro ☐ Cardiac ☐ Renal ☐ ECMO ☐ Trauma ☐ PCI ☐ Paeds ☐ No critical care bed ☐ Repatriation ☐ Other:

Staff Arranging Transfer

At transferring unit	Name/Specialty:	Consultant in charge:
At receiving unit	Name/Specialty:	Consultant in charge:

Escorting Personnel

Doctor	Name/Grade:	GMC No:	Transfer trained? Y / N
Nurse	Name/Grade:	NMC No:	Transfer trained? Y / N
ODP	Name/Grade:	Reg No:	Transfer trained? Y / N
ACCP	Name/Grade:	Reg No:	Transfer trained? Y / N

Timings	hh:mm (24hrs)
Decision to transfer	
Ready to leave	
Ambulance booked	
Ambulance arrived	
Departed hospital	
Arrived destination	

History and Diagnosis

Ambulance Details

Transfer booking ref	
Agreed category	Time critical (< 8mins) ☐
	Urgent (within 1hr) ☐
	Priority 3 (within 4hrs) ☐
	Priority 4 (within 8hrs) ☐

Specialist Precautions

Pre-sedation GCS	/ 15 (E= V= M=)	
Neuro protection?	Spinal precautions?	Cardiac support
Head up ☐	Collar ☐ Blocks ☐	Lucas ☐
Tube taped ☐	Tapes ☐ MILS ☐	Defib conn. ☐

Vascular Access, including Site and Size

PVC	
PVC	
PVC	
CVC line	X-ray'd Y / N
Art line	
Other	

Other Devices

Chest drains ☐	Number/Site:
Abdo drains ☐	Number/Site:
Urinary catheter ☐	Balloon pump ☐
NG tube ☐	X-ray'd? Y / N
Warming ☐	Via:

Monitoring

SpO_2 ☐ ECG ☐ NIBP ☐ IABP ☐ Temp ☐ $ETCO_2$ ☐ CVP ☐ BIS ☐ Other:

Critical Care Transfer Chart

Unique Form No:

Time		
Ventilator Settings	FiO_2	
	$ETCO_2$	
	Peak airway pressure	
	I:E ratio	
	Tidal volume (mls)	
	SpO_2	
	Respiratory rate	
Fluids		
Blood	Product	Unit No.
Drugs	Name	Units
GCS	Eyes: (1-4)	
	Verbal: (1-5)	
	Motor: (1-6)	
	GCS total: (3-15)	
Pupils	Left Size	
	Left Reaction	
	Right Size	
	Right Reaction	

Pupil Size (mm): 1 2 3 4 5 6 7 8

BP

Pulse

MAP X

180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30

Blood glucose

C.V.P

Oxygen Calculation Formula:

2 x (duration of transfer in minutes) x [(minute volume x FiO_2) + driving gas for the ventilator], eg: 1 hour transfer, TV 500mls, RR 12, FiO2 = 0.6 and 1 litre per minute driving gas: (2 x 60) x [6 x 0.6 + 1] = 552 litres of oxygen.

Oxygen Cylinders Sizes: CD = 460L, D 340L, E = 680L, F = 1360L (Ref BOC Medical Gas Cylinder Chart). Note: Check gauges on cylinder - ***don't assume they are full***.

Pre-transfer checklists **Is the patient stable for transport?** ***(Tick each checkbox, or N/a if not applicable)***		
Airway	Airway safe or secured by intubation	
	Tracheal tube position confirmed on chest x-ray	
Ventilation	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	

Pre-transfer checklists **Are you ready for departure?** ***(Tick each checkbox, or N/a if not applicable)***		
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	
Organisation	Case notes, x-rays, results, blood collected	
	Transfer documentation prepared	
	Location of bed and receiving doctor known	
	Receiving unit advised of departure time and estimated time of arrival	
	Telephone numbers of referring and receiving units available	
	Relatives informed	
	Return travel arrangements in place	
	Ambulance crew briefed	
	Police escort arranged if appropriate	
Departure	Patient trolley secured	
	Electrical equipment plugged into ambulance power supply where available	
	Ventilator transferred to ambulance oxygen supply	
	All equipment safely mounted or stowed	
	Staff seated and wearing seat belts	

Receiving unit checklist **General points**	
Introductions	
All staff to introduce themselves (accepting and receiving teams)	
Who will control airway and supervise transfer?	
Handover procedures	
All lines free and tubing will reach? Patient transferred onto receiving unit bed	
Patient established on ventilator with capnography in place	
Infusions transferred to receiving units pumps	
Monitoring transferred	
Patient belongings off-loaded (After handover)	
Transfer equipment re-loaded (After handover)	

Receiving unit checklist **Patient details**	
Medical Handover	
History of current problem / mechanism of injury	
Ventilator settings / airway problems	
Interventions during resuscitation and transfer, and any problems	
Current medications	
Tubes and lines	
Wounds and drains	
Past medical history as known	
Allergies and previous medications as known	
Other problems / issues for handover	
Nursing handover	
Pressure areas / tissue viability	
Property	
Religious / spiritual needs	
Relatives information handed over	
Documentation & case notes handed over	
Infection control issues / HCAI's	

Transfer Issues
The Network Office maintains a Critical Care Related Issues Database - CCRID - which records any issues that occurred before, during or after the inter-hospital transfer of a patient . These form part of the governance reporting, and will be presented and debated at the board meetings, with a view to finding some resolution / pathway amendments / training requirements, etc. Please complete via mcctn.org.uk under the Critical Care heading

Appendix 2 – Steps 1 & 2 Competency Books

Step 1 Competency Book - Evidenced Based Practice

The following competency statement is about applying evidence based practice to the activities you undertake in critical care, it also includes audit conducted within the critical care setting and the importance of benchmarking against evidence based quality standards.

1.50 Evidenced Based Practice

You must be able to demonstrate through discussion essential knowledge of (and its application to your supervised practice):	Achieved Date/Sign	Agreed Action Plan Date/Sign
• Undertaking a literature search • Managing the quantity of literature you find • Investigating the grade of evidence found • Critiquing research evidence • Investigating the validity & reliability of any studies • Formulating opinion regarding practice • Offering recommendations for alterations/changes to practice based on your findings • How you integrate evidence based practice into your daily work • Importance of keeping up to date with developments and new resources relevant to critical care • Key professional and critical care resources that are available to you to ensure you are abreast of any developments • Any recent trends and developments within critical care that impact on the quality of patient care and service delivery • Importance of conducting benchmarking exercises against the following quality standards to demonstrate local compliance o Care Bundles o NICE guidance o ICS guidance o NPSA guidance o High Impact Interventions • CCMDS data collection and its relevance within critical care delivery o Mandatory data set o Time it should be completed o Definitions of organ support o Accurate completion o Consequence of inaccurate or incomplete data collection • ICNARC data collection and its relevance within critical care delivery o Accurate completion o Definitions and criteria o Reasons for participating o Importance of the data analysis o Ways in which the data can be used locally o Consequences of inaccurate or incomplete data collection		
You must be able to undertake the following in a safe and professional manner:		
• Apply existing national guidance to your practice • Keep abreast of changing in critical care practice • Outline recent trends and developments in critical care • Complete required benchmarking exercises accurately and in the time frame outlined • Complete the CCMDS data set accurately and at the correct time of day • Complete all sections of the ICNARC data set correctly and in the time frames• Conduct a small literature review in relation to one area of your practice, critique the literature found and offer recommendations and suggestions for practice changes base on the reviewed evidence		

Professionalism

The following competency statement is about maintaining professionalism in critical care nursing practice

1.51 Maintaining Professionalism

You must be able to demonstrate through discussion essential knowledge of (and its application to your supervised practice):	Achieved Date/Sign	Agreed Action Plan Date/Sign
• NMC code of conduct: Standards of conduct, performance and ethics for nurses and midwives (2008		
You must be able to undertake the following in a safe and professional manner:		
• Practice honestly and with integrity in order to Work within limitations of your role and recognise your own level of competency and display interest and enthusiasm • Consistently display a professional image in behaviour and appearance. Adhere to local policy and national guidelines on dress code for prevention and control of infection, including: footwear, hair, piercing and nails. o Display a responsible approach to time management including punctuality and reliability • Consistently act in a manner that is attentive, kind, sensitive, compassionate and non-discriminatory, that values diversity and act within professional boundaries o Engage with people in a way that ensures dignity is maintained whilst adopting an appropriate attitude o Demonstrate an understanding of the impact culture, religion, spiritual beliefs, gender and sexuality have on health, illness and disability • Consistently display respect for an individual's rights and choices • Consistently display an awareness of how one's own values, beliefs, emotions, health and well-being impact on practice • Adhere to trust policy on the use of social networking media		

Step 2 Competency Book - Intra & Inter Hospital Transfer

The following competency statements relate to the preparation required prior to and the management of patients during intra & inter hospital transfer. It is intended that the competencies in this section will build on the knowledge and skills you gained in Step 1

2:7.1 Preparation and transfer of the critically ill

You must be able to demonstrate your knowledge using a rationale through discussion, and the application to your practice	Competency Fully Achieved Date/Sign
• Policies/procedure/guidelines related to the transport of the critically ill patient: o ICS guidelines o Regional standards o Risk assessment o Local policy o Bed management systems o Transfer audit documentation	
• Role of team members when arranging and carrying out an intra & inter hospital transfer	
• Complete a comprehensive risk assessment in collaboration with the MDT to ensure the patient is fit or suitable for transfer	
• Identify the potential risks associated with transferring critically ill patients	

• Indications for transfer from critical care including the: o Nature: repatriation, specialist treatment, investigation, continuing care o Sequence of expected event o Urgency and time critical transfers o Reasons for reviewing individuals' priorities, needs and the time frame with which this should be undertaken	
• Transfer process including the different considerations for clinical and non-clinical transfer decisions: o Communication with relatives and on-going updating of the situation as required o Ethical issues o Legal requirements o Local escalation policies o Bed management system o Referral to receiving hospital (including critical care and specialty consultants) o Responsibility of care during transfer o Indemnity insurance o Competency and skills of transferring personnel o Risk assessment of patient's physiological requirements and maintenance of homeostasis during transit o Contingency planning/back up considerations o Drug administration during transfer o Type of transport required, time critical issues, bariatric patients o Communication with receiving hospital prior to transfer o Documentation and audit	
• Differing types of transport available and make recommendations for which is the most appropriate	
• Process for organising the appropriate transport: o Ambulance service o Vehicle specification (including on board resources and equipment) o Ambulance equipment o Types of transfer trolley available o Storage of transport equipment in transit o Time critical transfer issues	

You must be able to demonstrate your knowledge using a rationale through discussion, and the application to your practice	Competency Fully Achieved Date/Sign
• Process for preparing to undertake an intra / inter hospital transfer of a critically ill patient: o Gathering of extra battery packs, alternative equipment in case of malfunction o Clinical notes/radiology reports/recent blood profiles/investigations o Assessment of patient's physiological requirements during transfer o Accuracy of portable monitoring and equipment o Re assess safety/risk factors prior to transfer	
• Process and sequence of communication required for providing oral reports/discussions: o Information and informed consent in the conscious patient o Discussion with family members o Verbal referral and handover of patients condition to receiving unit/service o Handover of condition and physiological requirements to the transfer team/personnel o Sharing information with the team in relation to safety, risk assessments and contingency planning o Contact receiving unit/service on departure o Formal handover to receiving unit/service on arrival	

• Documentation that needs to be completed in an accurate, concise and systematic manner during a inter hospital transfer, with appropriate duplications: o Transfer form o Physiological observation chart o Nursing evaluation o Reporting of clinical incidents o Audit tool	
• Prepare the patient for transfer by assisting the wider MDT in the physiological optimisation/stabilisation o Assess potentially competing needs of the patient for pre-transfer optimisation and specialist care o Assess clinical condition of patient before leaving the critical care unit	
• Maintain the safety of the patient during transfer: o Assessment of the extra physiological stresses experienced by the patient during inter-hospital transfer o Anticipation of potential problems and planning to reduce the likelihood of their occurrence o Maintenance of situational awareness and readiness to respond to threatening situations if and as they occur	
• Demonstrate awareness of situational factors that could impact on the quality and safety of a critical care transfer	
• Identify areas in your own transfer practice that could be improved	
• Reflect on your own transfer experience	

Appendix 3 – Visual display of the Critical Care Related Issues Database (CCRID)