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Summary

It is recognised that the transfer of critically ill patients may be necessary to ensure patients are able to access clinical and specialist treatment. The transfer of critically ill patients is not without risk and should not be undertaken lightly. All attempts should be made to contain the need for transferring critically ill patients resulting from inadequate critical care capacity. The requirement for transfer across organisations for a higher level of care is likely to increase over the next five years as service reconfiguration of surgical services is implemented across the North West.

The development of formal policies is required to underpin and support safe clinical practice and address the risk associated with transferring critically ill patients.

This document aims to assist organisations and individuals in improving the treatment of patients who require transfer within or between various hospital settings including:

- general wards/emergency care and critical care
- general wards/critical care & diagnostic services
- primary, secondary & tertiary sites

Clinicians face multiple challenges ensuring transfers are undertaken with minimal risk and in the best interest of the patient. Although published standards for transferring critically ill patients exist, there remains evidence that these are not necessarily followed. These standards and guidelines have been provided by the North West Critical Care Networks to support trusts when developing and reviewing their own transfer policies as part of an effective approach to clinical governance. Each trust should undertake a detailed risk assessment at organisational level for transfers of critically ill adults. This must be placed on the trust risk register and be reviewed at least bi-annually. A copy should be sent to the relevant critical care network.
1.0 **Introduction**

1.1 This document has been produced to support acute trusts throughout the North West, and is to be used to assist in the development of local guidelines/polices.

1.2 The primary aim for all transfers is to ensure patient safety and minimise potential risk at all times. This principle applies to both intra- and inter-hospital transfers.

1.3 For all critically ill patient transfers there should be adherence to the principles of the “Management during Transfer” section of the Intensive Care Society ‘Guidelines for the Transportation of the Critically Ill Adult Patient’ (2011).

2.0 **Definitions**

2.1 For the purpose of this document ‘critically ill’ is defined as requiring a level of care greater than normally provided on a standard hospital ward i.e. Intensive Care Society Levels of Care 1-3 (ICS, 2009).

<table>
<thead>
<tr>
<th>Level 0</th>
<th>Patients whose needs can be met through normal ward care in an acute hospital</th>
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<tr>
<td>Level 1</td>
<td>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</td>
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<tr>
<td>Level 2</td>
<td>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</td>
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<tr>
<td>Level 3</td>
<td>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</td>
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(DH, 2000)

2.2 **Rehabilitating patients**: are defined as those who are recovering from critical illness and require transfer to areas providing lower levels of care i.e. levels 0, 1 or 2. For more detailed information about levels of care please refer to the Intensive Care Society Levels of Critical Care for Adult Patients (2009).

2.3 **Capacity Transfer**: (previously referred to as a non-clinical transfer): A transfer carried out for the purposes of receiving treatment or investigation normally provided at the referring hospital but not available at the time. Although such transfers may be carried out due to lack of capacity, they may nevertheless remain clinically necessary and potentially time-critical.

2.3.1.1 **Clinical transfer**: refers to patient transfers for specialist treatment/investigation not provided at the referring (parent) hospital e.g. for more specialised critical care or discrete surgical, radiological or medical intervention e.g. angiography, TIPPS, neurosurgery, general surgery, vascular surgery etc.
2.4 **Primary transfer**: Movement of a patient from the scene of injury or illness to the nearest receiving hospital.

2.5 **Secondary transfer**: Movement of a patient from any hospital facility (e.g. emergency department/ward/critical care/theatre) to another centre.

2.6 **Extended primary transfer**: Movement of a patient from the scene of injury or illness to a specialist centre, by-passing the nearest hospital to reach a centre more appropriate to the patient’s needs.

2.7 **Repatriation**: Movement of a patient being transferred back to the referring (parent) hospital or to a hospital nearer to the patient’s home.

3.0 **Transfer Definitions**

3.1 **Intra–Hospital Transfers**: Are described as the movement of a patient between areas/departments within the same Trust and happen for a variety of reasons:

3.1.1 Movement between emergency department, general wards and critical care units in response to a change in the level of care required by the patient.

3.1.2 Movement from critical care units to diagnostic areas (e.g. for CT/MRI scanning) and other treatment areas (e.g. operating theatres, endoscopy suites & interventional radiography).

3.2 **Inter-Hospital Transfers**: Are described as the transfer of patients between hospitals. The reasons for inter-hospital transfers include:

3.2.1 The need for specialist treatment or interventions e.g. major trauma, neurosurgery, cardio thoracic surgery, burns management (clinical transfer) or ECMO.

3.2.2 Lack of critical care capacity (capacity transfer).

3.2.3 Repatriation of a patient back to the referring (parent) hospital or a hospital closer to the patient’s home.

3.2.4. It is not considered acceptable or safe practice to transfer critically ill/high risk patients between trusts hospital sites, in order to maintain operational function at the transferring site.

4.0 **The Decision to Transfer**

4.1 The decision to transfer any critically ill patient will always be a balance of associated benefits and risk. The decision must always be made by a consultant in intensive care medicine or anaesthesia at the referring (parent) hospital, in discussion with consultant colleagues from the receiving hospital. The final decision to accept a patient lies with the critical care consultant in the receiving hospital. Assessment of risks associated with any inter-hospital transfer must always take account of the
benefits of transfer and the timing of transfer will reflect factors such as the need for time-critical interventions.

4.2 Transfers should not take place until:
- The patient’s condition is deemed adequately stable for transfer
- Transfer equipment is checked and in working order
- Appropriately skilled staff are available
- The receiving hospital area has identified they are ready to receive the patient
- All lines, tubes, leads etc. are appropriately secured

4.3 When considering a capacity transfer, all internal critical care escalation options should be exhausted and transferring the patient to another hospital should only occur as a last resort. Recommended strategies would include:

4.3.1 Postoperative cases being managed in theatre recovery area, dependent on local policies and staffing arrangements.

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

4.3.3 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. For example non-invasive ventilation may be carried out on designated wards, and patients with tracheostomies may well be managed safely on ENT wards.

4.3.4 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.

4.4 Where patients require transferring to another hospital for specialist treatment e.g. neurosurgery, arrangements should be made to move the patient in a safe timely manner acknowledging that unnecessary delays in transfer can adversely affect outcomes for the patient.

4.5 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.

4.6 Where patients need immediate transfer to a trauma centre the benefits of being managed by a specialist team may outweigh the value of delaying the transfer to stabilise a patient which could be continued on route.

5.0 Organising a Critical Care Transfer

5.1 Consultation Process

5.1.1 If a critical care transfer is required the Capacity Management System (CMS) should be utilised to ascertain local bed availability within the Network.

http://www.connectingforhealth.nhs.uk/systemsandservices/pathways/cms
5.1.2 Any intra- or inter-hospital transfer to a critical care unit must always involve the Critical Care Consultant and Critical Care Nursing Shift Leader.

5.1.3 Once a bed has been identified, 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.

5.1.4 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.

5.1.5 A consultant or nominated other will be responsible for organising the transfer and identifying appropriate medical staff.

5.1.6 Contact must be made with the receiving hospital consultant to discuss clinical details and take advice on specialist management prior to, and during transfer.

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

5.1.8 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, and the transfer must be accepted by the receiving hospital using the same principles given above.

5.1.9 If a capacity (non-clinical) transfer is required, it is recommended that such transfers take place within the Network if at all possible and such transfers are recorded as a critical incident (grade 3).

6.0 Selection of Transport Mode

6.1 For the majority of inter-hospital transfers, road ambulance is the most appropriate mode of transport. Road transport has the advantage of rapid mobilisation time, less limitations by adverse weather conditions, less potential for physiological disturbances, easy patient monitoring and 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, estimated time the patient will be ready for transfer and whether a ‘blue light’ will be required. Please refer to the Ambulance Priority Algorithm (Appendix 1).

6.2 Helicopter or fixed wing transfers should only be considered for longer journeys and when road access is difficult. Vibration, altitude and acceleration/deceleration forces significantly adversely affect patient haemodynamics and monitoring. 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. Only staff with additional specialist training should undertake air transfers, whether fixed or
rotary wing. Ambulance Control may on occasion advise that air transfer is preferable to road.

7.0 **Accompanying Personnel**

7.1 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. 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. More detail can be found in Appendix 2.

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

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

7.3.1 Patient’s current clinical condition (assessed using a physiological track and trigger score and other physiological parameters relevant to the patient’s condition).

7.3.2 Specific risks related to the patient’s condition.

7.3.3 Risks related to movement/transfer.

7.3.4 Likelihood of deterioration during transfer.

7.3.5 Potential for requiring additional monitoring/intervention.

7.3.6 Duration and mode of transfer.

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

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

7.5 All personnel involved in transferring patients should be appropriately trained in the transfer of critically ill patients and assessed as competent.

7.6 Staff escorting critically ill patients should be appropriately insured.

8.0 **Preparing for Transfer**

8.1 Prior to 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.
8.2 Prior to departure, escorting staff who have not been involved in direct care of the patient should 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.

8.3 The airway should be assessed, 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.

Significant swelling will occur in major burns 6 -12 hours after injury, therefore it is recommended that endotracheal tubes should not be cut.

8.4 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 15 minutes prior to transfer, which allows for blood gas analysis before departure. However, clinical emergency to transfer the patient may limit this assessment 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.

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

8.6 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.

8.7 Where a pneumothorax is present or suspected, chest drains should be inserted prior to departure.

8.8 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.

8.9 Hypovolaemic 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.

8.10 A naso*/oro-gastric tubes 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

8.11 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.

8.12 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 spinal board is to be used, ensure that pressure area protection is provided in the form of a specialised pressure blanket.

8.13 A pre-departure checklist is recommended for use by escorting staff to help ensure that all preparations have been completed (Example checklist Appendix 2).

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

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

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

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

9.0 Management During Transfer

9.1 The Ambulance

9.1.1 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.

9.1.2 Patients should be secured to the transport trolley by means of appropriate restraint.

9.1.3 Pressure areas should be appropriately protected and warming/insulating blankets should be used to keep the patient warm unless clinically contraindicated.

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

9.1.5 All equipment must be securely stowed. 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.

9.1.6 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 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 ambulance. The vehicle should be stopped appropriately in a safe place before administering treatment.

10.0 **Equipment**

10.1 All equipment, drugs, etc. should be checked prior to transfer; it is especially important that the escorting personnel are familiar with the operation of all equipment used in the transportation process.

10.1.2 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.

10.1.3 It is necessary to have available a yankauer and endotracheal catheters in a range of sizes.

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

10.1.5 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 also have a back-up battery pack. All equipment should be checked for compatibility with the ambulance power supply.

10.1.6 Portable ventilators must have disconnection & high pressure alarms and the facility for 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.

10.1.7 Infusion pumps with the facility to run on battery, sufficient in number to allow delivery of essential drugs and fluids. This equipment should be fully charged prior to departure and additional syringes of drugs 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.

10.1.8 Daily checks of transfer equipment should be undertaken and documented to ensure that equipment is fully functional and ready for use at all times. 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.

11.0 **Monitoring During Transfer**
11.1 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 of monitoring are:

- Continuous cardiac rhythm (ECG) monitoring
- Non-invasive blood pressure*
- Oxygen saturation (SaO$_2$)
- End tidal carbon dioxide (in ventilated patients)
- Temperature
- Respiratory rate

11.2 The recording of patient physiological parameters, treatments and clinical events during transportation must be recorded on the Intensive Care Bed Information (ICBIS) transfer form.

11.3 *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.

11.4 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.

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

12.0 Documentation

12.1 An ICBIS form should be used for every level 2 or 3 inter-hospital critical care transfer. This form enables ICBIS and the networks to monitor the reasons for transfer, responses to treatments, physiological data and any untoward events. The form has 3 copies:

- White copy to be filed in patient’s notes at the recipient hospital
- Yellow and green copies to be returned to ICBIS by the transferring personnel

**NB:** it is the responsibility of the transferring clinician that all fields and required information are completed on the form.

12.2 The recording of physiological parameters, treatments and clinical events during transportation should be recorded on the ICBIS form along with the names of transferring party and receiving medical staff.

12.3 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.

12.4 Handover should 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 is recommended. [www.institute.nhs.uk/quality_and_service_improvement_tools]

12.5 It is recognised that medical records and investigations will need to travel with the patient. Careful consideration should be given as to how they are transported.

12.5.1 Medical notes and loose documentation not required during travel should ideally be placed in a sealed and clearly marked envelope or bag.

12.5.2 A member of the transferring team should be identified to take responsibility for the transfer of the documentation.

12.5.3 Local information governance policies should be in place to inform this process and outline procedures should any documentation go missing.

13.0 Untoward Incidents

13.1 Any untoward incidents that occur during transfer of patients should be reported by the transferring clinician on the ICBIS form and also on return to the referring hospital, using the trust/critical care adverse incident system. Information should be passed on to the Network via clinical governance reporting mechanisms. Occasionally an adverse incident associated with a transfer will manifest itself after the patient has arrived on the receiving unit; this should be recorded by the receiving clinician and reported to the Critical Care Network.

13.2 All critical incidents pertaining to critical care transfers should be discussed at the Trust Critical Care Delivery Group and the Critical Care Networks’ Transfer Group with lessons learned shared to enhance best practice. Any remedial action required should be recorded in an accompanying action plan.

14.0 Auditing of Inter-Hospital Transfers

14.1 All transfer forms should be completed and returned to ICBIS for audit purposes. The audit aims to measure the quality of inter-hospital transfers of critically ill patients through retrospective audit. All sections of the ICBIS transfer form are used in the overall assessment of quality and safety. The assessment is made of the quality of the record and evidence of quality of clinical management derived from recorded information.

Following assessment one of five grades are assigned:

- A = Ideal transfer
- B = Minor problems
- C = Significant problems
- D = Unacceptable level of safety
- U = Uninterpretable

Please refer to Appendix 4 for more detailed information.
References


www.institute.nhs.uk/quality_and_service_improvement_tools

www.dft.gov.uk/vca/additional/files/vehicle-type-approval/ambulances/vca058.pdf
Appendix 1.

NORTH WEST AMBULANCE SERVICE NHS TRUST
GREATER MANCHESTER AREA INTERFACILITY TRANSFER REQUESTS

PATIENT REQUIRES INTER FACILITY TRANSFER

THE FOLLOWING CATEGORIES ARE SUITABLE FOR PRIORITY 1 TRANSFER
- SURGICAL TEAM ON STANDBY
- PCI
- CVA FOR THROMOLYSIS
- IABP TRANSFERS
- OBSTETRIC EMERGENCIES REQUIRING IMMEDIATE OPERATIVE INTERVENTION
- FROM RESUS IF NO INCOMING CAPACITY
- 8 Minute Response

ASSESS THE PATIENT FOR TRANSFER IN ACCORDANCE WITH THE INTERFACILITY TRANSFER GUIDE
ALL PATIENTS MUST BE PREPARED AND READY TO DEPART IMMEDIATELY ON ARRIVAL OF THE CONVEYING VEHICLE

UNSCHEDULED TRANSFER (PARAMEDIC EMERGENCY SERVICE)

PRIORITY 1 TRANSFER
- 8 Minute Response

PRIORITY 2 TRANSFER
- < 1 Hour response

PRIORITY 3A TRANSFER
- < 4 Hour response EMT2

PRIORITY 3B TRANSFER
- < 4 Hour response EMT1

PRIORITY 4 TRANSFER
- Planned Care Booking

PREPARE PATIENT FOR TRANSFER BEFORE CALLING FOR THE AMBULANCE

0161-866 0611

0161-866 0621

0161-866 0621

0161-866 0621

There will be occasions when, in order to facilitate an unplanned admission into a critical care facility for specialist intervention, it is necessary to move a patient more suitable for transfer out of the facility within a short timeframe. Please request P2 transfer for these patients.
# Appendix 2 – Critical Care Transfer Competencies – Intensive Care Society (2011)

<table>
<thead>
<tr>
<th><strong>2a Core competencies required of all staff (levels required appropriate to role)</strong></th>
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| **Knowledge** | Knowledge of local / Network / National Transfer guidelines  
Understands the principles of safe transfer of patients  
Knowledge of ambulance / transfer environment and associated health and safety issues / relevant legislation  
Knowledge of Advanced Life Support guidelines |
| **Skills** | Use of oxygen, respiratory therapies and portable ventilators  
Use of basic monitoring (ECG,NIBP, pulse oximetry)  
Use of transport equipment  
Competent to carry out advanced life support |
| **Attitudes and Behaviour** | Evidence of good team working  
Evidence that plans for and prevents problems during transfer  
Understands the benefit of pre-transfer check lists and uses these in clinical practice  
Understands the need for good communication with referring and receiving institutions & teams and evidence of this in practice  
Completes all required documentation including clinical notes/observation charts/audit forms  
Seeks support from senior/more experienced colleagues appropriately |
2b Additional competencies which may be required by medical staff to undertake level 2/3 transfer, depending on the clinical condition of the patient and the outcome of the pre-transfer risk assessment

Note: not all competencies will be required in every case. In many cases the parent team should have the competencies required.

| Knowledge | Knowledge of physiology of critical illness  
Knowledge of pharmacology of drugs including sedatives / muscle relaxants / inotropes and vasopressors  
Knowledge of the physiological effects of the transfer process and acceleration / deceleration forces in the critically ill |
|---|---|
| Skills | Use of a structured approach for assessment of critically ill patient prior to transfer  
Ability to interpret blood gases, and other clinically relevant investigations  
Ability to identify potential needs of patient prior to, and during transfer  
Ability to respond to changes in the patient’s condition during transfer  
including ability to undertake the following procedures if required  
• Basic / advanced respiratory support  
• Bag mask ventilation  
• Intubation  
• Emergency needle decompression / chest drainage  
• Resuscitation/optimisation of haemodynamic status including appropriate use of fluids / inotropes / vasopressors  
• Management of dysrhythmias including cardiac arrest  
• Ability to care for arterial lines / central lines and other indwelling catheters and to use/access appropriately |
| Attitudes and Behaviours | Ability to assume leadership role during transfer  
Ability to provide clear and precise structured handover to receiving unit |
### 2c. Additional competencies required for second attendant accompanying level 2/3 patient

| Knowledge | Knowledge of the physiology of critical illness  
Knowledge of the administration of drugs likely to be required during transfer (includes sedatives / muscle relaxants / inotropes and vasopressors)  
Knowledge of the potential problems associated with movement acceleration / deceleration forces |
|-----------|--------------------------------------------------------------------------------------------------|
| Skills    | Ability to carry out appropriate nursing observations and nursing care in the transport environment.  
Ability to assist with:  
- Airway support - including intubation  
- Respiratory support - including oxygen therapy devices  
- Basic ventilator operation  
- Cardiovascular resuscitation  
- Fluid management including the preparation of infusions  
- The use of sedative drugs, and the use of syringe pumps |
| Attitudes and Behaviours | Ability to provide clear and precise structured handover to receiving unit |
### Appendix 3 – Examples of Transfer Checklists

#### 3a Pre-transfer Checklist 1. Is patient stable for transport?

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<thead>
<tr>
<th><strong>Airway</strong></th>
<th><strong>Trauma</strong></th>
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<tbody>
<tr>
<td>✗ Airway safe or secured by intubation</td>
<td>✗ Cervical spine protected</td>
</tr>
<tr>
<td>✗ Tracheal tube position confirmed on chest X-ray</td>
<td>✗ Pneumothoraces drained</td>
</tr>
<tr>
<td>Ventilation</td>
<td>✗ Intra-thoracic &amp; intra-abdominal bleeding controlled</td>
</tr>
<tr>
<td>✗ Adequate spontaneous respiration or ventilation established on transport ventilator</td>
<td>✗ Intra-abdominal injuries adequately investigated and appropriately managed</td>
</tr>
<tr>
<td>✗ Adequate gas exchange confirmed by arterial blood gas</td>
<td>✗ Long bone / pelvic fractures stabilised</td>
</tr>
<tr>
<td>✗ Sedated and paralysed as appropriate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Circulation</strong></th>
<th><strong>Metabolic</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>✗ Heart rate, BP optimised</td>
<td>✗ Blood glucose &gt; 4 mmol/l</td>
</tr>
<tr>
<td>✗ Tissue &amp; organ perfusion adequate</td>
<td>✗ Potassium &lt; 6 mmol/l</td>
</tr>
<tr>
<td>✗ Any obvious blood loss controlled</td>
<td>✗ Ionised Calcium &gt; 1 mmol/l</td>
</tr>
<tr>
<td>✗ Circulating blood volume restored</td>
<td>✗ Acid – base balance acceptable</td>
</tr>
<tr>
<td>✗ Haemoglobin adequate</td>
<td>✗ Temperature maintained</td>
</tr>
<tr>
<td>✗ Minimum of two routes of venous access</td>
<td></td>
</tr>
<tr>
<td>✗ Arterial line and central venous access if appropriate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Neurology</strong></th>
<th><strong>Monitoring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>✗ Seizures controlled, metabolic causes excluded</td>
<td>✗ ECG</td>
</tr>
<tr>
<td>✗ Raised intracranial pressure appropriately managed</td>
<td>✗ Blood pressure</td>
</tr>
<tr>
<td></td>
<td>✗ Oxygen saturation</td>
</tr>
<tr>
<td></td>
<td>✗ End tidal carbon dioxide</td>
</tr>
<tr>
<td></td>
<td>✗ Temperature</td>
</tr>
</tbody>
</table>
### 3b Pre transfer Check list 2. Are you ready for departure?

<table>
<thead>
<tr>
<th><strong>Patient</strong></th>
<th><strong>Staff</strong></th>
<th><strong>Equipment</strong></th>
<th><strong>Organisation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Stable on transport trolley</td>
<td>✓ Transfer Risk assessment completed</td>
<td>✓ Appropriately equipped ambulance</td>
<td>✓ Case notes, X-rays, results, blood collected</td>
</tr>
<tr>
<td>✓ Appropriately monitored</td>
<td>✓ Staff adequately trained and experienced</td>
<td>✓ Appropriate equipment and drugs</td>
<td>✓ Transfer documentation prepared</td>
</tr>
<tr>
<td>✓ All infusions running and lines adequately secured and labelled</td>
<td>✓ Received appropriate handover</td>
<td>✓ Pre-drawn up medication syringes appropriately labelled and capped</td>
<td>✓ Location of bed and receiving doctor known</td>
</tr>
<tr>
<td>✓ Adequately sedated and paralysed</td>
<td>✓ Adequately clothed and insured</td>
<td>✓ Batteries checked (spare batteries available)</td>
<td>✓ Receiving unit advised of departure time and estimated time of arrival</td>
</tr>
<tr>
<td>✓ Adequately secured to trolley</td>
<td>✓ Adequately wrapped to prevent heat loss</td>
<td>✓ Sufficient oxygen supplies for anticipated journey</td>
<td>✓ Telephone numbers of referring and receiving units available</td>
</tr>
<tr>
<td>✓ Adequately secured to trolley</td>
<td>✓ Adequately wrapped to prevent heat loss</td>
<td>✓ Portable phone charged and available</td>
<td>✓ Relatives informed</td>
</tr>
<tr>
<td>✓ Adequately secured to trolley</td>
<td>✓ Adequately wrapped to prevent heat loss</td>
<td>✓ Money for emergencies</td>
<td>✓ Return travel arrangements in place</td>
</tr>
<tr>
<td>✓ Adequately secured to trolley</td>
<td>✓ Adequately wrapped to prevent heat loss</td>
<td>✓ Ventilator transferred to ambulance oxygen supply</td>
<td>✓ Ambulance crew briefed</td>
</tr>
<tr>
<td>✓ Adequately secured to trolley</td>
<td>✓ Adequately wrapped to prevent heat loss</td>
<td>✓ All equipment safely mounted or stowed</td>
<td>✓ Police escort arranged if appropriate</td>
</tr>
<tr>
<td>✓ Adequately secured to trolley</td>
<td>✓ Adequately wrapped to prevent heat loss</td>
<td>✓ Staff seated and wearing seat belts</td>
<td>✓ Departure Patient trolley secured</td>
</tr>
</tbody>
</table>

- 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
### 3c Transport documentation
The following information should be recorded on transport documentation

#### Transfer details
- Patient’s name, address, date of birth
- Next of kin, what information they have been given and by whom
- Referring hospital, ward/unit, and contact telephone number
- Name of referring doctor and contact telephone number
- Receiving hospital, ward/unit and contact telephone number
- Name of receiving doctor and contact telephone number
- Names and status of the escorting personnel

#### Medical summary
- Primary reason for admission to the referring unit
- History and past history
- Dates of operations and procedures
- Number of days on intensive care
- Intubation history, ventilatory support & blood gases
- Cardiovascular status including inotrope & vasopressor requirements
- Other medication and fluids
- Type of lines inserted and dates of insertion
- Recent results & MRSA status

#### Nursing summary
- Nursing care required with reference to the following
- Respiratory, cardiovascular, communication methods, nutrition, pain and sedation, sleep patterns, elimination, skin condition, hygiene, and social needs

#### Patient status during transfer
- Vital signs including ECG, blood pressure, SaO2, EtCo2, temperature, respiratory rate, peak inspiratory pressure, PEEP
- Drugs given during transfer including infusions
- Fluids given during transfer
- Summary of patient’s condition during transfer signed by escorting doctor

#### Audit data including
- Reason for the transfer
- Whether the transfer was within or outside the local network
- Prioritisation level for the transfer
- Time taken for transfer from time of ambulance request to completion
- Adverse events/critical incident

Appendix 4

North West Critical Care Networks Standards for Transfer

All critical care transfers across the North West regions will be measured against the following standards:

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**Every transfer should be recorded on an ICBIS Transfer form and the form processed appropriately**

There is a requirement for the clinical staff undertaking a transfer to document clinical parameters during the process, record a diagnosis and record the relevant medical staff at both despatching and receiving hospitals

The clinical parameters that must be recorded are:
- invasive arterial blood pressure
- ECG
- End tidal CO₂ monitoring in ventilated patients
- Pulse-oximetry
- Heart rate
- Respiratory rate
- Temperature

All medication administered during the transfer requires documentation

All clinical events during the transfer require documentation

*The minimum standard currently required through the ICBIS is Grade B

**ICBIS Transfer Grading**

- A – ideal transfer
- B – minor problems *
- C – significant problems
- D – unacceptable level of safety
- U – uninterpretable
## Description of Grades used by Intensive Care Bed Information Service (ICBIS)

### Grade A

This is an ideal transfer. The transfer form should have all of the following features:

- All sections of the transfer form are complete and legible
- The clinical information must include the diagnosis
- The clinical information should demonstrate that the transfer was reasonable and that the patient was stable prior to undertaking the transfer
- There is no evidence of clinical deterioration during transfer or at arrival at the recipient unit
- The staff who organised and undertook the transfer were of appropriate status
- Appropriate patient and equipment monitoring should have been used during the transfer
- The record should demonstrate that the patient was correctly managed throughout the transfer
- Drugs and fluids administered during transfer should have been clearly documented. Correct dosages and volumes should have been administered by optimal routes of administration
- Observations of the patient and equipment should have been fully recorded and are acceptable for the clinical circumstances

### Grade B

There have been minor problems with the transfer. A transfer form will be assigned grade B if any of the following are present:

- Some sections of transfer form are incomplete. The clinical information must include the diagnosis. Overall the documentation is acceptable.
- The monitoring employed during the transfer was not optimal. However there were no serious omissions for the clinical scenario.
- The record demonstrates that there were minor problems with management during the transfer. However this did not lead to any deterioration in the patient’s condition.
- The documentation of drugs and/or fluids administered during transfer is not complete. However the omissions in documentation are not serious for the clinical circumstances. Where documented, correct dosages and volumes of drugs and fluids should have been administered and appropriate routes of administration used
- The documentation of observations recorded of either the patient and/or the equipment during the transfer is not complete. However the omissions in documentation are not serious for the clinical circumstances
**Grade C**

There have been significant problems with the transfer. A transfer form will be assigned grade C if any of the following are present:

- Clinical information is inadequate. The clinical information will be deemed to be inadequate if the clinical diagnosis has been omitted
- The staff organising and undertaking the transfer are not of appropriate status
- Some aspect or aspects of the management or monitoring of the patient during transfer has or have been unsatisfactory
- The patient has been unstable during transfer, but responded rapidly to clinical intervention. The clinical consequences were not serious
- There has been a minor equipment problem during the transfer, but this was not serious and did not cause ill effects to the patient
- The documentation of drugs and/or fluids administered during transfer is not complete. The omissions in documentation were significant, but not serious for the clinical circumstances
- Observations of the patient and/or equipment have not been adequately documented. The omissions in documentation were significant for the clinical circumstances

**Grade D**

There have been serious problems with the conduct of the transfer. A transfer form will be assigned grade D if any of the following are present:

- There is evidence to confirm that the transfer was inappropriate
- There is evidence to confirm that the patient was not stable at the point the transfer was commenced
- Inappropriate management or monitoring is demonstrated during the transfer which had the potential to seriously affect the patient’s outcome or did affect the patient’s outcome
- The patient was unstable during transfer. Management failed to correct the instability in the patient’s condition to a point where the patient may have suffered or did suffer serious adverse effects
- There has been a serious equipment problem during the transfer, which had either the potential to cause harm to the patient or did cause harm to the patient
- Drugs or fluids were incorrectly administered. Errors in administration may include choice of drug or fluid administered; incorrect dosages or volumes; inappropriate routes of administration
- Observations of the patient and/or equipment have not been adequately documented. The omissions in documentation were serious for the clinical circumstances

**Grade U**

Grade U is assigned if any of the following occur:

- The transfer form is unavailable for assessment after attempts have been made to retrieve alternative copies.
- The transfer form is illegible to the point at which assessment of the conduct of the transfer is not possible. Illegible copies may arise because of poor handwriting or poor quality carbonised copies.
- The transfer form is incomplete to a point to which assessment of the conduct of the transfer cannot be undertaken.