Greater Manchester Critical Care Network

NHS

Transfer of the Critically Ill Adult within the Greater Manchester Critical Care Network

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Greater Manchester Critical Care Network

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Contents

1. Overview

This document summarises best practice with regards to transfer of critically ill adults within the Greater Manchester Critical Care Network (GM CCN).

If you have any concerns about the content of this document please contact the GM CCN.

2. Scope

This guideline is for use by all staff involved in the transfer of critically ill adults. This can include medical, nursing, and allied health professional staff in critical care, the emergency department, anaesthesia and theatres within the Greater Manchester Critical Care Network.

Critically ill patients are those requiring a level of care that is greater than that normally provided on a standard hospital ward, and usually requiring level two or three care as defined by the Intensive Care Society's Consensus Statement on Levels of Adult Critical Care (2021). These patients are usually in the critical care unit, emergency department or theatres. Some hospitals will have additional enhanced care areas, such as medical or surgical high care.

3. Background

Critically ill adults frequently require transfer both within and outside the hospital. The need for inter-hospital transfers may increase with further centralisation of services. Movement of such vulnerable patients must be undertaken with great care to avoid preventable harm. High quality evidence is limited, but adverse incidents appear common during transfer. Incidents are most often due to equipment issues and staff capability, and many may be preventable. National guidance should be followed to minimise harm.

Two important national guidelines have been published in recent years and form the basis of this guideline. They are the joint Faculty of Intensive Care Medicine and Intensive Care Society 'Guidance on: The Transfer of the Critically Ill Adult' (2019) and the Association of Anaesthetists and the Neuro-Anaesthesia and Critical Care Society 'Guidelines for Safe Transfer of the Brain-Injured Patient: Trauma and Stroke' (2019).

4. What is new in this version?

This document replaces and updates 'Standards & Guidance: Intra and Inter-Hospital Critical Care Transfers (Adult Patients)' (2016, updated July 2020) North West Critical Care Networks.

5. Guideline

5.1 Transfer organisation

The Greater Manchester Critical Care Network has a lead for transfer, who chairs the Network Transfer Group. Their responsibilities include the development and oversight of referral pathways, transfer protocols and associated quality assurance programmes.

All acute hospitals should have a lead consultant for critical care transfers with responsibility for guidelines, staff training, competencies and equipment provision. This individual should report to the trust critical care delivery group / governance meeting and the Network Transfer Group.

5.2 Indications for transfer

Transfer of critically ill patients occurs for one of the following reasons:

Clinical transfer

- For investigations, assessment, or treatment. These may be within (**intra-hospital**, e.g. for a CT scan or to theatre) or outside (**inter-hospital**, e.g. specialist assessment and treatment) the patient's current hospital. **Transfer for immediately lifesaving interventions must not be delayed due to lack of availability of a critical care bed**.

- Transfers to the outdoors are considered clinical transfers, as a core component of humanisation of critical care. They should be carried out as detailed in section 5.8.

Repatriation

- To return patients to their local critical care unit. To ensure specialist capacity, repatriation should occur within 48 hours of the patient being identified as suitable for repatriation.

Mutual aid or surge transfer

- The treating critical care unit is under **extreme** clinical pressure, beyond its usual capacity, and the patient is likely to benefit from moving to a less busy unit.

Capacity transfer

- This is defined as inter-hospital transfer of patients from one critical care unit to another in order to increase critical care capacity to facilitate emergency or urgent clinical care for another patient.

Mutual aid and capacity transfers are associated with significant risks but may represent the 'least bad option' (see section 5.9).

5.3 Responsibility for transfer

- The decision to undertake inter-hospital transfer of a critically ill patient must be made by appropriate consultants in both referring and receiving hospitals, who take joint responsibility for the transfer. The nurse in charge at both referring and receiving hospitals must also authorise all transfers.

- The attending consultant remains primarily responsible for the patient in their care and may decide not to transfer the patient.

- The final decision to accept the patient lies with the consultant in intensive care medicine at the receiving hospital.

- The patient should be handed over to the receiving team as soon as possible after arrival in the receiving hospital. The transferring team should not be asked to provide ongoing care in the receiving hospital. The patient remains the responsibility of the transferring team until they have been formally handed over to the team at the receiving hospital post-transfer.

- If another shared-care (parent) team is involved in the care of the patient, that team must also be involved in the organisation of the transfer, and the equivalent team at the receiving hospital must accept the patient prior to transfer.

5.4 Risk assessment

Prior to any transfer of a critically ill patient, a risk assessment must be undertaken and documented by an appropriately skilled senior clinician. ***For inter-hospital transfers, the risk assessment should be undertaken by a consultant.*** The purpose of the risk assessment is to quantify the anticipated risk, formalise the process of weighing the relative risks and benefits of transfer, and determine the capabilities required of the accompanying staff.

A clinical judgment must be made as to whether the transfer is low, medium, or high risk.

The following should be considered:

- **Current clinical condition.** What is the patient's degree of physiological derangement/NEWS score? What organ support do they require?

- **Specific risks due to the patient's clinical history.** Specifically skilled practitioners may be required, e.g. to transfer a patient with acute brain injury.

- **Likelihood of deterioration in transfer.** What is the patient's clinical trajectory?

- **Potential for requiring additional monitoring and or intervention.** Consider the worst-case scenario. Could the airway become compromised? In general, it is preferable to institute treatment and monitoring before, rather than during, transfer.

- **Transfer destination.** Although the same principles apply to inter and intra-hospital transfers, one key difference is the potential for rapid attendance of additional skilled staff, including those with advanced airway skills. This is less reliable out of hours and at remote sites within the hospital.

- **Risks related to movement/transfer.** Patients with haemodynamic instability often tolerate acceleration and deceleration poorly. Some injuries, e.g. unstable spinal injury, may require specific equipment, e.g. scoop stretcher and vacuum mattress.

- **Mode of transport, likely duration of transfer and any specific transport related issues.** In Greater Manchester, non-road transfers are carried out by specialist teams.

Risk category	Risk assessment findings	Staff required
Low risk	NEWS 3-4 Supplemental oxygen (FIO_2 <0.4) or intravenous infusion pumps No vasopressors or stable low dose vasopressors GCS 14-15 or stable lower GCS **Low risk of deterioration in transfer**	Nurse or clinical practitioner with critical care capabilities
Medium risk	NEWS 5-6 Non-invasive ventilation (CPAP/BiPAP) Moderate metabolic derangement Low dose vasopressors GCS 9-13 (consider intubation) **Low risk of deterioration in transfer**	Nurse or clinical practitioner with critical care capabilities PLUS Doctor or advanced practitioner with critical care capabilities
High risk	NEWS 7 or more Intubated and ventilated Airway compromise Significant cardiovascular instability or high dose vasopressor requirement Base deficit >10 mmol/L GCS 8 or less **Significant risk of deterioration in transfer**	Nurse or clinical practitioner with critical care capabilities PLUS Doctor or advanced practitioner with advanced critical care capabilities

5.5 Staff capability for transfer

All staff transferring critically ill patients as part of their role in the Greater Manchester Critical Care Network can access online transfer training (SCITT, https://nwscittprogramme.nhs.uk/login). All staff **must** have the opportunity to undertake transfer in a supernumerary capacity if required. Staff without appropriate capabilities must not undertake transfer of critically ill patients.

5.5.1 Nursing staff

There is variation in practice, it is important that the principles of SCITT, individual competence, in person training (in house or critical care course) are used within a locally agreed framework.

Depending on the clinical circumstances, a second or more experienced nurse may be required to safely transfer the patient. No nurse should undertake a transfer outside their capabilities and if there is any doubt the advice of the critical care shift leader should be sought.

5.5.2 Advanced critical care practitioners

The Faculty of Intensive Care Medicine (FICM) curriculum for training advanced critical care practitioners (ACCPs) advocates utilising ACCP skills and experience for the safe transfer of critically ill patients. Assessment of capabilities to carry out this skill is agreed at a local level.

5.5.3 Medical staff

The curricula of the Faculty of Intensive Care Medicine (FICM) and Royal College of Anaesthetists (RCoA) lay out the transfer capabilities required for doctors in training in these specialities. By the end of stage one training (ST4 for FICM, CT3 for RCoA), trainees are expected to be able to undertake intra and inter-hospital transfer of stable but critically ill patients in straightforward circumstances.

Doctors not in a formal training programme must evidence equivalent capabilities.

The complexity and risks associated with transfer vary significantly. It is the responsibility of the clinician undertaking the risk assessment for the transfer, who must be a consultant for an inter-hospital transfer, to determine whether the accompanying team have the appropriate capabilities to safely undertake the transfer.

Doctors are encouraged to keep a logbook of transfers.

5.5.4 Ambulance staff

The role of ambulance staff during transfer of a critically ill patient is to ensure the safety of the vehicle and its occupants. The accompanying clinical team are responsible for the medical and nursing care of the patient.

5.6 Inter hospital transfer

5.6.1 Preparation for transfer

The Greater Manchester Critical Care Network (GM CCN) Inter-Hospital Transfer Checklist should be used (appendix 1).

5.6.1.1 Preparing the patient

As described in Section 5.4, every patient must have a risk assessment prior to transfer. For inter-hospital transfer this risk assessment should be undertaken by a consultant.

The patient must be accepted at the receiving hospital, with named accepting critical care consultant and shared-care consultant, if appropriate.

Meticulous resuscitation and stabilisation of the patient prior to transfer is key to avoiding physiological disturbance associated with movement and reducing the risk of deterioration during the journey.

Occasionally, stability can only be achieved by interventions which require transfer of the patient. In these difficult and rare circumstances, the potential benefits of transfer may outweigh the increased risks. This should be discussed with the responsible consultant and a plan made for deterioration in transfer. If the patient has capacity to make a decision about transfer, the risks and benefits should be discussed with them so they can decide whether to consent to transfer. If the patient does not have capacity a best interests decision should be made, involving the patient's relative or other advocate when possible.

If the transferring team have not been involved in the prior care of the patient, they must take time to familiarise themselves with the history, investigations, and treatment to date and introduce themselves to the patient/relatives when possible and appropriate. A full clinical assessment including physical examination should be performed and documented.

Minimum standards of patient monitoring are:

- Continuous observation
- Cardiac rhythm (ECG) monitoring
- Blood pressure
- Oxygen saturation
- End tidal carbon dioxide in intubated patients
- Temperature
- GCS and pupillary size and response to light in acute brain injury

The airway should be assessed and if necessary secured and protected with an appropriately positioned endotracheal tube. If there is uncertainty regarding the necessity of intubation, advice should be sought from a senior clinician. Intubation is likely to be more difficult in transfer than in the hospital. Consideration should be given to the specific circumstances, e.g. acute brain injury and burns (see section 5.11). Intubated patients should be sedated and receive analgesia. Consideration should be given to use of neuromuscular blockade.

Inspired oxygen concentration, flow rate and oxygen supply should be monitored in all patients receiving supplemental oxygen. Ventilator settings and airway pressures should be monitored in those receiving ventilatory support. Following stabilisation on the transfer ventilator (ideally for at least 15 minutes) an arterial blood gas should be taken. A heat and moisture exchanging filter should be used.

Clinically significant pneumothoraces should be controlled with a drain prior to transfer. Underwater seal drains can be used provided they are kept upright and below the level of the patient. Chest drains must not be clamped for transfer, other than for a short duration, e.g. while moving a patient from bed to trolley.

Secure venous access is mandatory and a minimum of two intravenous cannula are recommended. At least one of these should be wide bore. Central venous catheters may be useful for administration of vasopressors, however large bore peripheral access and peripheral vasopressors may be more appropriate, particularly in a time critical emergency.

A suitably secured indwelling arterial cannula is ideal for blood pressure monitoring. Non-invasive blood pressure monitoring is sensitive to movement artefact and unreliable in a moving vehicle. It is also a significant drain on monitor battery supply.

Hypovolaemic patients tolerate movement poorly. Continued sources of bleeding should be identified and, if possible, controlled prior to transfer. In the absence of contraindications (e.g. penetrating trauma, ruptured aortic aneurysm), efforts should be made to restore circulating volume to near normal prior to transport. If vasoactive drugs are used, patients should be stabilised on these prior to leaving the referring unit.

Seizures and intracranial pressure should be controlled as far as possible. See section 5.11 for more information on transfer of the patient with brain injury.

Electrolytes should be checked and corrected when needed. Blood glucose should be at least 4mmol/l prior to transfer. Patients must not receive insulin without accompanying energy substrate and blood glucose must be monitored appropriately. A nasogastric tube and a urinary catheter should be inserted in most circumstances.

Where a spinal injury is known or suspected, appropriate spinal immobilisation must be implemented. Spinal injury should be proven or disproven at the earliest opportunity, and spinal referral made prior to transfer if appropriate. Fractures should receive, at the very least, basic wound cleaning and splinting.

The patient should be securely strapped to the transfer trolley by means of a five-point harness. Pressure areas, particularly neurovascular bundles, should be protected. The patient's temperature should be monitored, and warming blankets should be used to keep the patient warm unless contraindicated. Indwelling lines and tubes should be secure, visible, and accessible. Patients should be positioned with 30-degree head of bed elevation unless contraindicated.

Being 'packaged' onto a transfer trolley may be distressing and uncomfortable for an awake patient. Reassurance, sedation, analgesia, and anti-emetics should be provided as required.

Infection prevention and control measures should be considered and discussed with the receiving hospital if relevant. Appropriate personal protective equipment should be used by all team members.

If cardiac arrest in transfer is a significant possibility, a plan should be made for such circumstances. If a DNACPR decision is appropriate, this should be a unified DNACPR, and the decision should be communicated to all accompanying staff.

5.6.1.2 Preparing equipment

Inter-hospital transfer of critically ill patients should be undertaken using an appropriate critical care transfer trolley, e.g. the Ferno CCT PX with SX cotsides. Staff must be capable of using transfer equipment available to them.

Immediately pre-transfer check:

- Oxygen cylinders full
- Clean disposables for ventilator and suction
- Device check for ventilator
- Batteries fully charged - ventilator, monitor, suction and infusion pumps
- Critical care transfer bag checked and sealed (see appendix 2 for example contents).

Battery operated equipment should be plugged in during preparation and in the ambulance. Appliance battery life varies significantly depending on how fully the battery is charged, appliance use and the age of the battery.

The amount of oxygen required for the journey should be estimated, and additional supplies for unforeseen delays taken (see appendix 3). Transfer ventilators often display actual oxygen consumption.

Additional equipment may be required, e.g. a glucometer (if the patient is receiving insulin) or equipment to insert a chest drain (though if a chest drain is likely to be required it is preferable to insert this prior to transfer).

Warm protective clothing including footwear should be worn. High visibility jackets should also be worn.

A charged mobile phone with contact numbers for the responsible consultants at the transferring and receiving units should be taken.

5.6.1.3 Drugs and blood for transfer

Sedatives, analgesics, neuromuscular blocking agents, vasoactive and resuscitation drugs, and intravenous fluids should be taken on all inter-hospital transfers. Controlled drugs must be handled in accordance with trust policies and procedures. Medication to treat intra-cranial hypertension and seizures should be taken if appropriate.

Additional drug supplies should be taken to allow for unforeseen delay. The patient's allergy status should be checked prior to departure.

Patients should not normally be transferred with blood components unless transfusion has already commenced. Obtaining blood may cause delays and the risks of transfusion are likely increased in transfer. If blood components are required for transfer, **liaise with the blood transfusion laboratory early.** Blood transfusion laboratory involvement is **essential** to minimise waste, both by providing an appropriately packed transfer box and liaising with the receiving blood transfusion laboratory, and to ensure that legal obligations regarding traceability are met.

5.6.1.4 Communication and documentation

While many critically ill patients have altered consciousness, every effort should be made to communicate with patients about transfer arrangements. Relatives should be kept informed at all stages of transfer and provided with written information (appendix 4 – GM CCN patient and relative information leaflet). The purpose of the transfer should be explained, and care taken not to

prejudge the actions of the receiving team. Contact telephone numbers for the referring and receiving hospitals should be provided to relatives, and they should be informed of the expected destination. In most cases relatives will not be able to accompany the patient during transfer and alternative transport arrangements should be explored. Patients who recover consciousness following transfer are likely to need support to help understand what happened to them.

When the patient is being transferred from critical care unit to critical care unit, the contents of the GM CCN Handover for Interhospital Transferred Patient form (appendix 5) should be completed in full and sent with the patient. This is not required when the patient is being transferred from the emergency department or in time critical situations. Limited printed/copied patient notes should be prepared. All documentation should be placed in a sealed and clearly marked envelope.

The GM CCN Inter-Hospital Transfer form must be used to document inter-hospital transfers. The white copy of the form should be left in the patient's notes at the receiving site and the yellow copy must be returned to the network. The transferring doctor must bring the yellow form back to their base hospital.

The yellow forms should be returned to the network by post (NHS Greater Manchester Critical Care Network, Regus Room 225, Manchester Business Park, 3000 Aviator Way, Wythenshawe, Manchester M22 5TG).

5.6.1.5 Requesting an ambulance

Until the North West Adult Critical Care Transfer Service is established, an NWAS ambulance should be requested by contacting the healthcare professional line on 0345 140 0144. You will be asked several questions to determine the level of response required. A clinician is available on the healthcare professional line for advice and assistance. An NWAS ambulance should be requested once the patient is ready to travel.

The response categories are as follows.

- **Life threatening emergency (IFT level one).** Immediately life-saving clinical interventions are needed from the ambulance service in addition to emergency transportation, e.g. cardiac arrest.
- **Emergency (IFT level two).** Patients requiring immediate clinical care in another facility – e.g. time critical life, limb or sight saving intervention. The next available ambulance will be allocated; it is vital that the patient is ready to travel.
- **Urgent (IFT level three).** Patients who do not require immediate time critical intervention, but whose urgent needs cannot be met within their current facility.
- **Non-urgent (IFT level four).** Not fulfilling any of the above descriptions.

5.6.1.6 Immediately before departure

- Contact the receiving unit to update them on the patient's condition and provide an estimated time of arrival
- Confirm exact location the patient is being transferred to, e.g. the emergency department

5.6.2 In the ambulance

All portable equipment must be securely stowed to reduce risk of injury in the event of an accident. Under no circumstances should equipment, e.g. syringe pumps, be left on top of the patient or trolley; they may become dangerous projectiles in the event of sudden deceleration.

Ambulance oxygen should be used during transfer. Ambulance oxygen cylinders must be checked prior to departure. Most vehicles are equipped with 2 F cylinders (2720 litres in total). All cylinders must be held in secure housings at all times.

The ambulance AC/DC power inverter should be used to preserve equipment battery life (appendix 7).

Monitors must be clearly visible by the transferring team from their seated position.

Staff must remain seated at all times and wear seat belts provided. If it is necessary to attend to the patient during transfer, the ambulance crew should be informed, and the vehicle stopped in a safe place before treatment is administered.

High speed journeys are not necessary in the majority of cases. They significantly increase the risk of an accident. Blue lights and sirens may be used to aid passage through traffic and deliver a smooth journey.

5.6.3 At the receiving hospital

The GM CCN Inter-Hospital Transfer Checklist should be used as outlined below (appendix 1).

5.6.3.1 Before moving the patient off the transfer trolley onto a bed

- **Introductions:** all staff should introduce themselves and state their role
- **Immediate concerns?**
- **In charge:** the person controlling the airway and leading the transfer from the trolley to the bed should be clearly identified (normally the transferring doctor)
- **Infusions and lines:** check that infusion lines and ventilator tubing will reach during patient movement

5.6.3.2 Once the patient is on the bed

- Establish the patient on the critical care ventilator with appropriate settings and capnography
- Transfer infusions to receiving unit's pumps
- Transfer monitoring

5.6.3.3 Handover

The transferring team should provide the receiving team with both a written and verbal handover. 'Hands-off handover' is recommended. The patient remains the responsibility of the transferring team until handover is completed.

The GM CCN Handover for Interhospital Transferred Patient form (appendix 5) should be used for verbal as well as written handover. Any events in transfer should be handed over.

Nursing handover should include:

- Medications administered
- Lines and devices
- Pressure area and tissue viability concerns
- Cultural, religious and spiritual needs
- Property
- Relative contact information

5.6.4 Returning to base

The ambulance service will normally bring you back to your base with the trolley. Please bring all the equipment back with you. Please ensure all documentation is complete.

If there have been any issues during the transfer it may be useful for the transferring team to discuss them with the responsible consultant on their return. Please complete a DATIX if any critical incident occurred, including equipment failure and accidental device removal.

5.7 Intra-hospital transfer

The principles described above for inter-hospital transfers must be followed for intra-hospital transfers; similar levels of preparation, supervision and care are required for each. An appropriate checklist, such as the one in appendix 8, should be used.

5.8 Transfer to the outdoors

5.8.1 Background

Patients who have prolonged stays in critical care frequently report the benefit of spending time outdoors in terms of their recovery and mental health. National guidance recommends that transfer of critically ill patients to the outdoors should be routine practice, as part of critical care humanisation.

As with all transfers, risks must be carefully assessed to ensure they are outweighed by potential benefits. Transfers must be performed to a very high standard. The patient should be involved in planning transfers to the outdoors whenever possible, and consent should be obtained if the patient has capacity to make this decision for themselves.

5.8.2 Outdoor spaces used

A safe and suitable outdoor space should be selected, and a plan made for shelter in the event of change of weather.

5.8.3 Conduct of transfer

The conduct of these transfers is as for any other intra-hospital transfer (see section 5.7).

In addition:

- The responsible critical care consultant and shift leader must authorise the transfer. The patient's next of kin should normally be informed.
- The outdoor conditions must be considered, and a weather forecast consulted prior to transfer. Transfers should not be undertaken in wet weather due to the risk of slippery surfaces and equipment damage. Blankets should be used to prevent patients becoming cold. Patients should not be exposed to direct sunlight more than briefly. Sun protection (sunglasses, hats, and sunblock) should be used routinely. If weather precludes transfer outdoors, consideration should be given to transfer to a place where patients can view the outdoors.
- Prior to departure staff must ensure the outdoor space is available and safe for transfer of the patient.
- Consideration should be given to infection prevention and control measures.
- Even patients assessed as 'low risk' must be accompanied by two members of staff.

5.8.4 Patient selection

All patients should be considered for transfer to the outdoors.

Priority should be given to patients with prolonged critical care stays. Patients at high risk of delirium may particularly benefit from transfer to the outdoors but immediate safety must be assured, and highly agitated patients are not suitable for transfer to the outdoors.

Patients should have relative physiological stability and be considered at low risk of deterioration in transfer.

5.9 Capacity transfers

5.9.1 Background

Capacity transfers of critically ill patients (sometimes called non-clinical or mutual aid transfers) are associated with significant risks to the patient, both related to the transfer itself and to associated increased length of critical care stay. Patients and relatives may be distressed and there is the potential for conflict with families. Capacity transfers are resource intensive and do not address the underlying cause, i.e. under provision of critical care capacity.

As a general principle, patients should only be transferred if that transfer is in their best interests. In exceptional circumstances it may be in the best interests of a patient to leave a severely under resourced critical care unit, to create capacity to provide emergency care. A capacity transfer may be the 'least bad' option.

5.9.2 When should a capacity transfer occur?

Capacity transfers should only occur as a last resort. All efforts should be made to accommodate the patient at their current hospital. The relevant critical care unit escalation plan should be followed. All capacity transfers should be discussed with the critical care management team.

5.9.3 Who should be transferred?

- A 'three wise person' approach is encouraged to decide on the most appropriate person to be transferred. The decision makers could be the critical care consultant of the day, the critical care nurse in charge and the clinical director or clinical lead or their delegate.

- The care requirements for the individual being transferred must be able to be met in full at the destination hospital, including appropriate staffing. Patients requiring ongoing specialist care at their current hospital are not suitable for capacity transfer.

- The shared-care (parent) team consultant and receiving consultant(s) should also be involved in the process.

- Consideration should be given as to whether any patient could benefit from transfer, e.g. access to family.

5.9.4 Practical consideration

- These transfers should be performed in daytime only using the processes outlined in section 5.6.

- The reason for transfer should be explained clearly and with honesty to the patient and their next of kin.

- Patients should be transferred to another critical care unit within their **bubble** if possible:

  - Wrightington, Wigan and Leigh and Bolton

- The Northern Care Alliance (Salford, Oldham and Bury)
- Manchester Foundation Trust (Manchester Royal, Wythenshawe, North Manchester)
- Tameside, East Cheshire, Stockport

- If it is not possible to transfer within bubble, patients should preferably be transferred within their **sector**:

  - North sector – Wrightington, Wigan and Leigh, Bolton, the Northern Care Alliance
  - South sector – Manchester Foundation Trust, Tameside, East Cheshire, Stockport

- Senior management within the trust should be informed as described in the escalation plans and a DATIX completed.

5.10 Transfer to the ward on stepdown from critical care

Patients who are ready for stepdown to the ward should undergo nurse led transfer. Transfer of these non-critically ill patients should be carried out in keeping with local guidelines and policies. Medical staff or an advanced critical care practitioner should hand the patient over, both verbally and in writing.

5.11 Transfer in specific circumstances

The following may be useful when transferring patients in the specific circumstances described. Consultant and expert advice should be sought when required. The processes laid out in the inter and intra-hospital transfer sections should also be followed.

5.11.1 Patients with acute brain injury

Please refer to the 'Inter-Hospital Transfer of the Critically Ill Adult with Acute Brian Injury in Greater Manchester' guideline (https://www.gmccmt.org.uk/wp-content/uploads/2024/05/NCACC033_V1_Inter-Hospital_Transfer_Critically_Ill_Adult_Acute_Brain_Injury-1.pdf)

5.11.2 Cardiothoracic transfers - interventional cardiology and thoracic aortic emergencies

Percutaneous coronary intervention (PCI)

- The majority of these patients are transferred from the emergency department.

- Transfer is often time critical however the patient should still be assessed and stabilised as far as possible prior to transfer.

- The right radial artery should be avoided if possible – this is the predominant operator choice for primary PCI and inability to use can impact on speed/logistics of procedure.

Thoracic aortic dissection

- Transfer is time critical however the patient should be assessed and stabilised as far as possible prior to transfer
    - Mortality for acute type A dissection is 1-2% per hour immediately after onset of symptoms (Hagan et al, 2000)
    - Do not delay transfer to insert a central venous catheter
- Insert two large bore venous cannulae and a urinary catheter prior to transfer
- An arterial line is essential
- Reduce shear stress on aorta by controlling pain, heart rate and blood pressure
    - Typical goals are heart rate 60bpm and systolic BP 100-120mmHg
    - Labetalol is often used first line - only use drugs you are familiar with
    - Glyceryl trinitrate (GTN) and other vasodilators should not be used without adequate beta blockade as this will increase sheer stress and may cause extension of the dissection.
- Blood transfusion may be required but crossmatching must not delay transfer. Patients should not normally travel with blood components unless transfusion has already been commenced. If blood is required for transfer it is essential that the blood transfusion laboratory is involved early. See section 5.6 for more details.
- Avoid large volume crystalloid infusion
- A practitioner with advanced critical care capabilities is required for transfer to manage haemodynamics – this could be an anaesthetist or critical care practitioner
- In the event of a cardiac arrest CPR is unlikely to change the outcome – verbalise plan for this before setting off
- Close communication with surgical team, patient and relatives is essential.

5.11.3 Ruptured abdominal aortic aneurysm

The vast majority of patients with ruptured abdominal aortic aneurysm are transferred from the emergency department without critical care or anaesthetic involvement. An ambulance with paramedic crew is preferred but not essential. A practitioner with advanced critical care capabilities is not required for transfer except in very rare circumstances. If the patient significantly deteriorates in transfer, sadly the situation is unlikely to be salvageable irrespective of accompanying team.

Cardiac arrest in the current admission, intubation due to acute deterioration and requirement for inotropic support are usually considered **contraindications** to transfer – such patients are unlikely to

survive surgery and should only be transferred following consultant to consultant discussion (or most senior resident doctor if consultant is off-site).

- Transfer is time critical and should occur within 30 minutes of diagnosis.
- Transfer should not be delayed to insert central venous, arterial or urinary catheters
- Insert two large bore venous cannulae prior to transfer
- Ensure adequate analgesia
- Hypertension and some normal blood pressures will exacerbate blood loss - systolic blood pressure of 90-120mmHg in an alert patient is usually acceptable. The previously recommended systolic blood pressure of 70mmHg may be too low, particularly in elderly patients. Judicious (crystalloid) fluid resuscitation is recommended to achieve this. Rarely, vasoactive support may be required however, as above, this is usually considered a contraindication to transfer. Large volume crystalloid infusion should be avoided.
- Blood transfusion may be required but crossmatching must not delay transfer. Patients should not normally travel with blood components unless transfusion has already been commenced. If blood is required for transfer it is essential that the blood transfusion laboratory is involved early. See section 5.6 for more details.

More information is available in the Royal College of Emergency Medicine Best Practice Guideline 'Management and Transfer of Patients with a Diagnosis of Ruptured Abdominal Aortic Aneurysm to a Specialist Vascular Centre' (January 2019).

5.11.4 Burns

Airway considerations

- Risk of progressive airway swelling and loss of airway – low threshold for intubation prior to transfer, particularly if there is head and neck involvement, intra-oral erythema or swelling, or soot in the mouth and nose
- Aim to place **uncut 8.0** endotracheal tube with subglottic suction port to facilitate bronchoscopy and allow for facial swelling – usually possible soon after burn

Breathing considerations

- Early therapeutic bronchoscopy if significant inhalational injury – consider lavage with isotonic sodium bicarbonate
- Measure carboxyhaemoglobin levels and treat with high FIO2
- Consider cyanide poisoning in patients with worsening base deficit and lactate despite fluid resuscitation

Cardiovascular/fluid considerations

- Fluid resuscitate as per the Parkland Formula (from the time of the burn) – document clearly
- Insert central venous, arterial and urinary catheters – vascular access can be through burnt tissue if other site not available

Other considerations

- Opioid analgesia – burns can be extremely painful
- Normothermia must be maintained – even mild hypothermia results in vasoconstriction which worsens burn outcomes
- Feeding nasogastric tube prior to transfer

5.11.5 Requests for an 'airway trained' transferring doctor

On occasion, the receiving team may request an 'airway trained' doctor to transfer a patient, whom they consider to be at increased risk of airway compromise in transfer. Intubation in transfer is likely to be significantly more difficult and potentially dangerous than in the referring hospital. Strong consideration should be given to securing the airway prior to transfer.

5.11.6 High consequence infectious diseases

Transfer of patients with high consequence infectious diseases (HCID) is complex and can be very challenging. This document does not deal with the specific management of HCID. Please refer to local policies and guidelines, contact infection prevention and control, and contact microbiology for advice. External expert advice must also be sought, in the first instance from the infectious diseases on call team at North Manchester General Hospital.

If you suspect or confirm HCID:

- **Do not move the patient out the emergency department side room until a full multidisciplinary plan has been finalised.**
- **Most patients should be transferred directly from the emergency department to the local infectious diseases centre.**
- **Minimise clinical staff exposure and equipment usage, including radiology.**

The following should be considered with regards to transfer:

- Appropriate PPE for all members of the team – if in doubt default to the highest level of PPE, emergency departments usually stock emergency PPE packs

- Minimise number of staff contacts
- Early liaison with the ambulance service
- Route out of referring and into receiving hospital
- Equipment/waste decontamination following transfer
- Category four pathogens can only be transferred using NWAS Hazardous Area Response Team Ambulances – this requires planning with the ambulance service

5.12 Incidents and indemnity

All adverse incidents must be reported via the adverse incident reporting system (DATIX). In addition, incidents related to inter-hospital transfers must be reported to the Greater Manchester Critical Care Network.

For NHS staff, carrying out transfers within their scope of practice on behalf of their trust, normal NHS indemnity arrangements will apply. The Intensive Care Society and Association of Anaesthetists provide additional insurance for their members as a benefit of membership.

6. Roles & Responsibilities

6.1 GM CCN Transfer Lead

The Greater Manchester Critical Care Network Transfer Lead is responsible for chairing the Transfer Group. This may involve development and oversight of referral pathways, transfer protocols and guidelines, and associated quality assurance programmes.

6.2 Site Transfer Leads

Leads for transfer of critically ill adults working with senior management within trusts will ensure that the guideline is available to all relevant staff, and that staff have the resources and training required to undertake safe transfer of critically ill adults.

6.3 All staff

All staff will ensure that they are aware of the guideline and use it to guide their practice. They will escalate any problems related to implementation of the guideline to the authors and report any adverse incidents via the DATIX system.

7. Monitoring document effectiveness

Transfer related DATIX reports will be reviewed and discussed within governance structures, both locally and at the Greater Manchester Critical Care Network Transfer Group.

Inter-hospital transfer forms returned to the Greater Manchester Critical Care Network will undergo audit to measure the quality of inter-hospital transfers of critically ill patients. Transfer audit results will be shared and discussed in local and regional transfer meetings. Transfer forms should also be audited locally.

Annual audit of transfers should be performed by trusts in collaboration with the Greater Manchester Critical Care Network.

8. Abbreviations and definitions

ACCP	Advanced critical care practitioner
DNACPR	Do not attempt cardiopulmonary resuscitation
EPR	Electronic patient record
FICM	Faculty of Intensive Care Medicine
GCS	Glasgow Coma Scale
GM CCN	Greater Manchester Critical Care Network
HCID	High consequence infectious disease
ICM	Intensive Care Medicine
ICS	Intensive Care Society
IFT	Inter-Facility Transfer
LocSSIPs	Local Safety Standards for Invasive Procedures
NICE	National Institute for Health and Care Excellence
NWAS	North West Ambulance Service
PPE	Personal protective equipment
RCoA	Royal College of Anaesthetists

9. References

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10. Appendices

Appendix 1: GM CCN Inter-Hospital Transfer Checklist
Appendix 2: Example transfer bag contents
Appendix 3: How much oxygen do I need?
Appendix 4: GM CCN Critical Care Transfers – a leaflet for patients and relatives
Appendix 5: GM CCN Handover for Interhospital Transferred Patient
Appendix 6: How to use the power inverter
Appendix 7: GM CCN Intra-Hospital Transfer Checklist

Greater Manchester Critical Care Network

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Appendix 1: GM CCN Inter-Hospital Transfer Checklist

Checklist for Critical Care Transfers **OUT**

In Transferring Hospital:

1. Preparation	
Patient fit for transfer	
Transfer trained medical and qualified nursing or ODP staff available	
Infection prevention and control issues identified and communicated to receiving team	
Bed confirmed at destination	
Named accepting speciality consultant and critical care consultant identified	
Case notes and investigations photocopied or printed	
Patient and/or relatives informed	
Patient valuables secured	
Ambulance service contacted, appropriate personnel & vehicle for transfer trolley confirmed	
Destination hospital and department location confirmed	

2. Patient Checks			
Airway		**Disability**	
Safe and secure		Seizures controlled	
ETT/tracheostomy position confirmed		ICP managed	
NGT in position		Sedation +/- Paralysis	
Breathing		**Exposure / Metabolic**	
Ventilation established		Temperature maintained	
Arterial blood gas checked		Urinary catheter checked	
Capnography in use		Glucose > 4mmol/l	
Bilateral breath sounds		Potassium < 6, Ionised calcium > 1mmol/l	
HMEF		**Monitoring**	
Circulation		ECG, BP, Sa02, ETC02	
CVC stable		Indwelling lines, tubes secure/accessible	
Hb adequate		**Trauma**	
Minimum two routes of IV access		C-Spine stable/ protected	
A-Line + CVC working and zeroed		Pneumothoraces drained	
Blood for transfer checked		Thoracic/Abdominal bleeding controlled	
		Long bone/pelvic fractures stabilised	

3. Immediate Pre-departure Time Out *Read aloud with all transfer team members present, including paramedics*	
Introductions of staff completed	
Patient stable on transfer trolley and monitoring in place	
Emergency airway equipment available	
Oxygen & batteries adequate (use ambulance oxygen & electrics)	
Intra-venous access established and checked	
Infusions running and secure	
Spare sedatives/vasopressors/inotropes/fluids available as required	
Blankets/heat loss measures in place	
Pressure points protected	
Transferring & receiving unit phone numbers available (mobile phone)	
Specific potential problems and how we manage them	
Receiving unit informed of departure	
Directions to destination department and hospital known	

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Checklist at Receiving Hospital **IN**

Transfer of care/handover for patient coming from another hospital:

1. Before moving patient and introductions	
All staff to introduce themselves (accepting and transferring teams, name and role)	
Introductions complete?	
Who will control airway and supervise transfer?	
Any immediate concerns? What infusions are running? What are ventilator settings?	
Will ventilator tubing and lines reach?	
Move the patient under direction of the airway supervisor. Then:	
2. Handover Procedures	
Patient established on ventilator with capnography in place?	
Infusions transferred to receiving unit's pumps?	
Monitoring transferred?	
3. Handovers (All staff listen to both handovers)	
Medical Handover	
History current problem and mechanism of injury	
Airway or ventilation 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	
Relative information handed over	
Documentation and case notes handed over	
Check after handover procedures complete	
Patient belongings off-loaded	
Transfer equipment re-loaded	
Is bed head airway sign completed and allergies recorded?	
4. Information about transfer: transferring and receiving doctors:	
Both check the transfer form for completeness - dates and times and other boxes before signing.	
Please send yellow copy of the transfer form to GMCCN, Regus, 3000 Aviator Way, Wythenshawe, Manchester, M22 5TG	

Comments to CCN.Transfer@mft.nhs.uk

Appendix 2: Transfer Bag Contents (example)

SCO Transfer Bag Contents:

Self-vent pocket

Guedel airway size 2-4

Nasopharyngeal airway size 6 & 7

Oxygen mask – Non rebreathe

O2 tubing

Suction pocket

2 x Yankauers

2 x Suction catheters 10F – 14F

2 x suction tubing

Advanced airway

ET tube sizes 6-9

2 x Laryngoscope handle and batteries

1 x Laryngoscope blade size 3

2 x Laryngoscope blade size 4

1 x Disposable Video Laryngoscope

1 x Tube ties

3 x Lube

1 x Stylet

1 x Bougie

1 x Tracheal dilators

1 x Scalpel 22

1 x 10ml Syringe

1 x Torch

2 x Face mask

1 x CO2 cable

Breathing pocket

iGel size 3 – 5

1 x Airway filter

1 x HME

1 x Catheter mount

1 x Water circuit

1 x Sterile scissors

1 x Anesthetic masks (Green and Orange)

1 x Stethoscope

Circulation pocket

2 x IV cannulae 14-22G

10 x Pairs nonsterile gloves

5x Luer lock syringes 20mls

4 x Luer lock syringes 50mls

3 x Chloraprep skin prep

10 x Alcohol wipes

2 x Blood giving sets

5 x Infusion giving sets

5 x Infusion extension sets

5 x 3-way taps

10 x Bungs

1 x Tape

4 x Gauze

5 x Cannula dressing

12 x ECG stickers

1 x trauma scissors

10 x Labels

10 x Sodium Chloride amps

Needles – drawing up, green, white and blue x 5 each

2 x Tourniquet

Appendix 3: How much oxygen do I need?

Ventilated patients
Ventilator oxygen consumption (litres/minute) (once patient stabilised on ventilator) x transport time (minutes) x 2 (for unforeseen delays) = oxygen requirement (litres)

Example:
5.3l/min x 45 minute transfer (e.g. to another hospital within the NCA) x 2 = 477l

Please see ventilator user guides (appendix 2) for more information on ventilator oxygen consumption

Non-ventilated patients

Oxygen flow rate (litres/minute) x transport time (minutes) x 2 (for unforeseen delays) = oxygen requirement (litres)

Example:
10l/min x 16 minute transfer (e.g. to theatre) x 2 = 320l

Oxygen cylinder sizes	
D	**340l**
CD	**460l**
E	**680l**
F	**1360l**

Appendix 4: GM CCN Critical Care Transfers – a leaflet for patients and relatives

This information leaflet aims to help patients and their relatives understand why it may be necessary to transfer a patient to another hospital.

This may be referred to as a "Critical Care Transfer".

If you have any further questions, please ask the medical staff caring for you or your relative.

Greater Manchester Critical Care & Major Trauma

Contact details for Critical Care Units in Greater Manchester

The Christie Hospital	**M20 4BX**
Oncology Critical Care	0161 446 3481
Fairfield General Hospital	**BL9 7TD**
Critical Care Unit	0161 778 2510
Manchester Royal Infirmary	**M13 0HY**
Intensive Care Unit	0161 276 4712
High Dependency Unit	0161 276 4166
Cardiac Intensive Care Unit	0161 276 4544
North Manchester General Hospital	**M8 5RB**
Critical Care Unit	0161 720 2344
Royal Albert Edward Infirmary, Wigan	**WN1 2NN**
Critical Care	01942 822380
Royal Bolton Hospital	**BL4 0JR**
Intensive Care Unit	01204 390997
High Dependency Unit	01204 390327
Royal Oldham Hospital	**OL1 2JH**
Intensive Care Unit Pod A	0161 627 8838
Intensive Care unit Pod B	0161 627 8925
Salford Royal Hospital	**M6 8HD**
Critical Care Unit	0161 206 8752
Stepping Hill Hospital, Stockport	**SP2 7JE**
Intensive Care Unit	0161 419 4237
High Dependency Unit	0161 419 4125
Tameside General Hospital	**OL6 9RW**
Critical Care	0161 331 6062
Wythenshawe Hospital	**M23 9LT**
Adult General Critical Care	0161 291 6403
Cardiothoracic Critical Care	0161 291 4527

Greater Manchester Critical Care & Major Trauma

Critical Care Transfers

A leaflet for patients and relatives

Greater Manchester Critical Care Network

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Greater Manchester Critical Care Network

Critical Care Transfers

What is a critical care transfer?

A critical care transfer is when a critically ill patient needs to be moved to another hospital.

Why do we do this?

Although moving a patient to another hospital may be distressing, sometimes it is necessary. Possible reasons for transferring patients include:

- For further tests or procedures
- For specialist care that can only be delivered in certain hospitals
- To move to a hospital nearer home

What to expect

Throughout the transfer, the patient will be looked after by a team of doctors and nurses trained in the transport of critically ill patients.

The speed at which a patient gets moved to another hospital varies depending on the reason for the transfer.

Someone will explain to you what is happening and why, even if the transfer is done as an emergency.

What will happen?

Before the transfer

Once it has been decided that a patient needs to be transferred, hospital staff will tell you why this is necessary and when it will happen.

We will give you details of the ward name and hospital where your relative is being transferred to. If needed, we can give you directions to the new hospital.

It may be necessary to sedate the patient and assist their breathing with a machine during the transfer. However, this may have been done already.

The patient will be moved onto a special bed (stretcher) that can be transported in an ambulance. This enables staff to continue to monitor the patient during a transfer.

During the transfer

An ambulance will be arranged to transport the patient. The patient will usually be looked after by staff familiar with that patient. If this is not possible, a full handover will be given to the team transferring them.

Due to the limited space in an ambulance, it is not possible for relatives to travel with the patient. You will need to make your own way to the destination hospital.

Occasionally, a patient's condition can change during a transfer. The team looking after the patient will assess them and decide what is best to do. Very occasionally, this may mean returning to the original hospital or diverting to another hospital. You will be contacted as soon as possible if this happens.

After the transfer

The accompanying doctor and nurse will hand over the care of the patient to the new team. Both teams will ensure that the patient is safe in their new location.

There may be a delay before you can see your relative in their new hospital.

Doctors and nurses will update you about any changes in the plan for the patient.

Transfer destination details

Name of new hospital:

Address:

Post code:

Ward:

Appendix 5: Critical Care Handover for an Interhospital Transfer

1

This form is for completion by the medical team wishing to refer their patient between intensive care units.

Critical Care Handover for a Interhospital Transferred Patient

Greater Manchester Critical Care & Major Trauma

Patient details

- Name:
- DOB:
- Hospital number:
- NHS number:
- Gender:

ICU transferred from;
Date of transfer;
Contact details of transferring unit

- **Urgent enquiries (eg Oncall Registrar)**
-
- **ICU contact number;**

Past medical history

Baseline mobility and relevant social history

Drug history

- **Allergies**
- **Pre-admission**
- **Current critical care medications (including sedation, VTE and anticoagulation)**

Medicine	Date

Presenting complaint

- Diagnosis:
- History:

Significant events during critical care stay

2

System review

A- (Intubated/Tracheostomy/Date/Grade of intubation/Length of tube at teeth)

B- (Sp02 target/Ventilator settings/Details of bronchoscopy/Chest drains/Proned/Physiotherapy)

C- (MAP target/Fluid balance/Recent ECG and echo/Renal replacement)

D- (AVPU/GCS/RASS/Focal neurology/Analgesia/Emotional/psychological needs)

E- (Pyrexia/Bowels/skin integrity)

Blood tests

Type	Date	Results
FBC		
U+E		
LFT		
Inflammatory		
Coagulation		
ABG		
Other		

Imaging

Type	Date	Result summary

Access/Lines/Urinary catheter

Type	Location	ANTT?	Date inserted

Microbiology – Include routine and COVID swabs

Type	Date		Result/Sensitivities

Antibiotics

Antibiotic	Indication	Micro involved?	Start date and duration

Nutritional plan

Insulin requirements

Interventions needing action or follow up
(Please include contact details of relevant team if applicable)

Other key monitoring including drug levels/HbA1c/Follow up monitoring:

4

Communication
Include details of Knowledge of diagnosis/Family updates/Relative and NOK information/Language barriers

Other relevant information

Referrer Information

Name:

Job title:

Consultant responsible:

Signature:

Appendix 6: How to use the Cotek DC to AC Power Inverter

How to use the Cotek DC to AC Power Inverter

The inter-hospital transfer trolley has a power inverter so electrical equipment can be charged during transfer from ambulance electrical supply. Ambulance supply should be used in all transfers. Some ambulances have a three-pin plug – in these circumstances the power inverter is not required.

For safety reasons, the inverter **must** be switched off before it is connected to the ambulance supply.

To use the power inverter:

- Check the inverter is switched off
- Plug red three-pin plug into inverter (this could be done prior to leaving critical care)
- Connect red and black cables with hooks to ambulance supply
- Switch on the inverter

If it is working, you will see appliances charging.

To disconnect from the ambulance supply:

- Switch off the power inverter
- Disconnect the red and black cables with hooks from the ambulance supply

Appendix 7: GM CCN Intra-hospital transfer checklist

Greater Manchester Critical Care Network

Checklist for Intra Hospital Critical Care transfers

1. Preparation

Patient fit for transfer (Y/N)	
IV access for radiocontrast agent available if required (Y)	
Transfer trained medical and qualified nursing or ODP staff available	
Case notes, investigations, renal function for contrast, safety questionnaire for MRI available	
Patient and/or relatives informed	
Destination aware and ready	

2. Patient Check

Airway and C-Spine		Disability	
Airway safe /secure (cm at teeth checked)		Seizures controlled	
ETT / Tracheostomy position confirmed		ICP managed	
C-Spine protected		Sedation +/- Paralysis	
Check: Is log-rolling required		**Exposure / Metabolic**	
NGT in position. NG feed stopped/aspirated		Temperature maintained	
Breathing		Urinary catheter checked	
Ventilation established		Glucose > 4 mmol/l	
Arterial blood gas checked		Insulin: consider discontinuing or give IV Glucose 10% infusion. Ensure blood glucose monitoring available	
Capnography in use			
Bilateral breath sounds		Potassium < 6 mmols	
Chest drains secure/ HMEF in place			
Circulation		**Monitoring**	
Adequate vasopressors/inotropes available		ECG, BP, $Sa0_2$, $ETC0_2$	
Adequate IV access		Indwelling lines, tubes, secure/accessible	
A-Line + CVC working and zeroed		Batteries charged and spare available	

3. Immediate Pre-Departure Time Out *Read aloud with all transfer team members present*

Introductions of staff completed	
Patient stable and monitoring in place	
Transfer bag checked	
Emergency airway equipment available	
Oxygen & batteries adequate	
Intra-venous access established and checked	
Non-essential infusions stopped	
Infusions running and secure	
Spare sedatives / vasopressors / inotropes / fluids/ syringe drivers available	
Blankets / heat-loss measures in place	
Moving and handling plan in place	
Destination informed of departure	

4. Completion of Transfer

Handover	
Patient established on ventilator with capnography in place	
Infusions and monitoring transferred	
Equipment and drugs restocked	
Clinical note made to document an intra hospital transfer has occurred; patient safety incident completed if required, your log book updated	

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INTRA HOSPITAL TRANSFER FORM

Patient Details	Transfer Details
Name: DOB: Hospital Number: Allergy: HCAI: Radiocontrast Contraindication: Y N	Date: Transferring Unit: Destination: Reason for Transfer: Checklist Used: Y N
Escorting Personnel	**Monitoring (please circle)**
Doctor Name: Doctor GMC No: Nurse Name: ODP Name:	ECG/$Sp0_2$/NIBP/IABP/CVP FiO_2/$ETCO_2$ Temp Urine/Drains/NG Other:_____
Transfer Ventilator	**Airway (please circle)**
Spont/Manual/Mechanical Ventilation Mode: Model: P insp: PEEP: VT: RR:	Facemask CPAP ETT/Tracheostomy Size:_____ Other _____
Lines and Drains	**Disability**
PVC: Size_____ Site _____ CVC: Site _____ Arterial: Site _____ Drains: Type Site _____	Eye Protection _____ C Spine Protection _____ GCS E ____ V____ M ____ Pupils L ____ R____

Time																								
200																								
180																								
160																								
140																								
120																								
100																								
80																								
60																								
40																								
SpO_2																								
FiO_2																								
$ETCO_2$																								
Other																								
Fluid/Drug																								

Comments/Critical Incidents- ensure any critical incidents reported post transfer

(Only record observations if safe to do so!- not whilst walking)