NHS

North West Critical Care and Major Trauma

Operational Delivery Networks

Standards & Guidance:

Intra and Inter-Hospital Critical Care Transfers (Adult Patients)

Cheshire and Mersey Critical Care Network

LANCASHIRE & SOUTH CUMBRIA CRITICAL CARE NETWORK

Greater Manchester Critical Care NETWORK NHS

Updated by:
Andrea Baldwin – Network Director, Lancashire & South Cumbria CCN

Contributors:
Dr Tony Thomas - Medical Lead, Greater Manchester Critical Care ODN

Dr Paul Dean - Medical Lead, Critical Care Lancashire & South Cumbria ODN

Dr Gary Masterson – Medical Lead Cheshire & Mersey Critical Care ODN

Sarah Clarke – Network Director & Lead Nurse, Cheshire & Mersey ODN

Claire Horsfield – Quality Improvement Lead Nurse, Lancashire & South Cumbria ODN

Karen Berry – Lead Nurse, Greater Manchester Critical Care ODN

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Changes	A. Baldwin
Authors	North West Critical Care Networks

Contents

		Page
Summary		4
1.0	Introduction	5
2.0	Definitions	5
3.0	Principles of Transfer	6
4.0	Organising a Critical Care Transfer	7
5.0	Inter-hospital Transport Considerations	8
6.0	Transfer Personnel	8
7.0	Preparing for Transfer	9
8.0	Management During Transfer	11
9.0	Transfer Equipment	11
10.0	Monitoring During Transfer	12
11.0	Documentation	13
12.0	Untoward Incidents	13
13.0	Transfer Audits	14
14.0	Management of Outliers	14
15.0	Transfers from Independent Hospitals into the NHS	14
References		16
Appendix 1 – Inter facility Transfer Decision Support Tool		17
Appendix 2 - Competencies for Critical Care Transfers		19
Appendix 3 - Staff guidance for Intra-hospital transfers		21
Appendix 4 - Staff guidance for Inter-hospital transfers		22
Appendix 5a – Intra-Hospital Critical Care Transfer Checklist		23
Appendix 5b – Inter-Hospital Transfer Checklist		24
Appendix 6 - Repatriations of Out of Network Critical Care Patients		25
Appendix 7 – NW NHS Trusts		26
Appendix 8 - Useful Contacts		27

SUMMARY

These standards and guidelines have been provided by the NW ODNs to support trusts when developing and reviewing their own transfer policies as part of an effective approach to clinical governance. It is recommended that this document should be read in conjunction with the ICS Guidelines *for the Transportation of Critically Ill Adult*[1].

It is recognised that the transfer of critically ill patients may be necessary to ensure patients are able to access clinical and specialist treatment; this may be required either to facilitate diagnostic interventions within a hospital or between hospitals to receive ongoing care. Hence the principles for both intra and inter-hospital transfers apply, and that is to ensure safe movement of patients between locations.

The transfer of critically ill patients is not without risk and should not be undertake lightly. All attempts should be made by provider organisations to manage the need for transferring critically ill patients to another site, as a result of inadequate critical care capacity. The Operational Delivery Networks (ODNs) recognise that the requirement for patient transfer between organisations (inter-hospital) for a higher level of care may increase over the years as reconfiguration of surgical and specialist services change across the North West (NW).

The development of guidance is therefore required to underpin and support safe clinical practice and address the risks associated with transferring critically ill patients within and between conurbations.

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

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

Healthcare professionals 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[1, 2], empirical evidence suggests that these are not necessarily followed[3].

Each trust should undertake a detailed risk assessment at organisational level for transfers of critically ill adults. This must be reviewed and escalated where appropriate and placed on the trust/unit risk register. A copy should be sent to the relevant ODN.

1.0 INTRODUCTION

1.1 This document has been produced to support NHS critical care services throughout the NW, and may be used to assist in the development of their local guidelines/polices as required.

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 The NW ODNs recommend that for all critically ill patient transfers there should be adherence to the recommendations (appendix 1) made within the latest Intensive Care Society guidance on the 'Transportation of the Critically Ill Adult'[1], available at: https://www.ics.ac.uk/ICS/ICS/GuidelinesAndStandards/ICSGuidelines.aspx

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[4] and essentially relates to Level 2/3 transfers

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

(Department of Health, 2000)

2.2 **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:

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

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

- The need for specialist treatment or interventions, e.g. major trauma, neurosurgery, cardio thoracic surgery, ECMO, burns or vascular management (clinical transfer).
- Lack of a critical care bed (capacity transfer).
- Repatriation of a patient back to the referring (parent) hospital or a hospital closer to the patient's home.

NB. 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, unless this forms part of local/network contingency plans for managing escalation and /or major incidents.

2.4 **Capacity Transfer:** A transfer carried out for the purposes of receiving treatment or investigations normally provided at the referring hospital but not available at the time.

Although such transfers may be carried out due to lack of available capacity, they may nevertheless remain clinically necessary and potentially time-critical.

2.5 **Clinical transfer:** refers to those patients transferred for specialist treatment/investigation not provided at the referring (parent) hospital, e.g. for more specialised critical care or discrete surgical, radiological or medical interventions such as angiography, TIPPS, neurosurgery, general surgery and vascular surgery.

2.6 **Primary transfer:** Movement of a patient from the scene of injury or illness to the nearest receiving hospital.

2.7 **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.

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

2.9 **Repatriation**: Movement of a patient being transferred back to the initial referring (parent) hospital or to a hospital nearest to the patient's home, whether from overseas or homeland sites.

2.10 **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.

3.0 PRINCIPLES OF TRANSFER

3.1 **Decision to Transfer**: The decision to transfer any critically ill patient will always be a balance of associated benefits and risk. The decision must 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 and the patient to be transferred when possible.
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 take account of the benefits of transfer and the timing of transfer will reflect factors such as the need for time-critical interventions.

NB. There may be occasions when decisions for time critical transfers are made without a consultant in intensive care medicine; this would include situations where guidelines exist to support decision making and immediate transfer for time critical specialist management (e.g. PCI).

3.2 Before transfer and to ensure patient safety there are number of considerations should be undertaken, these include:

3.2.1 The patient's condition is deemed adequately stable for transfer

3.2.2 Transfer equipment is checked and in working order

3.2.3 Appropriately skilled and competent staff are available

3.2.4 The receiving hospital area has identified they are ready to receive the patient

3.2.5 All lines, tubes, leads are appropriately secured

3.2.6 The ODNs have locally agreed checklists for pre transfer and units should use these to ensure all key elements above are checked and in place before a transfer occurs, whether these are intra or inter-hospital transfers (examples can be found in appendix 5a, 5b).

3.3 When considering an inter-hospital (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 include:

3.3.1 Expedite delayed discharges.

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

3.3.3 Consider obtaining additional appropriately trained staff and utilising un-commissioned critical care bed spaces

3.3.4 Post-operative cases being managed in theatre recovery area, dependent on local policies and staffing arrangements.

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

3.3.6 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 a Critical Care Outreach Team or equivalent where these are available, e.g. non-invasive ventilation may be carried out on designated wards, and patients with tracheostomies may well be managed safely on cohort wards.

3.3.7 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.

3.4 Where patients require inter-hospital transfer for specialist treatment e.g. neurosurgery and/or cardiac surgery, 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. To identify transportation choices reference to NWAS Inter-facility Transfer (IFT)[5] should be made.

3.5 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.

3.6 Where patients need immediate transfer to a tertiary 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. This should be identified through discussions with the tertiary team clinicians.

4.0 ORGANISING A CRITICAL CARE TRANSFER

4.1 Consultation Process

4.1.1 If an inter-hospital critical care transfer is required the Directory of Services (DOS) system should be utilised to ascertain local bed availability within the local ODN. Telephone numbers for each critical care unit can be found in the demographic details, to enable direct contact with units to confirm availability.

https://nww.pathwaysdos.nhs.uk/app/controllers/login/login.php

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

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

4.1.4 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.

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

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

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

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

4.1.9 If an inter-hospital (capacity) transfer is required, it is recommended that such transfers take place within the Network if at all possible. All such transfers should be recorded as a critical incident by the transferring hospital.

5.0 INTER-HOSPITAL TRANSPORT CONSIDERATIONS

5.1 For the majority of inter-hospital transfers, road ambulance is the most appropriate mode of transport. Road transportation 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. NWAS 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 'P1' transfer will be required. Appendix 2 provides details for selection of appropriate NWAS transportation.
Further up to date information is available at:
https://www.nwas.nhs.uk/professionals/requesting-urgent-or-emergency-ambulance-transport-for-a-patient/how-to-request-an-ambulance/

5.2 Helicopter or fixed wing transfers should only be considered for longer journeys and when road access is difficult. Vibration, altitude and acceleration/deceleration forces 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.

NB. 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.

6.0 TRANSFER PERSONNEL

6.1 The ODNs recommend that critically ill patients should normally be accompanied by two suitably trained, experienced and professionally competent attendants during transfer, one of which should be a medical practitioner or other suitably competent healthcare professional such as Advanced Critical Care Practitioners (ACCPs). 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. ***NB. This will not be possible for air transfers*.** More details about transfer teams can be found in Appendix 2, 3 and 4.

6.2 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.

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

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

6.3.2 Specific risks related to the patient's condition.

6.3.3 Risks related to movement /transfer.

6.3.4 Likelihood of deterioration during transfer.

6.3.5 Potential for requiring additional monitoring/intervention/treatment.

6.3.6 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.

6.4 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.

6.5 All personnel involved in transferring patients should have appropriate knowledge and skills in the transfer of critically ill patients and assessed as competent.

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

7.0 PREPARING FOR SAFE TRANSFER

7.1 Prior to transfer whether an intra or inter-hospital 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.

7.2 Prior to departure, escorting staff should ensure they check and have available appropriate transfer bag, documentation and associated equipment. Use of checklists should be the norm for all transfers.

7.3 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.

7.4 The airway should be assessed, and if applicable endotracheal tubes should be secured and protected. Comatose and burns/smoke inhalation patients pose a particular risk from airway obstruction developing during transport and so careful consideration must be given to intubation prior to setting off.

NB. Significant swelling will occur in major burns 6 -12 hours after injury; therefore it is recommended that inserted ET tubes should be the largest possible and should not be cut. A NG tube should also be inserted early to avoid potential later difficulties.

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

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

7.7 Inspired oxygen should be guided by oxygen saturation and ventilation by end tidal carbon dioxide monitoring ($EtCO_2$) with a trace displayed on the transport monitor.

7.8 Where a pneumothorax is present or suspected, chest drains should be inserted prior to departure as part of meticulous resuscitation and management of risk/complications during transport[1].

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

7.10 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.

7.11 A naso*/oro-gastric tube and urinary catheter should be passed and on free drainage unless there is a clear clinical indication not to do so.

**NB: Should be avoided in head injury patients*

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

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

7.14 A pre-departure checklist is recommended for use by escorting staff to help ensure that all preparations have been completed (appendix 5a).

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

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

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

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

8.0 MANAGEMENT DURING TRANSFER

The following chapters provide details related to recommendations that should be considered whether transfers are taking place within or between hospital sites.

8.1 The Ambulance

8.1.1 The Committee for European Standardisation[6] 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.

8.1.2 It is good practice to prepare critically ill patients for transfer before requesting transportation to ensure effective 'turn-around time'. The use of FERNO trolleys located on NW critical care units allows for timely patient preparation.

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

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

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

8.1.6 All equipment must be securely mounted/stowed on the FERNO trolley. Under no circumstances should equipment (e.g. syringe drivers) be placed unsecured on top of the patient trolley. This may become a dangerous projectile in the event of a sudden deceleration. Gas cylinders must be held in secure housings at all times. Monitors should be clearly visible by the transferring team from their seated position.

8.1.7 During ambulance transfers staff should remain seated at all times and wear available seat belts.

8.1.8 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 vehicle. The vehicle should be stopped in a safe place before administering treatment.

9.0 TRANSFER EQUIPMENT

9.1 The FERNO trolley, associated transfer equipment and medications, should be checked prior to departure; it is especially important that the escorting personnel are familiar with and competent in the operation of all equipment used in the transportation process.

NB: For inter-hospital transfers NWAS vehicles are well stocked with equipment to support transfer of the critically ill patient. Do not take unnecessary amounts of disposable equipment as space is limited within vehicles.

9.2 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.

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

9.4 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. For inter-hospital transfers all equipment should be checked for compatibility with the ambulance power supply.

9.5 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. CO_2 analysis including waveform display is mandatory for intubated patients, side stream technology is recommended.

9.6 Infusion pumps with the facility to run on battery, sufficient in number to allow delivery of essential medications and fluids. This equipment should be fully charged prior to departure and additional syringes of medications e.g. inotropes and sedatives should be carried to ensure timely exchange[7].

NB: Gravity dependent drips are recognised as unreliable for use in moving vehicles and should be avoided for inter-hospital transfers.

9.7 Daily checks of the FERNO trolley and 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 use.

10.0 MONITORING DURING TRANSFER

10.1 The standard of care, monitoring and documentation during transport, whether an intra or inter-hospital transfer should be at least as good as that at the referring hospital or base unit. The minimum standards for monitoring are:

- Continuous cardiac rhythm (ECG) monitoring
- Oxygen saturation (SaO_2)
- End tidal carbon dioxide (in ventilated patients)
- Temperature
- Respiratory rate
- Non-invasive blood pressure*

*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.

10.2 Central venous catheterisation is not essential but may be of value for the administration of inotropes and vasopressors.

10.3 In mechanically ventilated patients the oxygen supply, inspired oxygen concentration ventilator settings and airway pressure should be monitored and recorded on the appropriate documentation.

10.4 The recording of patient physiological parameters, treatments and clinical events during transportation must be recorded on the patients observation chart or on the Network Transfer form, depending on the type of transfer taking place.

11.0 DOCUMENTATION

11.1 A Network transfer form should be used for every level 2 or 3 inter-hospital critical care transfer. These forms are available from NW hospital critical care units and ED's. This form enables the NW ODNs to audit the safety/reasons for transfer, responses to treatments, physiological data and any untoward events. Local network transfer forms should be completed and copies returned to the appropriate ODN as instructed on the form.

NB: it is the responsibility of the transferring clinician from the referring hospital that all fields and required information are completed, and the form posted promptly to the appropriate Network office. Ideally an email should also be sent the same day to the Network Director, informing that a transfer has taken place.

11.2 All elements of the transfer form should be completed as accurately as possible.

11.3 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.

11.4 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. The use of formal structures to aid safe communication of information such as the SBAR (Situation-Background-Assessment-Recommendation) tool www.institute.nhs.uk/quality_and_service_improvement_tools or a Transfer Receiving Checklist such as in appendix 5b is recommended.

11.5 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, principles for patient confidentiality include:

- Medical notes and loose documentation not required during travel should ideally be placed in a sealed and clearly marked envelope or bag.
- A member of the transferring team should be identified to take responsibility for the transfer of the documentation.
- Local information governance policies should be in place to inform this process and outline procedures should any documentation go missing.

12.0 UNTOWARD INCIDENTS

12.1 Any untoward incidents that occur during transfer of patients should be reported by the transferring clinician on the Network transfer form (inter-hospital transfers) and also on the trust/critical care adverse incident system (intra and inter-hospital transfers). Occasionally an adverse incident associated with an inter-hospital transfer will manifest itself after the patient has arrived on the receiving unit; this should be recorded by the receiving clinician and reported to their own critical care ODN.

12.2 All critical incidents pertaining to critical care transfers, whether intra or inter-hospital, should be discussed at the Trusts Critical Care Delivery Group or equivalent, and the ODNs' Transfer forum with lessons learned shared to enhance best practice. Any remedial actions required should be recorded in an accompanying action plan.

13.0 TRANSFER AUDITS

13.1 For inter-hospital transfers a transfer form should be completed and returned to the trusts local critical care ODN for audit, which aims to measure the quality of inter-hospital transfers of critically ill patients. Transfer audit results will be shared and discussed at local and NW ODN meetings.

13.2 For intra-hospital transfers of critically ill patients these usually take place between wards areas and diagnostic areas, organisations should however have tools and processes in place to record the safe preparation and management of patients throughout the transfer which follows the principles within this document until the patient is returned back to their care area. Internal audits of transfer checklists and handover documents should be undertaken at regular intervals to ensure that quality and safety is maintained for these transfers. Appendix 2 and 3 provides guidance for these transfers.

14.0 MANAGEMENT OF 'OUTLIERS'

14.1 It is the responsibility of each critical care unit to monitor the outliers transferred due to capacity pressures. Information on patients expected to be repatriated should be conveyed and acted upon at unit/trust bed management forums/meetings.

14.2 The ethos of the ODNs is that the facilitation of repatriations should be undertaken as a priority, if clinically appropriate, and that timely repatriation of outlying patients' should be considered within local operational policies. Guidance related to the repatriation of critical care patients is available in appendix 6.

15.0 TRANSFERS FROM INDEPENDENT HOSPITALS INTO THE NHS

15.1 When the occasion arises that patient's being cared for in the Independent Sector (IS) requires emergency admission to a critical care unit within a network, policies for 'Emergency Transfer of Critically Ill Patients from the Independent to NHS Care'[10] should be referred to.

REFERENCES

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8. NW Emergency Transfer of Patients from an Independent to NHS Setting (2018).

Appendix 1

Summary of ICS Transfer Recommendations (2019)

1. Each Critical Care Network (ODN) should have a nominated lead for transfer whose responsibilities include the development and oversight of referral pathways, transfer protocols and associated quality assurance programmes.

2. All acute hospitals should nominate 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 Network Transfer Forums.

3. All acute hospitals must have systems and resources in place to resuscitate, stabilise and transport critically ill patients when required. Plans should encompass all critical care areas including intensive care and high dependency care areas, acute wards and emergency departments.

4. All acute provider trusts must have arrangements in place to ensure that transfers for capacity reasons alone (non-clinical transfers) occur only as a last resort. Where necessary transfer should be to the most appropriate hospital for the clinical needs of the patient, while taking account of bed availability, transfer distance, and designated transfer group.

5. Critical care networks and provider trusts should consider whether the development and use of dedicated transport teams would be appropriate to best meet the transfer needs of their patients.

6. All acute hospitals responsible for transferring critically ill patients must have access to a CEN compliant transfer trolley.

7. Critical Care Networks should liaise with local NHS Ambulance Provider Trusts to ensure the availability of suitable ambulances for critical care transfer and compatibly of mounting systems with transfer trolleys.

8. Critical Care Networks and providers trusts should agree a framework for prioritisation of inter-facility transfers and appropriate response times in keeping with the nationally agreed protocol.

9. All staff potentially involved in the transport of critically ill patients should have access to appropriate educational resources, receive training in transfer medicine and have the opportunity to gain experience in a supernumerary capacity.

10. All staff involved in transfers must be able to demonstrate the range of competencies appropriate to their role. Staff without the appropriate training and competencies should not undertake unsupervised transfers.

11. Critical Care Networks and provider trusts should consider the use of simulation training in their transfer training packages with a particular focus on the practical and technical aspects of transfer.

12. All monitoring and equipment must be suitable for use in the transfer environment and mounted on the transfer trolley in such a way as to be CEN compliant.

13. Equipment must be serviced, maintained and checked prior to use in such a way as to reduce the risks of failure during transfer.

14. Ideally all equipment within a critical care network should be standardised to enable the seamless transfer of patients without, for example, interruption of drug therapy or monitoring due to incompatibility of leads and transducers.

15. Standardised equipment lists and standardised transfer bags offer practical and safety advantages and should be considered by all Networks / Trusts.

16. Critical Care Network lead clinicians must ensure that adequate governance arrangements are in place across the network and that all patient transfers are subject to audit, critical incident reporting and review including analysis of feedback from patients and relatives.

17. All acute provider trusts should ensure that the movement of critically ill patients within hospitals (intra-hospital transfers) are subject to similar governance arrangements.

18. A mechanism for capturing the numbers of critical care transfers occurring nationally, indications, incidents and outcomes should be developed.

19. All acute provider trusts should use the Datix system (or equivalent) for reporting incidents occurring during critical care transfer. Reports should include 'critical care transfer' as an identifier to enable future data searching and analysis.

20. The decision to transfer and to accept a patient must be made by appropriate consultants in both the referring and receiving hospitals.

21. Transfer for immediate lifesaving interventions must not be delayed by lack of availability of a critical care bed.

22. Repatriation policies for patients who no longer require specialist care should be agreed across networks. Patients who require repatriation must be transferred within 48 hours of being identified as suitable for repatriation.

23. Patients and their relatives should be kept informed at all stages of the transfer process and should be provided with appropriate written information.

24. Where required, arrangements for air transport should be agreed with local NHS ambulance provider trusts, or air ambulance providers. Contact numbers should be available in all ICUs and emergency departments.

25. Prior to the transfer of a critically ill patient, a risk assessment should be undertaken and documented by a senior clinician to determine the level of anticipated risk during transfer. The outcome of the risk assessment should be used to determine the competencies of the staff required to accompany the patient during transfer.

26. 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.

27. Check lists should be used to help to ensure that all necessary preparations have been completed, prior to each stage of the transfer.

28. Minimum standards of monitoring must be applied in every case. Monitoring should be continuous throughout the transfer. All monitors, including ventilator displays and syringe drivers should be visible to accompanying staff.

29. A documented record of observations and events must be maintained.

30. Patients should be securely strapped to the transfer trolley by means of a 5-point harness (or similar). Reassurance, sedation, analgesia and anti-emetics should be provided as required to reduce patient discomfort and distress.

31. All portable equipment must be securely stowed to reduce the risk of injury in the event of an accident.

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

33. High speed journeys must be avoided except where clinically necessary. Blue lights and sirens may be used to aid passage through traffic to deliver a smooth journey.

34. Only staff with appropriate training and competencies should undertake aeromedical transfers. Minimum requirements include safety training, evacuation procedures for the aircraft, and basic on board communication skills (particularly for helicopters). More advanced training in aeromedical transfer is however desirable.

35. Critical Care Networks should develop standardised documentation for both interhospital and intra-hospital transport. This should include a core data set for audit purposes.

QUICK GUIDE

NHS
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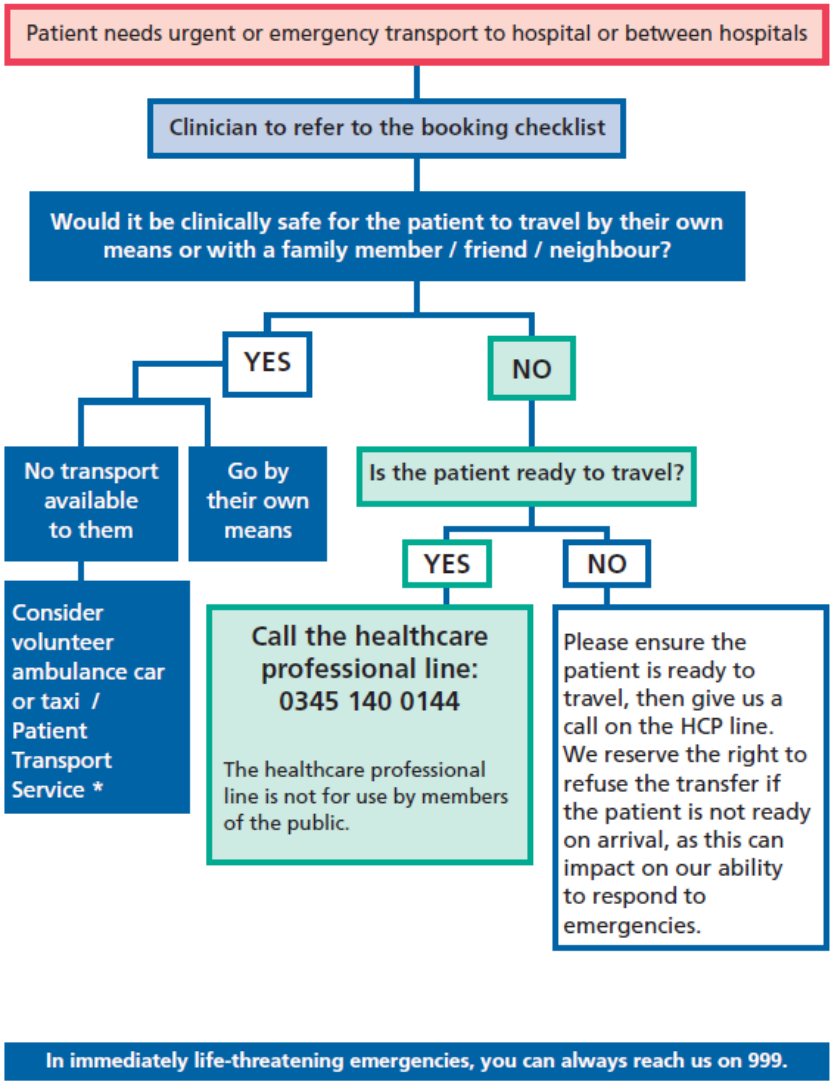
NHS Trust



In immediately life-threatening emergencies, you can always reach us on 999.

When you call the healthcare professional line, the questions we ask will collect the clinical information needed to determine the level of response required. There are four levels of response ranging from life-threatening emergency to non-urgent, which can be up to a four hour response time.

	Types of condition
Life-threatening emergency	Where immediately life-saving clinical interventions are needed from the ambulance service in addition to emergency transport to an appropriate emergency department or specialist receiving unit e.g. cardiac arrest, birth units requiring immediate assistance, acute severe or life-threatening asthma in an urgent care facility.
Emergency	Patients assessed as needing immediate clinical care in hospital in an emergency department or specialist receiving unit e.g. acute myocardial infarction, acute stroke, serious injury, sepsis, patients requiring limb-saving surgery.
Urgent *(non-blue light response)*	Patients assessed as requiring urgent admission or transfer with conditions that are not immediately life, limb or sight threatening e.g. urgent assessment by a specialist, urgent admission to hospital or investigations to inform on-going care, such as urgent CT or MRI.
Non-Urgent *(non-blue light response)*	Patients assessed as not urgent but require transport for ongoing care within a clinically appropriate time frame e.g. patients who are clinically stable in their current environment and are being transferred for elective or semi-elective procedures or investigations.

Who will transport your patient?

Paramedic	Registered healthcare professional, able to respond to full range of emergencies and assess patients. Trained in advanced life support including airway management skills. Can administer a wide range of drugs and qualified to drive under blue light conditions.
Emergency Medical Technician (EMT)	Able to respond to full range of emergencies, assess patients, identify patient deterioration and seek support from senior clinicians. Trained in basic life support and can deliver a shock using an AED. Able to administer range of drugs. Qualified to drive under blue light conditions.
Urgent Care Assistant	Can assess patients, identify patient deterioration and seek support from senior clinicians. Non-blue light transfers only.
*Patient Transport Service	**All PTS bookings are subject to an eligibility assessment.** Carry out 'on the day' or next day transfers, trained in basic life support, can identify patient deterioration and seek support from senior clinicians. Non-blue light transfers only. There is an online PTS portal where you can: manage direct booking of transport; update the time patients are ready for transportation; view booked activity and see if it has been allocated to a PTS resource; and access support for discharge and flow planning in those hospitals where it is in use. Email PTS.OnlineReferrals@nwas.nhs.uk to get access to the online booking system.

Visit www.nwas.nhs.uk/professionals for more information and to download a booking checklist.

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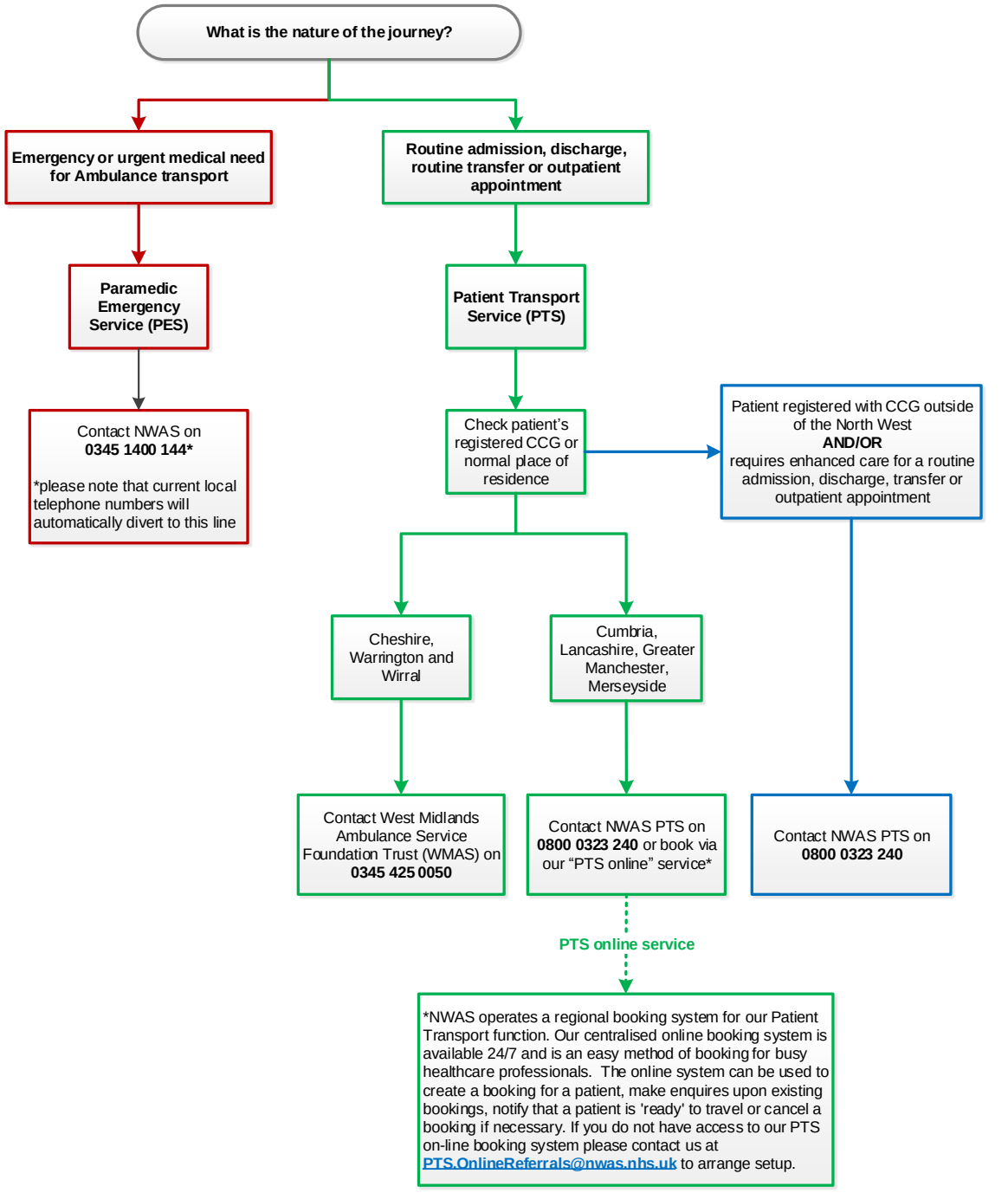
Ambulance transport - responsible provider flow chart

The decision regarding which service is applicable is based on the type of request and which Clinical Commissioning Group (CCG) the patient is registered with. This flow chart will assist you make a decision on which service the journey should be booked with and who are the responsible providers for that service.



https://www.nwas.nhs.uk/services/professionals/emergency-ambulance

Appendix 3

STAFF GUIDANCE FOR INTRA-HOSPTIAL TRANSFER OF PATIENTS

PATIENT	(Minimum) ACCOMPANYING PERSONNEL	SKILLS REQUIRED	ESSENTIAL EQUIPMENT
Level 0	Porter or HCA or Nurse	BLS	
***Level 0.5 (Elderly/Confused)**	Porter and HCA or Nurse	BLS	
Level 1	Suitably experienced Nurse/HCA and porter, appropriate to the needs of the patient	BLS and Gas Cylinder Training. Appropriate competency in: - Specific Drug Delivery - Recognition of Deterioration - Suction and Tracheostomy Care	- Oxygen - Suction (if Tracheostomy present) - Portable IV stand - Battery operated infusors - Pulse-Oximeter
Level 2	Nurse and Porter	All of above plus competency in: - Use of airway adjuncts - Use of bag and mask Appropriate competency in: - Use of defibrillator - Care of arterial catheter	All of the above plus: - HR and BP monitors - Defibrillator (transfers from Trauma Unit/Centre)
Level 3	Doctor, nurse and porter	All of the above plus competency in: - Management of the acutely ill patient, - ILS and/or ALS. - Advanced airway skills - Safe Transfer training competency/skills	Full ICU portable monitoring and transfer equipment

Adapted from LTHTR Patient Transfer Guidelines

NB. * Additional level in recognition of this group of patients, which require more additional transfer personnel.
Level 1, 2 and 3 patients should have personnel with appropriate skills with them <u>at all times</u> whilst away from the ward environment.
Level 0, Level 0.5 and Level 1 patients may be escorted by Pre Reg Nurses and/or Healthcare Assistants depending upon their level of competency/stage of training and the considered value of the learning opportunity. The purpose of this guideline is to ensure the safety and well-being of patients who are moved around the hospital.

Appendix 4

STAFF GUIDANCE FOR INTER-HOSPITAL TRANSFER OF PATIENTS

PATIENT	(Minimum) ACCOMPANYING PERSONNEL	SKILLS REQUIRED	ESSENTIAL EQUIPMENT
Level 0	Ambulance crew only	BLS	
***Level 0.5**	Ambulance crew and HCA	BLS	
Level 1	Nurse and EMT-1** Crew	BLS and Gas Cylinder Training Appropriate competency in: - Specific Drug Delivery - Recognition of Deterioration - Suction and Tracheostomy Care	- Oxygen - Suction (if Trachy) - Portable IV stand - Battery operated infusors - Pulse-Oximeter
Level 2	Doctor, Nurse and EMT-1** Crew	All of above plus competency in: - Use of airway adjuncts - Use of bag and mask - Use of defibrillator (Trauma staff) - Care of arterial catheter (Trauma staff)	All of the above plus: - HR and BP monitors - Defibrillator (transfers from Trauma Units/Centre)
Level 3	Doctor and Nurse/ODA and EMT-1** Crew	All of above plus competency in: - ILS and/or ALS - Endotracheal intubation - Management of critically ill patient - Safe Transfer training competency/skills	Full ICU portable monitoring and transfer equipment. ODN Transfer Form

Adapted from LTHTR Patient Transfer Guidelines

These guidelines are not completely inclusive.

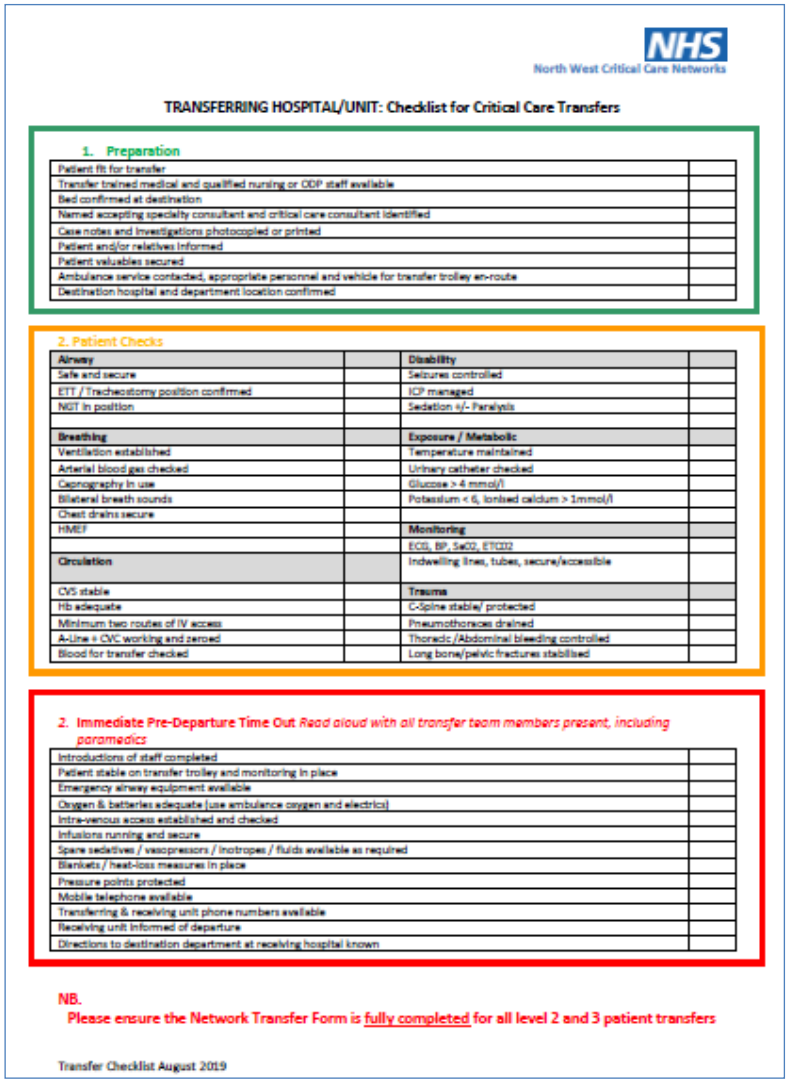
NB - Level 1, 2 and 3 patients should have personnel with appropriate skills with them <u>at all times</u> whilst away from their ward. The highest single factor present denotes the level the patient is in.

Level 0, Level 0.5 and Level 1 patients may be escorted by Student Nurses and/or Healthcare Assistants depending upon their level of competency/stage of training and the considered value of the learning opportunity.

****Request this level of crew at the time of booking with NWAS – this will assist with allocation of an appropriate Ambulance resource.**

Appendix 5a

INTER-HOSPITAL CRITICAL CARE TRANSFER CHECKLIST



NHS
North West Critical Care Networks

TRANSFERRING HOSPITAL/UNIT: Checklist for Critical Care Transfers

1. Preparation

Patient fit for transfer	
Transfer trained medical and qualified nursing or ODP staff available	
Bed confirmed at destination	
Named accepting specialty 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 and vehicle for transfer trolley en-route	
Destination hospital and department location confirmed	

2. Patient Checks

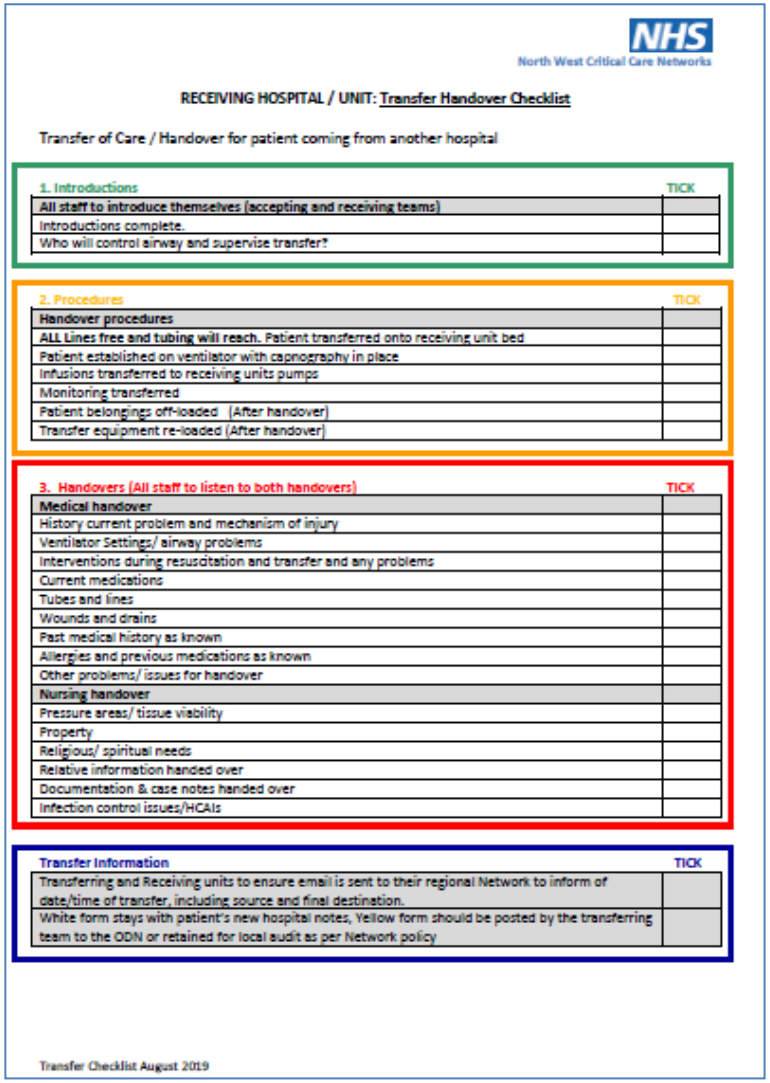
Airway		**Disability**	
Safe and secure		Seizures controlled	
ETT / Tracheostomy position confirmed		ICP managed	
NGT in position		Sedation +/- Paralysis	
Breathing		**Exposure / Metabolic**	
Ventilation established		Temperature maintained	
Arterial blood gas checked		Urinary catheter checked	
Capnography in use		Glucose > 4 mmol/l	
Bilateral breath sounds		Potassium < 6, ionised calcium > 1mmol/l	
Chest drains secure			
HMEF		**Monitoring**	
		ECG, BP, SaO2, ETCO2	
Circulation		Indwelling lines, tubes, secure/accessible	
CVS stable		**Trauma**	
Hb adequate		C-Spine stable/ protected	
Minimum two routes of IV access		Pneumothoraces drained	
A-Line + CVC working and zeroed		Thoracic /Abdominal bleeding controlled	
Blood for transfer checked		Long bone/pelvic fractures stabilised	

2. 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 and 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	
Mobile telephone available	
Transferring & receiving unit phone numbers available	
Receiving unit informed of departure	
Directions to destination department at receiving hospital known	

NB.
Please ensure the Network Transfer Form is fully completed for all level 2 and 3 patient transfers

Transfer Checklist August 2019



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RECEIVING HOSPITAL / UNIT: Transfer Handover Checklist

Transfer of Care / Handover for patient coming from another hospital

1. Introductions	TICK
All staff to introduce themselves (accepting and receiving teams)	
Introductions complete.	
Who will control airway and supervise transfer?	

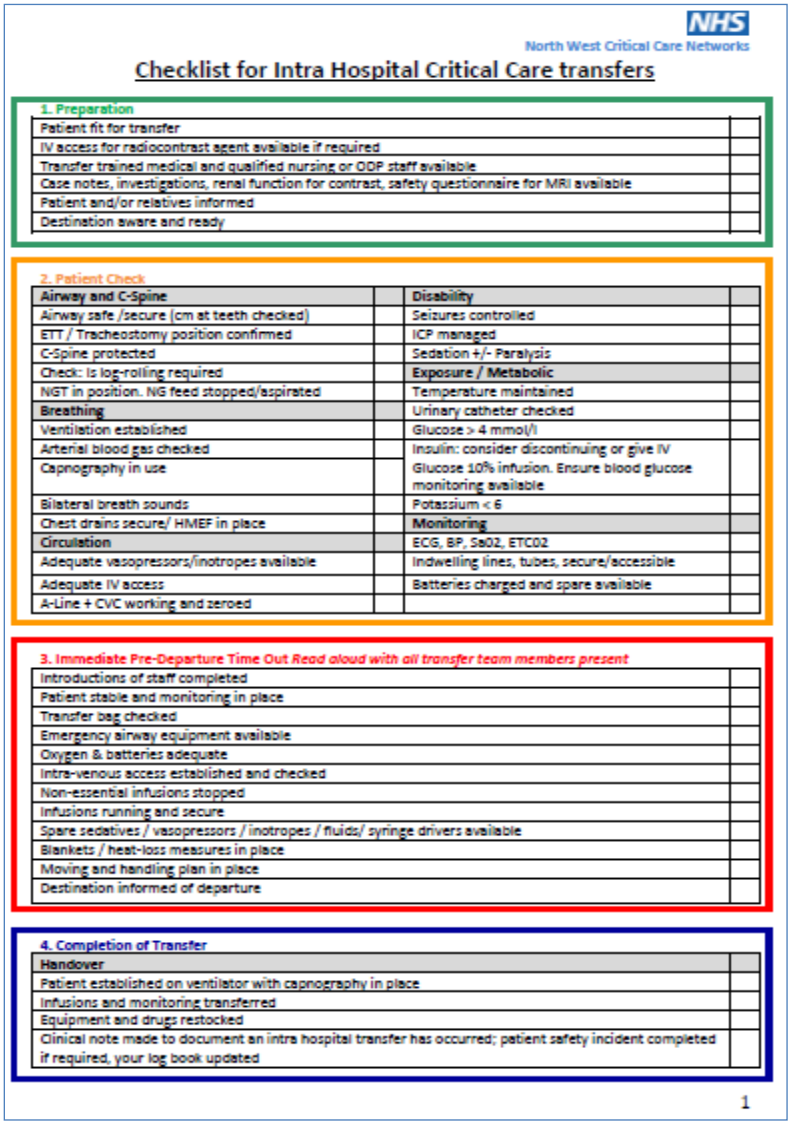
2. Procedures	TICK
Handover procedures	
ALL Lines free and tubing will reach. Patient transferred onto receiving unit bed	
Patient established on ventilator with capnography in place	
Infusions transferred to receiving units pumps	
Monitoring transferred	
Patient belongings off-loaded (After handover)	
Transfer equipment re-loaded (After handover)	

3. Handovers (All staff to listen to both handovers)	TICK
Medical handover	
History current problem and mechanism of injury	
Ventilator Settings/ airway problems	
Interventions during resuscitation and transfer and any problems	
Current medications	
Tubes and lines	
Wounds and drains	
Past medical history as known	
Allergies and previous medications as known	
Other problems/ issues for handover	
Nursing handover	
Pressure areas/ tissue viability	
Property	
Religious/ spiritual needs	
Relative information handed over	
Documentation & case notes handed over	
Infection control issues/HCAIs	

Transfer Information	TICK
Transferring and Receiving units to ensure email is sent to their regional Network to inform of date/time of transfer, including source and final destination.	
White form stays with patient's new hospital notes, Yellow form should be posted by the transferring team to the ODN or retained for local audit as per Network policy	

Transfer Checklist August 2019

INTRA – HOSPITAL TRANSFER CHECKLIST



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Checklist for Intra Hospital Critical Care transfers

1. Preparation

Patient fit for transfer	
IV access for radiocontrast agent available if required	
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	
Chest drains secure/ HMEF in place		**Monitoring**	
Circulation		ECG, BP, Sa02, ETC02	
Adequate vasopressors/inotropes available		Indwelling lines, tubes, secure/accessible	
Adequate IV access		Batteries charged and spare available	
A-Line + CVC working and zeroed			

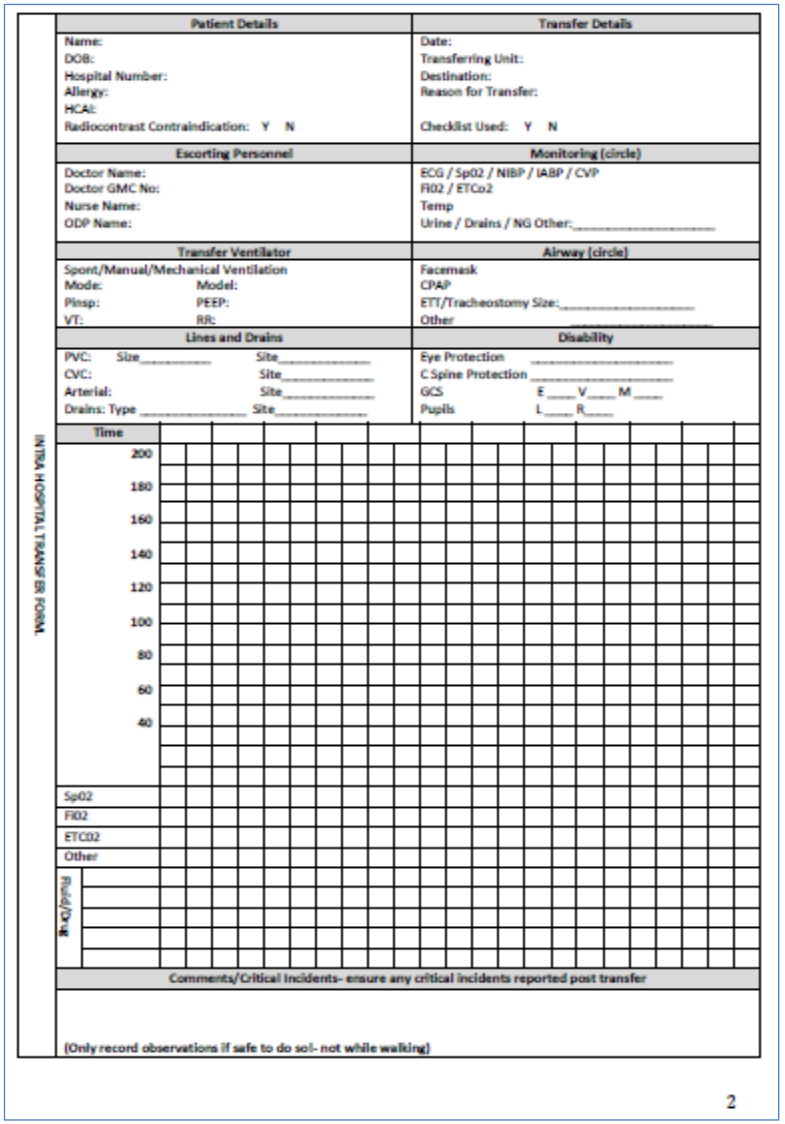
3. Immediate Pre-Departure Time Out *Read aloud with all transfer team members present*

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	

1



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 (circle)**
Doctor Name: Doctor GMC No: Nurse Name: ODP Name:	ECG / Sp02 / NIBP / IABP / CVP FI02 / ETCo2 Temp Urine / Drains / NG Other:_____
Transfer Ventilator	**Airway (circle)**
Spont/Manual/Mechanical Ventilation Mode: Model: Pinsp: 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
Sp02									
FI02									
ETC02									
Other									
Pulse/BP/RR									

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

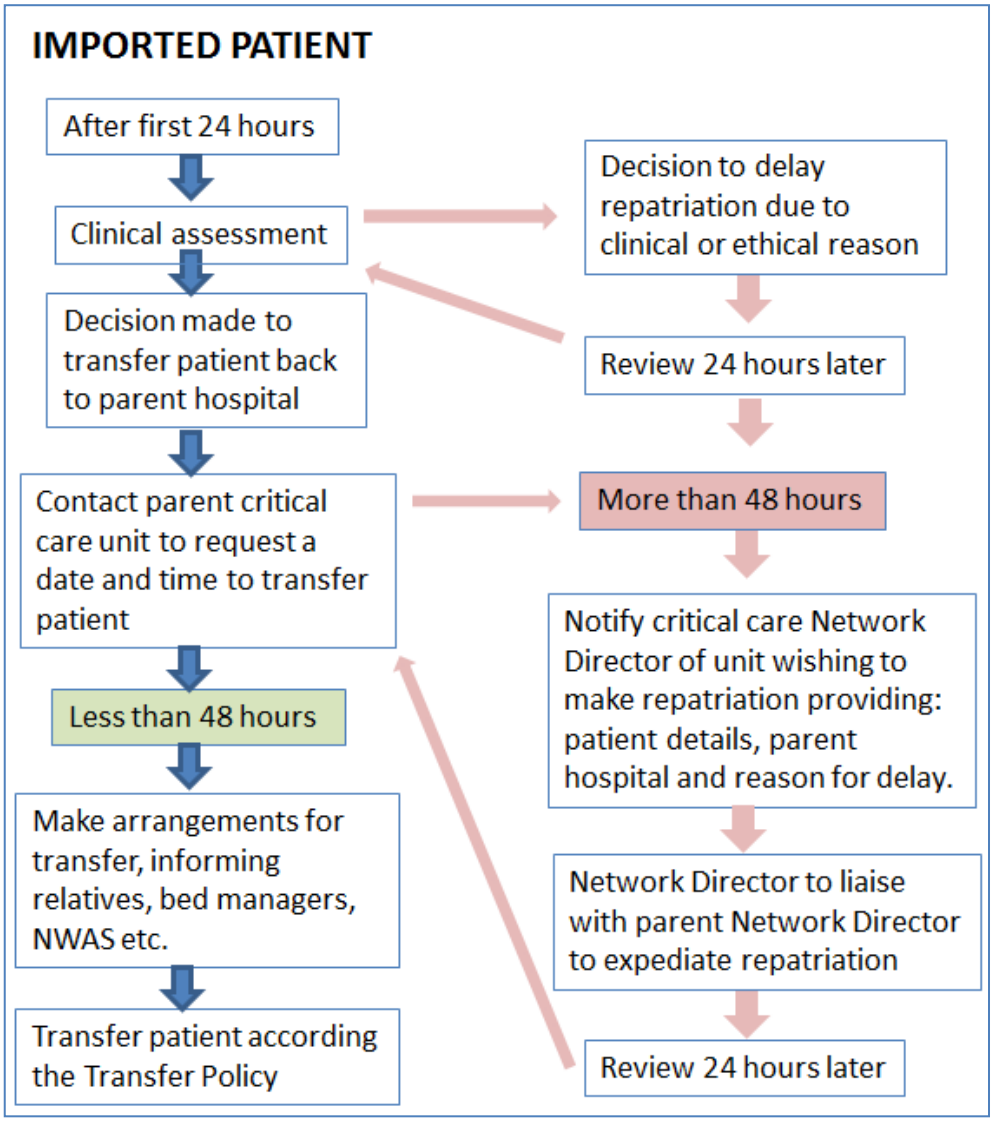
(Only record observations if safe to do so!- not while walking)

2

Appendix 6

Repatriations of Out of Network Critical Care Patients

The aim of the following process is to help address the current situation of delayed critical care repatriations specifically between Critical Care Units in the North West.



Northwest Critical Care Network Directors:

- Cheshire & Mersey: Sarah Clarke, Tel: 0151 55 63258 or 0151 55 63260
- Greater Manchester: Victoria Parr, Tel: 0161 876 1506
- Lancashire & S Cumbria: Andrea Baldwin, Tel: 01772 524430

Definitions

- **An Imported Patient** – is a patient that has been transferred from one Network into a Critical Care bed within another.
- **The Host Hospital** – is the hospital from which the patient was originally transferred.
- **A delayed repatriation** – is a patient that has been recognised as being clinically stable enough to be transferred back to his/her host hospital, the host hospital has been requested to make arrangements to receive the patient and a period of time in excess of 48hours has lapsed since both the above were actioned.

Appendix 7

NW NHS TRUSTS

Critical Care Units are provided by the following trusts and may reside on more than one hospital site:-

	Acute Trusts
1.	Aintree Hospitals NHS Trust
2.	Blackpool Teaching Hospitals NHS Foundation Trust
3.	Manchester University NHS Foundation Trust incorporating: Manchester Royal Infirmary, Royal Manchester Children's hospital and Wythenshawe hospital
4.	Countess of Chester Hospital NHS Foundation Trust
5.	East Cheshire NHS Trust
6.	East Lancashire Teaching Hospitals NHS Trust
7.	Lancashire Teaching Hospitals NHS Foundation Trust
8.	Liverpool Heart and Chest Hospital NHS Trust
9.	Liverpool Women's NHS Foundation Trust
10.	Mid Cheshire Hospitals NHS Trust
11.	North Cheshire Hospitals NHS Trust
12.	Royal Bolton Hospital NHS Trust
13.	Royal Liverpool and Broadgreen University Hospitals NHS Trust
14.	Northern Care Alliance NHS Group incorporating: Salford Royal Hospital, Royal Oldham Hospital, North Manchester General Hospital, Bury & Rochdale
15.	Southport and Ormskirk Hospital NHS Trust
16.	St Helens & Knowsley Hospitals NHS Trust
17.	Stockport NHS Foundation Trust
18.	Tameside And Glossop Integrated Care NHS Foundation Trust
19.	The Christie Hospital Foundation NHS Trust
20.	The Walton Centre for Neurology and Neurosurgery NHS Trust
21.	University Hospitals of Morecambe Bay NHS Foundation Trust
22.	Wirral Hospitals NHS Trust
23.	Wrightington Wigan and Leigh NHS Trust
24.	
25.	

Appendix 8

USEFUL CONTACTS

Bed Capacity Information	
Directory of Services – Critical Care Capacity Grid (logon & view)	www.pathwaysdos.nhs.uk
Directory of Services - Queries/Issues	Tel: 0113 397 3030 National Email: PathwaysOperations@hscic.gov.uk NW Email: Jacqueline.Morgan@nwas.nhs.uk
Operational Delivery Networks & SCITT Programme Enquiries	
Cheshire & Mersey Critical Care Network (CMCCN)	Office: 0151 556 3260 CCN.Transfer@cmft.nhs.uk
Greater Manchester Critical Care Network (GMCCN)	Office: 0161 876 1506/1500
Lancashire & S Cumbria Critical Care Network (LSCCCN)	Office: 01772 524475 LSCCriticalCareNetwork@lthtr.nhs.uk
NWAS Interfaculty Issues	
Email: **inter-facility.transfers@nwas.nhs.uk**	

Prepared by Lancashire and South Cumbria Critical Care Network for the NW Critical Care & Major Trauma ODNs

Preston Business Centre, Room 173
Watling Street Road,
Fulwood, Preston,
Lancashire PR2 8DY

Tel: 01772 524475 or 524471