Intensive Care Society

Guidance On:

Transfer Of The Critically Ill Maternity Patient

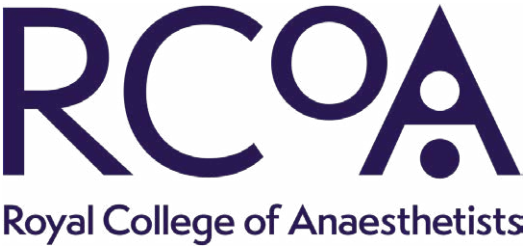
A Supplementary Resource Of The Transfer Of The Critically Ill Adult, 5th Edition.

Endorsing organisations

Association of Anaesthetists

The Faculty of Intensive Care Medicine

MOMS MacDonald Obstetric Medicine Society



Royal College of Obstetricians & Gynaecologists

Contents

Publication Date: 22 April 2026

For comments or feedback on this document, please contact **guidelines@ics.ac.uk**

1. Acknowledgements

Leading Authors

Steve Cantellow (Chair)	Consultant Intensivist and Head of Clinical Services, Emergency and Acute Care, Nottingham University Hospitals NHS Trust Maternity Lead, East Midlands Critical Care Network
Richard Browne	Consultant in Intensive Care Medicine, University Hospitals Birmingham NHS Foundation Trust Clinical Director, ACCOTS Transfer Service Joint Medical Lead, West Midlands Critical Care Network
Scott Grier	Consultant in Intensive Care Medicine, North Bristol NHS Trust Clinical Director, Retrieve Adult Critical Care Transfer Service

Transfer of the Critically Ill Maternity Patient: Guidance Development Group

Guidance Development Group member roles and affiliations reflect those held during the period of guideline development

Anita Banerjee	Obstetric Physician Guy's and St Thomas' NHS Foundation Trust Secretary (2020 – 2023) MacDonald Obstetric Medicine Society
Jon Birks (Deputy Chair)	Consultant in Prehospital Emergency Medicine Emergency Medical Retrieval Transfer Service, Wales Consultant Anaesthetist Northampton General Hospital NHS Trust
Chriss Doyle	Midwife and Advanced Practitioner North Cumbria Integrated Care HEMS Paramedic Scotland’s Charity Air Ambulance
Abigail Ford	Consultant in Intensive Care Medicine University Hospitals Birmingham NHS Foundation Trust

Jane Gill	Consultant Neonatologist University Hospitals of Leicester NHS Trust
Catherine Gledhill	Critical Care Outreach Sister Leeds Teaching Hospitals NHS Trust
Ken Hodson	Consultant Obstetrician The Newcastle upon Tyne Hospitals NHS Foundation Trust
Hayley Knowles	Adult Intensive Care Sister and Quality Improvement Lead Nottingham University Hospitals NHS Trust
Nuala Lucas	Consultant in Obstetric Anaesthesia London North West University Healthcare NHS Trust President Obstetric Anaesthetists' Association
Camella Main	Lead Midwife – Prehospital Maternity Care London Ambulance Service NHS Trust
Thomas McEwan (Deputy Chair)	Midwife and Honorary Advanced Neonatal Nurse Practitioner NHS Greater Glasgow and Clyde Principal Educator and SMMDP Strategic Lead NHS Education for Scotland
Aarthi Mohan	Consultant Obstetrician University Hospitals Bristol NHS Foundation Trust
Stacey Robinson	Practice Lead Midwife London Ambulance Service NHS Trust
Caroline Sampson	Consultant Intensivist (ECMO) University Hospitals of Leicester NHS Trust
Rocio Santamaria	Consultant in Emergency Medicine Guy's and St Thomas' NHS Foundation Trust
Tammy Smith	Senior Operating Department Practitioner Northampton General Hospital NHS Trust
Anna Stout	Specialty Registrar in Anaesthesia and Intensive Care Medicine NHS Lothian

Joanne Thompson Lead Nurse, Adult Critical Care and CCOT
Nottingham University Hospitals NHS Trust

Charlie Wood Specialist Paramedic in Critical Care and Maternity and Newborn Care Lead
Yorkshire Ambulance Service NHS Trust

Transfer of the Critically Ill Maternity Patient, External Advisors

Nicholas Barrett Consultant Intensivist
Guy's and St Thomas' NHS Foundation Trust

Alison Blair Consultant Anaesthetist
Southern Health and Social Care Trust

Katie Cranfield Consultant Intensivist and Obstetric Physician
The Newcastle upon Tyne Hospitals NHS Foundation Trust

Paul Dean Consultant Intensivist
East Lancashire Hospitals NHS Trust

Honorary Treasurer
Intensive Care Society

Hayley Kemp Consultant Anaesthetist and Intensivist
Harrogate and District NHS Foundation Trust

Fiona Gibb Director, Professional Midwifery
Royal College of Midwives

Steve Magee Consultant Paramedic and Regional Clinical Lead
Welsh Ambulance Services University NHS Trust

Lucy MacKillop Consultant Obstetric Physician
Oxford University Hospitals NHS Foundation Trust

President
MacDonald Obstetric Medicine Society

Deborah Horner Consultant Anaesthetist and Intensivist, Deputy Chief Medical Officer
Bradford Teaching Hospitals NHS Foundation Trust

Sarah Ledger Head of Research and Development
Baby Lifeline – The Mother and Baby Charity

Yavor Metodiev
Consultant Anaesthetist
Cardiff and Vale University Health Board

Jennifer Service
Consultant Anaesthetist and Intensivist
NHS Lothian

Hassan Shehata
Consultant Obstetrician and Maternal Medicine Specialist
Epsom and St Helier University Hospitals NHS Trust

Senior and Global Health Vice President
Royal College of Obstetricians and Gynaecologists

Ian Scudamore
Consultant Obstetrician
University Hospitals of Leicester NHS Trust

Vice President for Education
Royal College of Obstetricians and Gynaecologists

Tim Wenham
Consultant Anaesthetist and Intensivist
Barnsley Hospital NHS Foundation Trust

Chair, Standards Guidelines Committee, Intensive Care Society

Arlene Wise
Consultant Anaesthetist
NHS Lothian

Chair
Scottish Maternal Critical Care Network

2. Background

2.1. Principles governing transfer of the critically ill maternity patient share much in common with transfer of the general adult patient, but with some important additional considerations. This supplement assumes the broader guidance in the 'Guidance on Transfer of the Critically Ill Adult' as its foundation, on which to build and tailor considerations that are specific to the maternity population – where guidance does not differ, it has not been restated. Additional specialist clinical considerations may arise, such as the pregnant patient requiring neurocritical care interventions. Such combinations are out of scope for this document. Recognising the diverse terminology for individuals during and following pregnancy, this supplement uses 'maternity patient' as an inclusive term, while 'pregnant patient' and 'recently pregnant patient' specifically address each respective stage.

2.2. The guidance in this supplement applies to critically ill maternity patients from 20 weeks' gestation through to six weeks' postpartum, although many of the principles described are relevant to earlier gestations. It may be applied to interfacility, inter-site, as well as intra-hospital transfers. Its intended readership includes the multidisciplinary team involved in transfer decision making (i.e., whether and when transfer is appropriate) as well as those involved in the conduct of the transfer itself.

2.3. Maternity patients may require interfacility transfer for obstetric, non-obstetric or fetal indications. Where a critical care admission is expected to exceed 48 hours, discussion with a regional or supra-regional centre experienced in maternal critical care may be beneficial to support decision-making[1, 2]. Those at under 28 weeks' gestation who may give birth should ideally be managed in a centre with a suitable neonatal intensive care unit (NICU)[3]. Data on the transfer of critically ill maternity patients are scarce. While interfacility transfer is relatively infrequent, intra-hospital and inter-site transfers are common as the critical care unit may not be co-located with maternity services.

2.4. Team members involved in transferring critically ill maternity patients should revisit the essentials of managing maternal critical illness[3]. They should familiarise themselves with this guidance and seek relevant education and training to improve their skills and knowledge. This supplement presents a five-stage process for the transfer of critically ill maternity patients. It outlines a multidisciplinary approach focused on sound decision making, effective communication, and preparation for potential complications.

3. The Five Stage Approach

3.1. In emergency scenarios, it may be necessary to work through stages simultaneously, and contact the transfer service as soon as possible.

3.2. Stage 1: Identify the need and urgency of transfer

3.2.1. Obstetric considerations:

- The pregnancy is complex and would usually be managed in a regional or specialist centre.

3.2.2. Non-obstetric considerations:

- A required treatment is not locally available.

3.2.3. Fetal considerations:

- Required neonatal services, such as NICU, are not locally available.

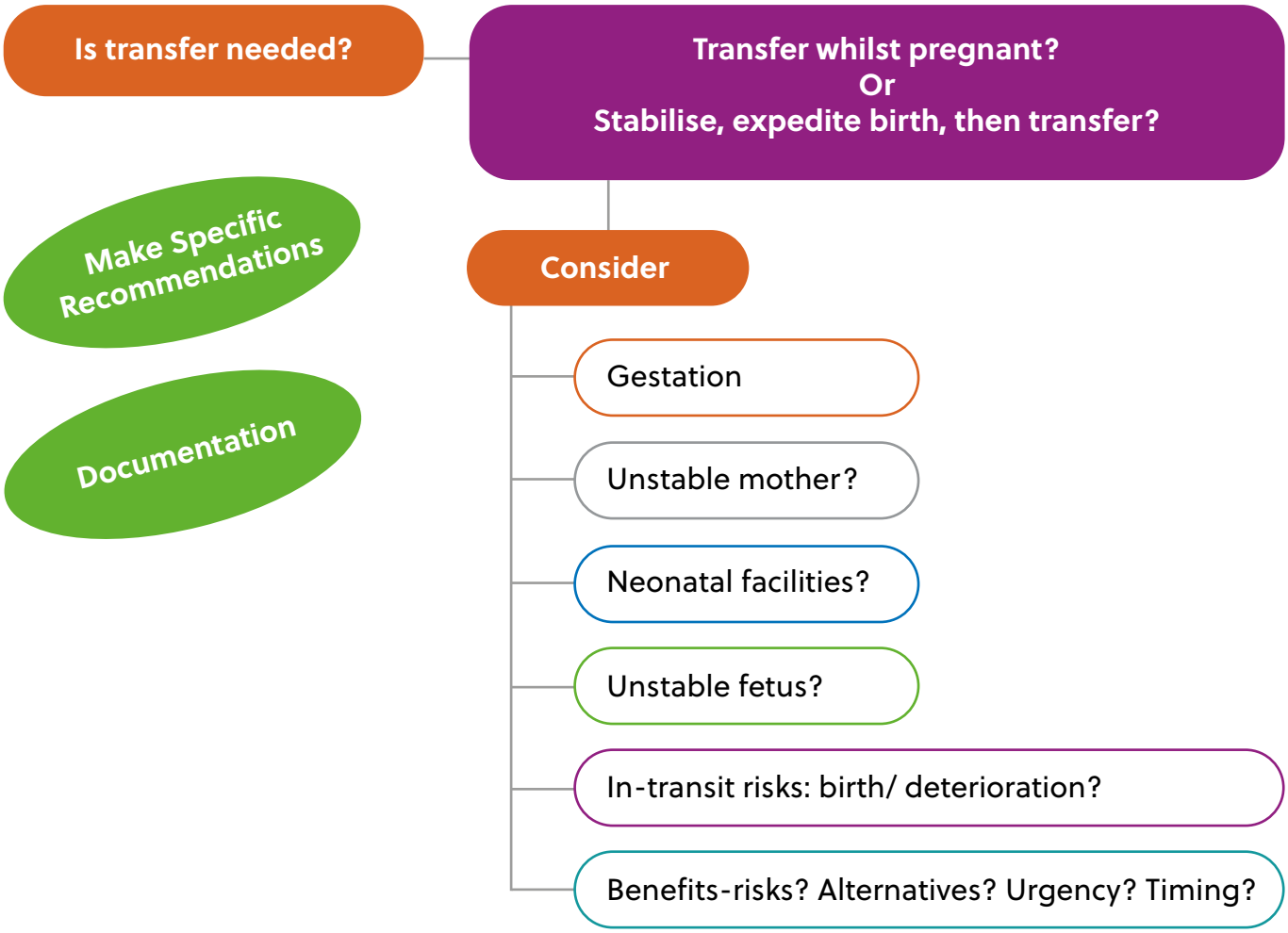
3.3. Stage 2: Involve the patient, birth partner and family

3.3.1. Involve the maternity patient and their family in discussions about care and address any concerns by considering reasonable modifications to the plan. Use translation services where necessary.

3.4. Stage 3: Multidisciplinary Team Review

3.4.1. The purpose of multidisciplinary team review is to evaluate and weigh the benefits and risks of transfer, as well as to identify any risk-mitigations and alternatives to transfer. The output of multidisciplinary review should include clear recommendations regarding proposed treatment, location, urgency, and timing of transfer. Any preconditions to be met prior to transfer (e.g., expedite birth), should also be stipulated.

The Transfer of the Critically Ill Maternity Patient - A Multidisciplinary Approach



3.4.2. Fig 1 – Infographic: MDT Decision Making

3.4.3. Convene a team (MDT) meeting, involving the relevant personnel from both sites:

- consultant obstetricians
- consultant obstetric physicians (if available)
- consultant obstetric anaesthetists
- senior midwives
- consultant intensivists
- senior critical care nurses/ critical care outreach nurses
- consultant neonatologists
- other consultant specialists.

3.4.4. Consider escalating to the regional maternal medicine network for input and advice, where available. Teleconferencing software for discussions is ideal. Ensure that all decisions made are clearly documented along with relevant basic obstetric information in a way that is easily accessible. (Fig 2)

3.4.5. Consider these key points:

a) Maternal resuscitation is the priority and should be continued while arranging the transfer. Decide if the balance of risks favours giving birth locally before transfer or to transfer while still pregnant.

b) Evaluate gestational age, estimated birth weight (if available), and NICU cot availability. If the neonate cannot be managed locally, assess the relative benefits of in-utero versus ex-utero transfer.

c) The multidisciplinary team should decide on the optimal timing of transfer.

d) Risks of transfer

- Maternal – deterioration of the underlying condition, labour/birth in transit, postpartum haemorrhage, separation from baby/family.
- Fetal – deterioration or in utero death, pre-term birth.

e) Alternatives to transfer

- Provide care locally with support from regional centre e.g., through scheduled calls with regional centre specialists using teleconferencing software.
- Expedite birth and admit to the local intensive care unit with a view to formal ICU-to-ICU transfer, and retrieval of the neonate to a NICU facility (balancing the risk of a postnatal transfer for the baby).
- Postpone transfer until physiological support requirements have improved.

3.5. Stage 4: Communicate with the transfer service and teams in the receiving centre

3.5.1. For regions without a designated Adult Critical Care Transfer Services (ACCS) in place, the phrase ‘transfer service’ in this section refers to the local transferring team. For extra corporeal membranous oxygenation (ECMO) retrievals, discussions shouldt involve the ECMO service and the obstetric team in the regional centre. Comprehensive handovers should take place, involving consultant-to-consultant discussions among obstetricians, neonatologists, obstetric anaesthetists, intensivists, and relevant organ specialists, as well as a senior midwifery handover. Acknowledging the psychological impact of birth trauma and critical illness on the maternity patient and birth partner, ensure that any such concerns are also communicated.

3.6. Stage 5: Manage the transfer

3.6.1. The transfer process involves preparation prior to departure, transit, arrival arrangements and handover after arrival. These considerations are outlined in Table 2. Suggested checklists for intra- and interhospital transfer of maternity patients are found in Appendices 1 and 2.

4. Transfer considerations for maternity patients

Table 2

Preparation Prior to Transfer
Before transfer, establish: • The necessity and urgency of the transfer and whether alternative options have been considered. • The suitability of the destination and treatment, such as NICU bed availability. • The transfer team's composition: in the absence of a designated Adult Critical Care Transfer Service, assemble the best available personnel, which may include calling in staff who are off-site. Additional personnel, including a midwife or obstetrician, should be considered where pre-transfer multidisciplinary assessment identifies a specific concern that birth or resuscitative hysterotomy may be required during transfer. Consider the skill of all present (e.g., paramedic or ambulance technician). • Consultant notification in all cases. • Accessibility of relevant guidelines and procedural aide memoires. • Pre-arranged roles for handling potential events occurring during transfer, together with designated single point of contact (usually transfer coordinator or critical care consultant) and access to appropriate resources such as Emergency Action Cards that include maternity-specific situations (Appendix 1). • The availability of additional drugs and kit (Fig 3).

Review the 7 Ps:

Positioning	Avoid aortocaval compression while ensuring that the patient is securely restrained. (see 'Positioning and Secure Transportation' below). Remain vigilant for delayed-onset supine hypotension.
Passenger	Fetal condition should be assessed prior to departure. Fetal distress should prompt maternal resuscitation and consideration of birth prior to transit (see Stage 2 above). If postpartum, establish condition of the newborn and plans for reuniting.
Partus (Birth)	An obstetrician should evaluate and reduce the risk of in-transit birth. Significant risk may warrant tocolysis and necessitate additional personnel on the transfer team (e.g., experienced midwife) and equipment (Fig 3). Analgesia management of unplanned labour in transit is rarely required, context-specific, and beyond this guidance's scope: skill mix, available analgesia options along with the practical and safety considerations of administration should guide preparation. Optimisation for pre-term birth may include steroids (<34 weeks) and magnesium (<30 weeks).
Postpartum haemorrhage (PPH)	Patients requiring ongoing management for PPH should not be transferred until deemed stable by an obstetrician. The transfer team should ensure that uterotonic drugs and tranexamic acid are available, labelling them clearly to avoid inadvertent administration. Use prefilled syringes whenever available.

Pre-eclampsia	Stabilise before departure and prepare antihypertensive infusions in advance. Be ready to obtund the pressor response to intubation (e.g. with rapid onset opioids). Be ready for eclampsia (magnesium sulphate).
Proximity	Should an adverse event occur (e.g., birth with PPH): are there any *appropriate* diversion options with stabilisation facilities?
Resuscitative hysterotomy (Perimortem section)	Resuscitative hysterotomy should ideally be performed as soon as possible in maternal cardiac arrest at over 20 weeks' gestation. This procedure may be undertaken by non-obstetric personnel with sufficient skills and understanding of the principles[4]. Ensure appropriate equipment is available (Fig 3).

Transit
Ensure maternal positioning is maintained (Table 3). Monitor for maternal deterioration and for signs of labour. Fetal monitoring is not undertaken in transit. Communicate with the transfer coordinator for advice and any appropriate mitigations such as diversion en route in the event of maternal deterioration or in-transit birth. Where needed, specialist obstetric input may also be sought to support ongoing management. Be considerate of maternal experience and psychological factors.
Arrival Arrangements and Handover
Prepare a clear and structured handover for the receiving teams. There should be rapid review by the obstetric team, including an assessment of fetal wellbeing. Ensure all relevant documentation is completed and shared. Conduct a debrief following handover of care to discuss any learning outcomes.

4.1. Positioning and secure transportation

4.1.1. Ensuring that pregnant patients are appropriately positioned and secure during transfer is a key consideration. Restraint with a harness is essential and must be used safely to reduce the risk of injury to the pregnant patient and transferring team when in transit. At the time of writing, critical care trolleys and harnesses have not been tested for their suitability with pregnant patients[5]. This presents a challenge, as positioning to relieve aortocaval compression is difficult to achieve with current equipment while maintaining secure restraint.

For example, full lateral decubitus position requires the omission of one or more shoulder straps – a configuration untested in crash scenarios. We expect industry to respond to this urgent need. In the meantime, we advocate a principles-based approach to ensure secure restraint and relief of aortocaval compression. These principles are presented in Table 3. Insights from ambulance crews are invaluable. A range of harnesses are available and familiarity with the specific system being used is important.

4.2. Positioning and secure transportation of the pregnant patient (>20/40 weeks)

Table 3

Principle	Notes
Use all straps	· Loosen horizontal chest straps to prevent breast compression. · Some cross-harness types eliminate the need for additional horizontal chest straps.
Lengthen straps as necessary	· Have a low threshold to use a bariatric harness where necessary.
Twist-release buckles should be positioned away from the bump	· Twist-release type buckles (harness-specific) are ideally positioned at the level of the symphysis pubis to avoid abdominal compression. 
Maternal haemodynamics should be closely monitored	· Monitor maternal heart rate and blood pressure regularly after positioning for transfer. · Continuous invasive arterial blood pressure monitoring in critically unwell pregnant patients is suggested for the early detection of haemodynamic changes.

Fetal condition should be assessed prior to departure	· Fetal condition should be assessed as being stable in the adopted maternal position prior to departure. This provides an opportunity to evaluate whether the following may be indicated:
	  · Repositioning
	  · Give advance warning to receiving centre
	  · Expedite birth prior to departure.

A sitting position is helpful	· A sitting position provides better restraint and can avoid the need for lateral tilt.  · At least 45 degrees head-up from the horizontal (Fowler's position) is suggested. Measure the inclination angle using a mobile app or other device if available.
Tilt the pelvis more than the thorax (unless spinal precautious are in place)	· Apply greater lateral tilt at the pelvis than the thorax for effective aortocaval compression relief, assuming no spinal precautions. · Keep the upper body relatively flat for optimal use of shoulder straps. · Left tilt is conventionally used but may result in the pregnant patient facing away from the transfer team - right tilt may be an alternative · Use wedges, pillows, or blankets for tilt, paying attention to pressure areas.
Full lateral decubitus position is not routinely recommended at present	· The lateral decubitus offers optimal relief for aortocaval compression but may not be possible with current shoulder restraints. · Emergencies requiring lateral positioning such as cord prolapse which should be managed before departure.
Manual displacement of the uterus is not recommended in transit	· This manoeuvre requires a team member to remain unrestrained, so it cannot be routinely recommended. · Having alerted the driver, the transfer team may be briefly unrestrained to perform this manoeuvre in an emergency while addressing factors compromising maternal haemodynamics.
Spinal precautions	· Use a vacuum mattress where available. · Use a scoop stretcher if a vacuum mattress is not available, limiting use to 45 minutes to prevent pressure injuries. · Secure the pregnant patient to either device with straps, then use trolley straps to secure both patient and device to the trolley. · Ensure correct placement of trolley shoulder straps – with a scoop stretcher this requires straps to be passed through the adjacent upper holes. · Place padding under the entire length of the device to achieve tilt of 15 – 30 degrees.

4.3. Education, review and planning

4.3.1. This is an important patient group that deserves special consideration. Educators should integrate this guidance into educational programs, recognising that this specialist supplement relies on the principles detailed in 'The Transfer of the Critically Ill Adult', and assumes a broader understanding of managing critical illness.

4.3.2. Once transfer has been completed, the value of continuous learning through multidisciplinary case review cannot be overemphasised. Where things have not gone according to plan or there are poor maternal or neonatal outcomes it is important to ensure that staff receive appropriate support.

4.3.3. To improve outcomes, it is essential to foster close collaboration between transfer services, critical care units, maternity units, and neonatal units within each respective region, and ensuring that supportive escalation pathways are established. Centres offering transfer courses can play an important role by incorporating the guidance provided in this guideline into their programs[1].

4.3.4. Additionally, when planning any changes to patient pathways and services, including their relocation, a thorough assessment of the impact on deteriorating maternity patients and the need for transfer should be conducted. Careful consideration of associated risks is paramount to protect patients, including avoiding unnecessary separation from the newborn.

4.3.5. Through committing to education, comprehensive review, and thoughtful planning we can build a solid platform and context in which this guideline can operate effectively for the benefit of all maternity patients.

5. MDT documentation for maternal critical care transfer

Figure 2

Category	Data Elements
Referring Centre Information and Advisory Centre Information	Centre Name | Designated Contact Person | Contact Details | MDT Attendance
Medical and Obstetric History	Blood Group/Rh | Parity | Previous Delivery Modes | Previous Obstetric Diagnoses | Medical Diagnoses
Current Pregnancy Details	Gestation | Singleton Pregnancy? | Placental Site | Fetal Growth/ Condition | Current Obstetric Diagnoses | Birth Partner/ NOK)
Postpartum Status	Birth Date | Birth Time | Mode of Delivery | Mode of Anaesthesia for Delivery | Estimated Blood Loss | Significant Events | Newborn Location | Newborn Current Condition
Current Illness and Trajectory	Critical Care Admission Date | Critical Care Diagnoses | Description of Deterioration | 24 Hour Trajectory
Organ Support Requirements	Airway Type | Difficult Airway? | FiO2 | Ventilator Settings | Cardiovascular Support | Sedation | Renal Replacement Therapy | Other Support
Transfer Considerations	Proposed Benefits | Risks and Risk Mitigations | Alternatives to Transfer
MDT Outcome	Recommendations | Transfer Preconditions

6. Drugs and equipment for maternal critical care transfer

Figure 3

6.1 Drugs

This section is intended to support transfer preparation and does not constitute prescribing guidance. Drug formulations may vary between organisations. Clinical management may be guided by the relevant Emergency Action Cards. Medicines safety practices must be followed, including independent checking and clear labelling of drugs prior to administration. **Wrong drug or wrong route administration may cause serious harm in maternity patients.**

Postpartum haemorrhage
Oxytocin (from fridge): 2 x 5IU for slow bolus administration (or carbetocin 100 micrograms for slow bolus administration)
Oxytocin (from fridge): 40IU for infusion
Ergometrine (from fridge): 2 x 250 microgram ampoules (**exclude** in pre-eclampsia)
Carboprost (from fridge): 8 x 250 microgram ampoules (note intramuscular route)
Misoprostol: 3 x 200 microgram tablets
Tranexamic acid: 1g
Pre-eclampsia
Antihypertensives:
Labetolol 100mg (5mg/mL concentration) for infusion x 4 or
Hydralazine 20mg for infusion x 4
(conversely, be prepared to manage hypotension)
Eclampsia and eclampsia prevention:
Magnesium Sulphate 16mmol (4g) x 2
Magnesium Sulphate 40mmol (10g) for infusion
Magnesium toxicity:
10% Calcium gluconate (or chloride) 10mL

Suggested Equipment:

Resuscitative hysterotomy (perimortem caesarean section)
Surgical gloves
Skin prep solution
Scalpel
Bandage and 'tough cut' scissors
3 x Cord clamps (or Spencer Wells forceps)
Large Swabs for packing
Neonatal resuscitation (if team member is appropriately trained and competent)
Cord clamps x 3
Cord scissors
Neonatal bag and mask
Neonatal supraglottic airway
Towels x 4
Hat
Infant warming mattress (TransWarmer© or similar)

7. Appendices

Appendix 1. Examples of intra-hospital transfer checklists

The following examples have adopted different methods of confirming patient preparation and then subsequent readiness for departure.

Preparation checklist

		CHECKED?	Additions for Maternity Patients	CHECKED?
Team	**IS PATIENT PREGNANT or RECENTLY PREGNANT? If YES, see Additions for Maternity Patients.**			
	Risk assessment completed?		Confirm transfer urgency established by MDT.	
			Ensure obstetric risk assessment completed (e.g., antepartum - fetal condition; postpartum – PPH), and any preconditions met (e.g., delivery).	
	Escorting team identified and available 20-30 minutes prior to departure time?		Anticipate challenges specific to maternity patients (e.g., pre-eclampsia, need for delivery or resuscitative hysterotomy in transit, postpartum haemorrhage, newborn resuscitation).	
			Evaluate transfer team composition: standard critical care team or additional members needed from maternity team?	
Airway/ Breathing	ETT / tracheostomy secure?		For unintubated patients consider pregnancy-related risks: follow OAA-DASS guidance; administer a proton pump inhibitor; ensure availability of a short-handled or video laryngoscope and a smaller endotracheal tube.	
	Tracheostomy spares (inner cannula, brushes, humidification, speaking valve, spare tube)			
	Lung protective ventilation		PaO2 > 9 kPa PaCO2 4-4.5 kPa (lung protective ventilation strategies take precedence).	
	Oxygen calculation (use QR code) Litres required = (MV + bias) x 2 (minutes duration of transfer) Bias: Oxylog 3000 0.5LPM; Hamilton T1/MR1 3LPM			

		CHECKED?	Additions for Maternity Patients	CHECKED?
Circulation	IV access (minimum x2) secure?		Consider large bore IV access.	
			Avoid aortocaval compression in preparation for and during transfer.	
			Hemodynamic instability - consider concealed hemorrhage.	
	Arterial line inserted and transduced (do not delay immediate imaging for this)		Consider fetal heart monitoring before and after transfer.	
Neuro	Neuroprotection optimised? What is the starting ICP?		Prevent hypertension, particularly in preeclamptic patients, due to elevated risk of haemorrhagic stroke.	
	Does patient require additional sedation / analgesia / paralysis?			
	Spinal precautions required?			
GI/GU	Is NG required?			
	Feed stopped and insulin infusion stopped?			
	Urinary catheter			
Medication	Acute medications administered (e.g., nimodipine)?		Identify and prepare any additional medications required for maternity patients (see Maternal Critical Care Transfer: Drugs, Equipment & Action Cards List).	
	Prepare infusions for 2x transfer time (assume 60 minutes for CT)?			
	Is any additional medication required (paralysis, vasopressor, etc.)?			
Packaging	Temperature management – sheet +/- blanket?		Has risk of aortocaval compression been considered and minimized (e.g., tilt)?	
			Are straps/restraints/buckles appropriately placed for the maternity patient?	
	30 degrees head up?		Ensure handheld and hospital maternity notes are also available.	
ID	ID wrist bands x2?			
Monitoring	ECG, SpO_2, NIBP for all Capnography +/- invasive arterial BP for intubated			
	Monitoring cables tied together to create umbilicus?			

Ready to leave checklist

		CHECKED?	Additions for Maternity Patients	CHECKED?
Team	Escorting team present?		Additional pregnancy problems discussed, and roles allocated?	
	Team brief conducted?			
	Anticipated problems discussed?			
Patient Condition	ABG seen (note BM, $PaCO_2$ vs $ETCO_2$)?		Confirm maternal position remains appropriate/optimal for transfer.	
	Sedation, analgesia, paralysis adequate?			
	Check pupils			
Patient Equipment Transfer Trolley	Attached to bed		Any additional obstetric guidelines/aide memories required? (See Maternal Critical Care Transfer: Drugs, Equipment & Action Cards List).	
	Transfer Bag present?			
	Transfer Drugs Bag present?			

Appendix 2. Examples of inter-hospital transfer checklists

The following examples have adopted different methods of confirming patient preparation and then subsequent readiness for departure. Some ACCTS have preparation checklists to help referring hospital teams prepare a patient for transfer [ref: www.retrieve.nhs.uk/refer]. The content of all of these is very similar.

Checklist 1: Is the patient prepared for transfer?

		CHECKED?	Additions for Maternity Patients	CHECKED?
Team	**IS PATIENT PREGNANT or RECENTLY PREGNANT? If YES, see Additions for Maternity Patients.**		Confirm MDT discussion has occurred, with input from all appropriate specialists.	
			Proposed treatment and destination appropriate (e.g: NICU beds).	
			Confirm transfer urgency established by MDT.	
			Ensure obstetric risk assessment completed (e.g., antepartum - fetal condition; postpartum – PPH), and any preconditions met (e.g., delivery).	
	Risk assessment completed?		Anticipate challenges specific to maternity patients (e.g., pre-eclampsia, need for delivery or resuscitative hysterotomy in transit, postpartum haemorrhage, newborn resuscitation).	
	Escorting team identified and available 20-30 minutes prior to departure time?		Evaluate transfer team composition: standard critical care team or additional members needed from maternity team?	

		CHECKED?	Additions for Maternity Patients	CHECKED?
Airway/ Breathing	ETT / tracheostomy secure?		For unintubated patients, consider pregnancy-related risks: follow OAA-DASS guidance; administer a proton pump inhibitor; ensure availability of a short-handled or video laryngoscope and a smaller endotracheal tube.	
	Tracheostomy spares (inner cannula, brushes, humidification, speaking valve, and spare tube)			
	Lung protective ventilation		PaO2 > 9 kPa PaCO2 4-4.5 kPa (lung protective ventilation strategies take precedence).	
	CXR checked?			
	Pneumothoraces treated (underwater drain)?			
	Oxygen calculation (use QR code) Litres required = (MV + bias) x 2 (minutes duration of transfer) Bias: Oxylog 3000 0.5LPM; Hamilton T1/MR1 3LPM			
Circulation	IV access (minimum x2) secure (ideally on right of patient)?		Consider large bore IV access.	
			Avoid aortocaval compression in preparation for and during transfer.	
			Haemodynamic instability - consider concealed haemorrhage.	
	Arterial line inserted and transduced (if intubated/ vasopressor requirements AND time allows)?		Consider fetal heart monitoring before and after transfer.	
	Blood transfusion required en route (units must be in transport box from transfusion lab)?			

		CHECKED?	Additions for Maternity Patients	CHECKED?
Neuro	Neuroprotection required for presenting condition? ICP crisis management plan considered?		Prevent hypertension, particularly in preeclamptic patients, due to elevated risk of haemorrhagic stroke.	
	Seizures managed?			
	Does patient require additional sedation / analgesia / paralysis?			
	Spinal precautions required?			
GI/GU	Is NG required/checked?			
	Feed stopped and insulin infusion stopped?			
	Urinary catheter (all intubated patients)			
	Anti-emetic considered (all awake patients)?			
Medications	Allergy status known?		Identify and prepare any additional medications required for maternity patients (see Maternal Critical Care Transfer: Drugs, Equipment & Action Cards List).	
	Acute medications administered (e.g. antibiotics, nimodipine)?			
	Prepare infusions for 2x transfer time?			
	Is any additional medication required (paralysis, vasopressor, etc)?			
Packaging	Use dedicated transfer trolley wherever possible		Are straps/restraints/buckles appropriately placed for the pregnant patient?	
	Temperature management – sheet +/- blanket?		Has risk of aortocaval compression been considered and minimised (e.g., tilt)?	
	Core temperature probe?		Ensure handheld and hospital maternity notes are also available.	
	30 degrees head up if not contraindicated?			
	Pelvic binder/femoral traction as indicated?			
	Wounds dressed			
ID	ID wrist bands x2?			

		CHECKED?	Additions for Maternity Patients	CHECKED?
NOK	Patient and/or NOK informed of transfer and destination?			
Monitoring	ECG, SpO_2, NIBP for all Capnography +/- invasive arterial BP for intubated			
	Monitoring cables tied together to create umbilicus?			
Admin	Notes and transfer letter copied?		Ensure handheld and hospital maternity notes are also available.	
	Drug chart copied?			
	Blood results/micro/ radiology copied/sent?			

Checklist 2: are you ready to leave the hospital?

		CHECKED?	Additions for Maternity Patients	CHECKED?
Patient condition	Pre-departure ABG (note glucose and $PaCO_2$ vs current $ETCO_2$)			
	Sedation, analgesia and paralysis adequate?			
	Check pupils and GCS			
Communication	Confirm receiving hospital bed still available			
	Confirm exact destination, best access and give ETA			
	Confirm best contact number for receiving clinician			
Team	Team brief conducted?		Additional pregnancy problems discussed, and roles allocated?	
	Anticipated problems discussed?		Consider possible diversion facilities en route in case of emergency.	
	Clothing/footwear suitable?			
	Other duties handed over?			
	Bladder empty?!			

		CHECKED?	Additions for Maternity Patients	CHECKED?
Logistics	Phone charged?		Any additional obstetric guidelines/aide memories required? (See Maternal Critical Care Transfer: Drugs, Equipment & Action Cards List).	
	Transfer bag present?		Additional obstetric/neonatal equipment and drugs present? (See Maternal Critical Care Transfer: Drugs, Equipment & Action Cards List).	
	Drugs bag present? Are there any additional drugs required for this patient?		Consider possible diversion options en route in case of emergency (e.g., ED, theatres etc.)	
	Return travel confirmed for team?			
	How will equipment get back?			

Checklist 3: are you ready to move in the ambulance?

		CHECKED?	Additions for Maternity Patients	CHECKED?
Driver	Destination confirmed – hospital and access point?		Destination confirmed – and possible diversion facilities considered.	
	Urgency communicated (time critical, urgent, planned)?			
Equipment	Transfer equipment and bag secure?		All additional obstetric drugs, equipment and action cards secured but accessible.	
	Transfer drugs bag aboard?		Patient appropriately secure on trolley avoiding aortocaval compression (e.g:, tilt).	
	Devices/trolley plugged in and charging?			
	Oxygen from ambulance main supply			
	Patient and trolley secure?			
Team	All seat belted?		Team seats allocated (if large team determine who will ride up front) and seat belts worn.	

References

1. Royal College of Anaesthetists et al. Care of the critically ill woman in childbirth: enhanced maternal care. 2018. Available at: https://www.rcoa.ac.uk/sites/default/files/documents/2020-06/EMC-Guidelines2018.pdf [Accessed 1st October 2024].

2. British Association of Perinatal Medicine. Optimal arrangements for Neonatal Intensive Care Units in the UK including guidance on their medical staffing. A framework for practice. 2021. Available at: https://www.bapm.org/resources/296-optimal-arrangements-for-neonatal-intensive-care-units-in-the-uk-2021 [Accessed 1st October 2024].

3. Banerjee A, Cantellow S. Maternal critical care: part I. BJA Education. 2021 Apr;21(4):140–7.

4. Advanced Life Support Group. Statement on perimortem caesarean section from MOET. Updated 21/09/2016. Available at: https://www.alsg.org/en/files/Perimortem_CS.pdf [Accessed 1st October 2024].

5. British and European Standards: Medical vehicles and their equipment – road ambulances BS EN 1789-2020. 2020. Available from: https://knowledge.bsigroup.com/products/medical-vehicles-and-their-equipment-road-ambulances [Accessed 1st October 2024].

Intensive Care Society I 7-9 Bream's Buildings I London I EC4A 1DT
T: +44 (0)20 7280 4350 E: info@ics.ac.uk W: www.ics.ac.uk

Registered as a Company limited by Guarantee
Registered No: 2940178 (England) Registered Office as above
Registered as a Charity in England and Wales No: 1039236 and in Scotland No: SC040052