Critical Care of the Obstetric Patient Policy

1. Purpose

Infrequently, a small number of women become so acutely unwell during pregnancy, labour, or the postnatal period, that they require critical care monitoring and support. In Australia, obstetric admissions to intensive care units (ICU) represent a small 1.3% proportion of total ICU admissions [1,2].

The World Health Organisation (WHO) advocates for admission to ICU only in severe maternal illness and decisions about where, how and by whom the sick woman will be managed should depend on clinical need and the available local facilities [2-3].
For many women this requires a brief period of enhanced care, and they will not require admission to a critical care unit. This also requires a multidisciplinary team approach to care with the knowledge and skills to manage the needs of critically ill pregnant and postnatal women [3-5].

Collaborative discussion involving the woman and her family in shared decision making is required to ensure that there is clear understanding of the management plan and why it has been recommended. The aim should be to facilitate ongoing continuity of midwifery and maternity team care and to keep the woman and her baby together where possible [3-7].

This policy applies only to obstetric patients in maternity hospitals with onsite high dependency unit (HDU) or ICU services (and excludes care relating to the newborn/neonate).

2. Policy

Increasing numbers of pregnant and postnatal women require higher levels of care, due to comorbidities and associated obstetric complications. These women most commonly require critical care support in association with hypertensive diseases of pregnancy or in the context of obstetric bleeding [8-15].

To ensure critically unwell maternity patients receive appropriate evidence based care, suggested principles of critical care within the WACHS environment include:

- Critical care is the level of required care, not a place of care. Therefore, it can be provided wherever the appropriately qualified staff and equipment are located, such as labour ward.
- Starting care as soon as it is required and not wait for admission to a dedicated unit for critical care, such as ICU or HDU.
- Holistic care from midwives, obstetricians, +/- anaesthetists, +/- intensivists, +/- physicians and +/- registered nurses (RN) while retaining the early newborn bonding for critically ill mothers.
- A higher level of midwifery care than the usual midwifery hours per patient on the general maternity wards.
- Ensuring that critically ill maternity patients have access to all required specialties needed to deliver her care in the most appropriate location. This may include telehealth support.

- Sites facilitating the mother and baby remaining together, unless precluded by a clinical reason.
- Location of care should not be determined based on what is currently available (or lack thereof):
  - consider calling in additional midwives or critical care nursing staff where appropriate, to support keeping mother and baby together
  - opening further beds on either maternity or in critical care units as clinical need determines.

In determining the most appropriate setting/location for critical care, hospital sites will consider the:

- combined requirements for obstetric, midwifery and critical care
- needs of the fetus for pregnant women and neonate when born
- multi-disciplinary assessment (midwifery, obstetric, medical, critical care, and anaesthetic) of the individual woman's needs
- level of care required by the woman (Level 1, 2 or 3 - see Appendix A) and the multidisciplinary care plan
- local maternity service framework.

Consider care in the maternity unit in either a birth-suite or single room for women deemed stable and responding to interventions including:

- one to one care by a midwife
- the necessary additional equipment
- medical input from obstetricians +/- intensivists, anaesthetists and physicians including a documented escalation plan for HDU/ICU care.

The required scope of midwifery/nursing practice may include:

- midwife allocated to provide one to one care on the maternity ward
- RN to be outreached from the critical care unit to maternity to provide care in collaboration with a midwife
- RN in the critical care unit allocated to provide one to one care with support from the maternity midwife allocated for outreach assessment
- midwife to be outreached to the critical care unit under supervision of the critical care team to provide critical care to the woman and newborn.

3. Roles and Responsibilities

The obstetric and medical team/s are responsible for:

- conducting a multidisciplinary review at a minimum of twice daily to assess the woman's level of critical care required
- the obstetric team must be available by phone immediately and available to attend the hospital within a reasonable time frame for assessment as requested.

HDU/ICU staff are responsible for familiarising themselves with Appendix B which sets out the physiologic impacts of pregnancy particularly relevant to resuscitation.

All staff are required to comply with the directions in WACHS policies and procedures as per their roles and responsibilities. Guidelines are the recommended course of action for WACHS and staff are expected to use this information to guide practice. If staff are unsure which policies procedures and guidelines apply to their role or scope of practice, and/or

are unsure of the application of directions they should consult their manager in the first instance.

4. Monitoring and Evaluation

Evaluation of this policy is to be conducted by the maternity manager by monitoring, investigating, and escalating all:

- cases requiring transfer from the maternity ward for critical care (HDU or ICU)
- clinical incidents where:
  - maternal deterioration is a contributing factor
  - inadequate staffing or bed availability is a contributing factor to inability to provide the required level of critical care for the obstetric woman.

5. References

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6. Definitions

Term	Definition
Critical care	Critical care is the application of advanced medical technologies administered by specialist health care professionals to alleviate the inherent physiological, and psychosocial complications associated with critical illness while treating the underlying disease process.
Critical illness	Critical illness is a process in which normal or optimal physiological functioning has been severely compromised where advanced medical treatment is a necessity.

7. Document Summary

Coverage	WACHS-wide
Audience	Clinical midwives, nurses, and doctors
Records Management	Clinical: Health Record Management Policy
Related Legislation	*Health Services Act 2016* (WA)
Related Mandatory Policies / Frameworks	• MP 0095/18 Clinical Handover Policy • MP 0175/22 Consent to Treatment Policy • MP 0171/22 Recognising and Responding to Acute Deterioration Policy • Clinical Governance, Safety and Quality Framework
Related WACHS Policy Documents	• Assessment and Management of Interhospital Patient Transfers Policy • Consent to Treatment Policy • Maternal and Newborn Care Collaboration and Escalation Policy • Maternity and Newborn Care Capability Framework Policy • Maternity and Newborn Care Guidelines – Endorsed for Use in Clinical Practice Policy • Recognising and Responding to Acute Deterioration (RRAD) Policy • Recognising and Responding to Acute Deterioration Procedure
Other Related Documents	• ACEM/ANZCA/CICM Guidelines for Transport of Critically Ill Patients 2015 [PG52(G)] • FSH Maternity Admissions to Intensive Care or Coronary Care • WNHS Hypertension in pregnancy medical Management clinical practice guideline • WNHS Hypertension in pregnancy midwifery care clinical practice guideline • WNHS Postpartum complications (including postpartum haemorrhage and uterine inversion) clinical practice guideline • WNHS Transfer of a critically unwell patient and records to an intensive care unit (ICU) at another hospital
Related Forms	• MR140A WACHS Adult Observation and Response Chart (A-ORC) • MR140B Maternal Observation and Response Chart (M-ORC) • MR184C Interhospital Transfer Maternal Form • MR184P Interhospital Transfer Neonatal & Paediatric Form • MR30A WACHS Patient consent to treatment or investigation - Adult or Mature Minor • MR70a WACHS Antenatal Inpatient Care Plan

	• MR72A WACHS Primary Postpartum Haemorrhage (PPH) Record • MR80 WACHS Vaginal Birth Care Plan • MR80A.1 Antenatal Risk Assessment for VTE Prophylaxis • MR80A.2 Postnatal Risk Assessment for VTE Prophylaxis • MR81 WACHS Caesarean Postnatal Care Plan • MR8B.2 WACHS Discussion and Partnership Care Plan: Declining Recommended Maternity Care
Related Training	Available from MyLearning: • Obstetric Emergencies Drills (OEDEILL EL1) 2025
Aboriginal Health Impact Statement Declaration (ISD)	4073
National Safety and Quality Health Service (NSQHS) Standards	1.1b, 1.1c, 1.7a, 1.27a, 6.1, 3.11, 8.8, 8.10
Aged Care Quality Standards	Nil
Chief Psychiatrist's Standards for Clinical Care	Nil
Other Standards	Nil

8. Document Control

Version	Published date	Current from	Summary of changes
2.00	28 April 2025	28 April 2025	• minor amendments to policy text and appendices • update to references in policy text and list.

9. Approval

Policy Owner	Executive Director Nursing and Midwifery Services
Co-approver	Executive Director Clinical Excellence
Contact	Coordinator of Midwifery
Business Unit	Nursing and Midwifery
EDRMS #	ED-CO-19-12986

This document can be made available in alternative formats on request.

Appendix A: Level of obstetric critical care required

Level of Care Required	Clinical Indications

1 – One to one midwifery care
 	
Condition determined to be stable enough to remain in maternity setting. At risk of deteriorating and requires a higher level of observation and care.
May include those women recently stepped down from more intensive care.
 	
Can be managed in the maternity setting with one-to-one midwifery care (or nursing care under direct supervision of a midwife) and ideally baby will remain with mother
	• Post-partum haemorrhage (PPH) – severity of blood loss and level of individual maternal compromise influence the care required.
	For example, when:
	  ○ more frequent than normal observations are required
	  ○ there is an ongoing therapeutic oxytocin infusion
	  ○ a Bakri is in situ, haemodynamically stable and no ongoing bleeding.
	• Pre-eclampsia requiring increased observations, IV anti-hypertensives **and/or** Magnesium Sulfate infusion
	• Women with medical conditions such as congenital heart disease, diabetic on insulin infusion
	• Requires **<** 6 LPM supplemental oxygen via face mask to maintain acceptable saturations
	• Sepsis - condition identified as stable and improving / responding to interventions
	• Stable repaired uterine rupture

2 – High dependency unit (HDU) Requiring invasive monitoring/intervention that includes support for a single failing organ system (excluding advanced respiratory support) Minimum twice daily assessments by the obstetric team and a midwife Requires care by a HDU nurse with phone advice provided by the maternity midwife PRN i.e. magnesium infusion policy for obstetrics Maternal observations are to be recorded on the MR140B Maternal Observation and Response Chart (M-ORC).	**Basic Respiratory Support** • Requires **>** 6 LPM supplemental oxygen via face mask to maintain acceptable saturations • Continuous Positive Airway Pressure (CPAP) • Bi-Level Positive Airway Pressure (BIPAP) **Cardiovascular Monitoring** • Invasive monitoring or sampling • CVP line used for fluid management or monitoring **Advanced Cardiovascular Support** • Use of vasoactive and/or anti-arrhythmic medications that can not be safely managed in the maternity environment • Need to measure and treat cardiac output **Evolving / Deteriorating Sepsis** • Maternal condition acutely compromised / unstable and requiring more intensive observation and responsive decision making / interventions. **Neurological Support** • Post-eclamptic seizure on magnesium infusion • Intracranial pressure monitoring
3 - Intensive care unit (ICU) Consider appropriate location for severe maternal compromise and deterioration – can require transfer to tertiary centre. Requiring advanced respiratory support (invasive positive pressure ventilation) alone or basic respiratory support along with support of at least one additional organ. Minimum twice daily assessments by the obstetric team and a midwife Requires care by an ICU nurse with phone advice provided by the maternity midwife as required or requested i.e. magnesium infusion policy for obstetrics.	**Advanced Respiratory Support** • Invasive mechanical ventilation **Support of two or more organ systems** • Respiratory and cardiovascular support • Renal and respiratory support **Other:** • Any continually deteriorating observations/condition • Pulmonary Embolism or oedema - considered if systemically compromised, condition is unstable and requires intensive observation. • Disseminated Intravascular Coagulation • Severe HELLP syndrome • Management of acute fulminant hepatic failure (may require tertiary care). • Cerebral haemorrhage (requires tertiary care)

Appendix B: Physiological changes specific to pregnancy

The critical care team must consider these factors (not exhaustive) when managing pregnant women in the HDU/ICU setting.

Cardiovascular System	**Changes in Pregnancy**	**Impact**
Plasma volume	Increased by up to 50%	Dilutional anaemia Reduced oxygen-carrying capacity
Heart rate	Increased by 15–20 bpm	Increased CPR demands
Cardiac output	Increased by 40% in pregnancy Significantly reduced (30-40%) when supine due to aortocaval pressure of gravid uterus (>20 weeks) Decreased to 10% during CPR if supine/aortocaval compression	Increased CPR demands Need to displace gravid uterus to left during ECC After 24 weeks - no response to effective CPR may require peri-mortem caesarean to: • ↑ cardiac output • ↑ lung capacity Improve compression ability
Uterine blood flow	Up to 750 mL per minute at term	Potential for rapid massive haemorrhage IV access needs to be above uterus
Systemic vascular resistance	Arterial BP ↓ by 10–15 mmHg	Decreased reserve Sequesters blood during CPR Susceptible to hypotension
Coagulation		Increased risk of VTE associated with specific factors (see MR80A.1 WACHS Antenatal Risk Assessment for VTE Prophylaxis or MR80A.2 WACHS Postnatal Risk Assessment for VTE Prophylaxis
Respiratory System	**Changes in Pregnancy**	**Impact**
Respiratory rate	Increased	Decreased buffering capacity, acidosis more likely Vulnerable to rapid hypoxia Need high flow oxygen Early intubation
Oxygen consumption	Increased by 20%	
Residual capacity	Decreased by 25% due diaphragmatic splinting by gravid uterus	
Arterial PCO2	Decreased	
Congested respiratory mucosa	Increased airway difficulties	Difficult intubation /smaller tube
Gastrointestinal	**Changes in Pregnancy**	**Impact**
Gastric motility	Decreased	Delayed gastric emptying and increased risk of aspiration.
Oesophageal sphincter	Relaxed (influence of relaxin)	Increased risk of aspiration
Metabolic requirements	Increased	Up to an extra 1400 – 2000 kJ required daily.