Aneurin Bevan University Health Board

Maternal Critical Care Unit Guidelines

N.B. Staff should be discouraged from printing this document. This is to avoid the risk of out of date printed versions of the document. The Intranet should be referred to for the current version of the document.

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Approved by: Maternity Clinical Effectiveness Forum
Owner: Maternity Service
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Contents:

Introduction

Childbirth is a major life event for women and their families. Successful maternal and fetal outcomes for women transferred to obstetric critical care are dependent upon a multi disciplinary approach to patient management that requires input from midwives, obstetricians, anaesthetists and neonatologists. Pathways of care should facilitate, where possible, for mother and baby to be together.

Aims

This guideline aims to outline the criteria for admission to and discharge from obstetric critical care, including the necessary equipment needed to care for these women.

Objectives

To support safe and effective practice within the clinical area

Scope

This guideline is aimed at and applies to all health care professionals involved in the care of the critically ill obstetric patient.

Training

Staff are expected to access appropriate training where provided. Training needs will be identified through local appraisal and clinical supervision.

Maternal Critical Care Unit (MCCU) guidelines

Key Messages

- Successful maternal and fetal outcomes for women requiring obstetric critical care are dependent upon a strict multi disciplinary approach.
- This requires input from midwives, obstetricians, anaesthetists and neonatologists.
- The maternal critical care unit is a designated area on the labour ward that is equipped for the care and management of the sick obstetric patient, allowing a higher level of care than the ward/post operative support ward.
- It has been shown via audit that women on the unit regularly receive level 2 care
- All staff should be familiar with these guidelines and the unit.
- Patients on the Maternal Critical Care Unit should receive one to one midwifery care

The Obstetric Critical Care unit on the Main Delivery Unit allows for : -

- the care of the critically unwell obstetric patient who requires intensive nursing or midwifery care but who does not meet the criteria for admission to main critical care
- baby to stay with the mother
- frequent observation and monitoring, including more invasive monitoring, to be provided in a safe environment
- provision of individualised multidisciplinary care

- regular review by the anaesthetists and obstetricians

- Quick transfer to theatre if needed

Levels of care in Obstetrics

- **Level 0 – ward/Birth centre**

Uncomplicated routine obstetric /midwifery care e.g:
Normal labour/delivery
Induction of labour
Early labour assessment

- **Level 1 – MDU Labour room/Recovery/Post Op Support Ward**

More observation and/or monitoring needed e.g:
Labour augmentation
Epidural analgesia for labour
Remifentanil PCA for labour
Recovery following caesarean section in recovery for one hour
Recovery following caesarean section in POSW for 24 hours
Instrumental delivery in theatre and recovery in POSW for 12 hours
Risk of massive haemorrhage
Mild/Moderate pre-eclampsia
Transfusion of blood products
Spinal opioids
Ongoing oxytocinon infusion

- **Level 2 – Obstetric Critical care unit**

Intensive monitoring and/or single organ support e.g:
Continuous oxygen
Infusion of one or more intravenous anti-hypertensives
Invasive arterial and/or central venous pressure monitoring
Blood loss >15% blood volume
Magnesium infusion to treat or reduce the risk of eclamptic fits

- **Level 3 – Main Intensive care unit**

Advanced airway support and/or support of two or more organ systems
Non invasive ventilation

Invasive ventilation
Requiring vasopressor support
Renal support

***A patient requiring level 2 or 3 care is "Critical care" Level 2 care requires a dedicated midwife and as such should not be left unattended at any time.**

Admission Criteria

Eligibility for obstetric critical care ultimately depends on the patients' clinical need and should be decided by the multidisciplinary team of obstetricians, anaesthetists and senior midwives.

Anyone fitting the level 2 care needs should be admitted, likely clinical situations that will require admission are:

- Severe Sepsis
- Eclampsia
- Severe pre-eclampsia
- Haemorrhage
  - Massive
  - >15% blood volume
  - consider if >1000mls
- Pulmonary embolism
  - Respiratory compromise
  - Increasing hypoxia
- Use of invasive monitoring
- Anaphylactic shock
- Complications from anaesthesia
- Any medical/surgical condition that compromises the maternal condition, such as poorly controlled diabetes or diabetic ketoacidosis.

On admission to the Obstetric critical care unit

In addition to standard antenatal/postnatal care the following must be performed

- Review of history/symptoms and completion of MCCU admission booklet (Appendix B) by on call anaesthetists and/or obstetric team (please bleep and inform them as soon as patient arrives)
- Institution of continuous monitoring, recorded on MEOWS chart with name, time and date.
- Drug chart completed
- Venous thromboembolism risk assessment completed and anti-embolic stockings applied
- Full set of blood tests performed
- Ensure patient has electronic issue
- Patients name and admission diagnosis be placed in the MCCU register

Monitoring and documentation

- The MEOWS chart should be used for all women requiring critical care.
- The decision to admit and reason, must be documented in the patients notes by the senior obstetrician/anaesthetist,
- Each morning (or more frequent if indicated) the relevant Obstetric Critical Care bundle sticker should be completed
- Minimum of twice daily review by the senior member of the obstetric and anaesthetic teams, ideally together and a joint daily management plan made.
- Completion of discharge summary (on reverse of MCCU admission booklet) **prior** to discharge

Staff responsibilities

Multidisciplinary communication and documentation is essential from senior grades of obstetrician, anaesthetist, midwife coordinator and other professional as indicated.

It is vital that these women are discussed at each MDU handover (08:00/13:00/17:00/20:00)

Midwifery

- Recording of patient observations on MEOWS chart

Obstetric

- Completion of MCCU admission booklet
- Twice daily review and documentation of plan

Anaesthetic

- Completion of MCCU admission booklet
- Twice daily review and documentation of plan

Discharge

A woman should meet the discharge criteria (Appendix D) before discharge from the obstetric critical care unit, and the condition that led to the escalation of care should be adequately treated and resolved.

The discharge should be a joint decision between the co-ordinating midwife, obstetric registrar/consultant and the anaesthetic registrar/consultant and ideally be made before 10pm.

The discharge summary should be completed prior to discharge

Care should be stepped down gradually to ensure safe discharge with reduced frequency of observations and normalization of care to the ward they are being transferred to.

Equipment

All equipment as per the inventory (Appendix A) should be available

The daily check should be performed by the theatre nurse.

If any equipment is not available when admitting a patient, inform the labour ward coordinator : a DATIX form must be completed

Monitoring

All women on MCCU should have minimum of hourly monitoring.

Type of monitoring should be discussed with the on call anaesthetist (if in doubt, please ask)

Training

All staff caring for critically ill obstetric patients should have the appropriate training. Training needs will be identified through appraisal and clinical supervision and be placed in the maternity training needs analysis report.

Midwives and nurses caring for women should have the appropriate skills and competencies in monitoring, measurement, interpretation and prompt response to the acutely ill patient appropriate to the level of care they are providing.

This training will be achieved by:

- Regular attendance at ALERT (3 Yearly)
- Prompt course (funding dependent)
- MDU teaching (on MDU, study days, joint obs-anaes meeting)
- Skills and drill sessions

Appendix A - MCCU Inventory

Key Messages

- All the equipment should be available and present on the Obstetric Critical Care Unit at all times
- There should be daily checks to ensure this
- All pumps/beds should be plugged in and charged at all times
- If equipment is not available when you come to admit a patient, please inform labour ward coordinator complete a DATIX form

Each bedspace

- Airway Equipment
  - Ambu bag
  - Waters circuit
  - Size 4 Facemask and in circuit HME filter

- Monitoring
  - Full Phillips display monitor
  - Set of ECG leads
  - Saturation probe
  - Non invasive blood pressure lead
  - Three sizes of blood pressure cuff
  - Two transducer leads -Arterial/CVP
  - Temperature lead
  - Transducer plate
  - End tidal CO2 monitor

- Pumps
  - Alaris
  - Volumetric
  - Fluid warmer

- Drip stand
- Pressure bag
- Working suction unit with yankeur attached
- Rack with S/M/L gloves

General

- 2 x Portable oxygen cylinders
- End of bed desks
- Bair hugger
- Computer with keyboard and mouse
- Telephone line

Wall rack

- Admission document
- Nursing form
- Critical care bundles
- Text books
- BNF

Document folder

- Continuation sheets
- Xray forms
- Blood forms
- Referral forms
- ECHO forms

Trolley

- On top
    - Haemorrhage box
    - Eclampsia box
    - BM machine
    - Temperature probe
    - BNF

- Top Drawer
    - Blood forms
    - Blood bottles
    - Tourniquets

  - Syringes
  - Needles
  - Butterfly needles
  - Blood culture bottles

- Top Drawer 2
  - Nasal specs
  - Face mask
  - Scissors

- Second drawer
  - Cannulas – 18/17/16/14G
  - Steriswabs
  - Gauze swabs
  - Venflon dressings
  - Y connectors
  - Arterial lines
  - Blood gas syringes
  - Saline and Water ampoules

- Second drawer 2
  - Ecg stickers
  - Tape
  - H20/Saline ampoules
  - Red bungs
  - Spare Arterial line transducers
  - Swabs/Gauze

- Third drawer
  - Fluids – Hartmanns/Saline
  - Giving sets
  - Tapes
  - Sterile Gloves

- Third drawer 2
  - Catheter set
  - Instillagel
  - Cleaning solution
  - Packs

- Fourth drawer
  - Tendon hammer

- Pen torch
- Ophthalmoscope

Document folder

- Consent forms
- Continuation sheets
- X-ray form
- Transfusion record

Appendix B - OCCU Discharge criteria

OCCU DISCHARGE CRITERIA

Date……

Patient sticker

	YES
Resolution of admission	
Airway, Breathing and Circulation	
The patient can maintain their airway	
Is the patient's oxygen saturation > 96% on air?	
Is the patient's MEOWS score < 2	
Has there been 4 hours of stable observations?	
Is the patient orientated appropriately?	
Invasive monitoring is no longer required	
Fluid balance and diet	
If a urinary catheter is in situ, is it draining > 1ml/kg/hr?	
Cell salvage infusion complete?	
Syntocinon infusion complete?	
Can the patient tolerate oral fluids?	
Is the patient free of nausea and vomiting?	
Wound care	
Is the wound site dry and dressed?	
Is the lochia observed appropriate?	
If surgical drains are in situ, is the drainage appropriate?	
Is uterine tone satisfactory?	
Analgesia	
Is the patient's pain score < 3/10?	
Documentation and prescriptions	
Has a venous thromboembolism risk assessment been undertaken and charted?	
Are the following present in the notes? Operation note Anaesthetic chart Perioperative care plan	
Are there appropriate prescriptions for the following? Analgesia (regular and prn) Antiemesis DVT prophylaxis	

Ongoing plan of care has been clearly written	
Referred for debriefing and emotional aftercare	

Variances

Signature of discharging midwife/nurse……
Signature of receiving postnatal midwife……

Appendix C

Suggested Core Curriculum, Maternal Critical Care

Normal physiology of pregnancy

Respiratory system

- Anatomy and physiology of airway and respiratory function Respiratory failure
- Optimising airway and respiratory function
- ABG and oxygen therapy
- High flow oxygen therapy and CPAP
- CXR interpretation

Cardiovascular system

- Anatomy and physiology of heart and conductive system
- 12 Lead ECG interpretation
- Cardiac disease in pregnancy

Other systems

- Hypertensive disease in pregnancy
- Hepato renal disease in pregnancy
- Diabetes in pregnancy
- Obesity in pregnancy
- Neurological disease or altered conscious level in pregnancy
- Coagulation and blood products within the High dependency setting

General critical care topics

- Transfer of critically ill woman
- Shock and sepsis:
- MEWS in obstetrics and the outreach team Infections in pregnancy

- HIV and swineflu Infection control

Others

- Sudden collapse in pregnancy
- Complications of anaesthesia and pain relief in labour and pregnancy
- Fluid balance in critical care (including massive haemorrhage)
- Advanced resuscitation in pregnancy including the five minute CS rule
- Audit and documentation
- Competency-based training

APPENDIX 4

EQUALITY IMPACT ASSESSMENT GUIDANCE

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Flowchart for the Completion of the EqIA Paperwork

1. Complete **FORM 1** 'Preparation and Assessment of Relevance & Priority'

↓

2. Complete **FORM 2** 'Evidence Gathering'

↓

3. Complete **FORM 3** 'Action Plan'

↓

4. Complete **FORM 4** 'Assessment of Relevance and Priority Scoring Chart' **To be scored following consideration of relevant action to be taken**

↓

5. Complete **FORM 5** 'Outcome Report'

FORM 1

Equality Impact Assessment (EqIA)

Form 1

Part A: Preparation and Assessment of Relevance and Priority

Step1: Preparation

1 What are you equality impact assessing?

Maternity Critical care Guidelines

2. Policy Aims and Brief Description - What are its aims, give brief description.

This guidance document has been produced to facilitate practitioners /in caring for women who require critical care within maternity services level 2 care.

3. Who Owns the Policy? - Who is responsible for the policy/work?

Maternity Clinical Effectiveness Forum Author – D Helme,

4. Who is involved in undertaking this EqIA? - Who are the key contributors to the EqIA and what are their roles in the process?

J Beasley – Midwife manager

5. Other Policies- Describe where this policy/work fits in a wider context.

Labour ward guideline, management of massive haemorrhage,physiological observations in maternity services guideline

6. Stakeholders – Who is involved with or affected by this policy?

Maternity staff Women who require maternity critical care

7. What factors may contribute to the outcomes of the policy? What factors may detract from the outcomes? These could be internal or external factors.

Distribution and availability of the guideline

Next Steps

For the next stage of the EqIA process please see form:
Part A, Step 2 - Evidence Gathering.

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FORM 2 **Equality Impact Assessment: Part A, Step 2 Evidence Gathering**

Equality Strand	Evidence Gathered	Does the evidence apply to the following with regard to this policy/work? Tick as appropriate													
		Eliminating Discrimination and Eliminating Harassment		Promoting Equality of Opportunity		Promoting Good Relations and Positive Attitudes		Encouraging Participation in Public Life		Taking account of difference even if it involves treating some individuals more favourably					
Race	There is no evidence identified to demonstrate that a persons race will affect operation of this guideline		✓		✓		✓								
Disability	There is no evidence identified to demonstrate that a persons disability will affect operation of this guideline		✓		✓		✓								
Gender	There is no evidence identified to demonstrate that a persons gender will affect operation of this guideline, this guideline relates to women		✓		✓		✓								
Sexual Orientation	There is no evidence identified to demonstrate that a persons sexual orientation will affect operation of this guideline		✓		✓		✓								
Age	There is no evidence identified to demonstrate that a persons age will affect operation of this guideline		✓		✓		✓								
Religion/ Belief	There is no evidence identified to demonstrate that a persons religion/belief will affect operation of this guideline		✓		✓		✓								
Welsh Language	There are facilities for translation if required		✓		✓		✓								
Human Rights															

*This column relates only to disability due to the DDA 2005 specific duty

FORM 3

Aneurin Bevan Health Board
Equality Impact Assessment Action Plan

Name of Policy:

Recommendation	Expected Outcome	Divisional/Department Response	Responsible person	Progress to date
No additional actions required				

FORM 4

Aneurin Bevan Health Board: Equality Impact Assessment
Assessment of Relevance and Priority – Scoring Chart

Name of Policy:

Equality Strand	Evidence: Existing evidence to suggest some groups affected gathered from Part A Step 2.	Potential Impact: Nature, profile, scale, cost, numbers affected, significance.	Decision: Multiply 'Evidence' score by 'Potential Impact' score. ** please see bottom of the page for maths rule*
Race	1	3	3
Disability	1	3	3
Gender	1	3	3
Sexual Orientation	1 1	3	3
Age	1	3	3
Religion/ Belief	1	3	3
Welsh Language	1	3	3
Human Rights	1	3	3

Evidence Available	
3	Existing data/research
2	Anecdotal/awareness data only
1	No evidence or suggestion

Potential Impact	
-3	High negative
-2	Medium negative
-1	Low negative
0	No impact
+1	Low positive
+2	Medium positive
+3	High positive

Impact Decision	
-6 to -9	High Impact (H)
-3 to -5	Medium Impact (M)
-1 to -2	Low Impact (L)
0	No Impact (N)
1 to 9	Positive Impact (P)

* Rule: Multiplication of a negative number by a positive number yields a negative result.
Multiplication of two positive numbers yields a positive result.
Multiplication of two negative numbers yields a positive result.

FORM 5

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Equality Impact Assessment (EqIA) Outcome Report

Policy Title:	Maternity critical care unit guideline
Organisation:	Aneurin Bevan University Health Board
Name of policy Assessors:	J Beasley – Midwifery manager
Division/ Department:	Family & Therapies Division, Maternity Services
Proceed to Full EqIA:	The assessors are satisfied that as there are no negative impacts identified in this assessment a full EqIA is not required.
Summary of the EqIA process and key points to be actioned:	This EqIA has been undertaken using the tool kit designed by the NHS Wales Centre for Equality & Human Rights. The tool kit gives due consideration to each statutory limb of the Equality Act (2010) and in keeping with an inclusive equality agenda also includes consideration of the Welsh Language Act and the Human Rights Act. This report is not intended to provide a definitive account of the content and outcome of the EqIA screening process but offers a summary of the findings. In this instance no negative differential is identified
Responsibility for validation of the EqIA:	Maternity Services Clinical Effectiveness forum
Date:	28th April 2016
Monitoring Arrangements:	This Guideline will be monitored via the Maternity Services Clinical Effectiveness forum
Policy expiry: date:	28th April 2019

This information is available on request in a range of accessible formats, Welsh and other community languages as required.

For more information please contact: Aneurin Bevan Health Board Policy Process Manager on 01495 765460

APPENDIX 5

CHECKLIST FOR THE APPROVAL AND RATIFICATION PROCESS OF POLICIES AND OTHER WRITTEN CONTROL DOCUMENTS

CHECKLIST FOR THE APPROVAL AND RATIFICATION OF POLICIES AND OTHER WRITTEN CONTROL DOCUMENTS

Please note that no policies or other written control documents should be taken to the [enter sub committee name] for ratification unless they have been seen and approved by the [enter the name of the sub group or forum].

Name of Policy or written control document maternity critical care unit guideline

.....

Owner(s): Maternity Clinical Effectiveness forum…….

Review Date: 28th April 2018 expires 28th April 2019

1.	Please specify the date and name of person who carried out the policy or other written control document Equality Impact Assessment	Date:28th April 2016 Name : J Beasley……			
2.	Have you taken into consideration the relevant legislation that may be applicable to this policy or other written control document?	Yes	✓	No	
	Comments				
3.	Has a patient information leaflet been developed to assist this policy or written control document?	Yes		No	
		Not Applicable	✓		

If yes, is the information available in the variety of accessible formats and languages? *(including welsh and other community languages as appropriate)*

Comments :

4. Where appropriate, have you consulted with the relevant services/personnel throughout the Aneurin Bevan Health Board when completing the policy or other written control document?

Yes [✓] No [ ]

(e.g. Voluntary, Legal, Pharmacy, IT, Finance, personnel, etc.)

Comments :

5. If applicable, please state what training has been identified as a result of this policy or other written control document, and what has been taken:
(Has the training department been informed of any training needs?)

All midwifery staff have yearly update training on child protection

6. Have the necessary users been consulted in the development of this policy or written control document?

(e.g. Aneurin Bevan Health Board, Division/Locality wide, Third Sector, etc.)

Yes [✓] No [ ] Not Applicable [ ]

Please provide details: …Sent out to all senior maternity staff……

7. Has the necessary Equality Impact Assessment documentation been completed?

Yes [✓] No [ ]

If no, give reason(s

8. Has the necessary Environment Impact Assessment been completed?

Yes [ ] No [ ] Not Applicable [✓]

If no, give reason(s): ……

Ratification

The [enter name of committee, group or forum] has considered the information and agrees/ratifies on [28th April 2016].

Chair signature
……JSingh……..……

Comments :