Aneurin Bevan University Health Board

Physiological Observations

in Maternity Services Guidance

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 This is to avoid the risk of out of date printed versions of the document.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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Contents:

1 Introduction

This document is a clinical guideline designed to support safe and effective care

2 Aim

To offer guidance to midwives and other health care staff in the following:

2.1 Doing the right observations

- The physiological observations (vital signs) that should be undertaken on women in maternity
- The frequency of observations and when they should be stepped up or down

2.2 Recognising the deteriorating patient

- How observations should be recorded and assessed
- Using the MEOWS (Modified Early Obstetric Warning Score) scoring system to guide clinical decision making (Appendix 1)
- The abnormal ranges of observations that should cause concern (guided by MEOWS)

2.3 Initiating simple rescue measures

- How to make a referral for a deteriorating patient.

3 Scope

3.1 This guidance applies to all antenatal, intrapartum, post operative and postnatal women

4 Background

4.1 It is recognised that pregnancy and labour are normal physiological events, however observation of vital signs are still an integral part of care.

4.2 There is potential for any women in hospital to be at risk of physiological deterioration and we have a duty of care to protect women.

4.3 Not all deterioration can be predicted and therefore women require close observation which includes the taking and recording of vital signs.

4.4 There is evidence that there is poor recognition of physiological deterioration

4.5 Regular recording and documentation of vital signs will aid recognition of any change in a woman's condition.

4.6 If abnormal vital signs are recorded, appropriate action is not always taken.

4.7 The use of Early Warning Systems has been shown to improve morbidity and mortality on medical wards.1

4.8 Normal physiological values differ in pregnancy from the non-pregnant state.

4.9 The Modified Obstetric Warning System (MEOWS) was developed by Drs Fiona McIlvenney and Chris Cairns of Stirling Royal Infirmary

and recommended by the CEMACH report (2003/2005).2 It uses a colour coded chart to classify deviations from normal values.

The following guidance will include use of the MEOWS system and other observations that should be heeded. The additional importance of "midwife/nurse concern" as a factor in predicting deterioration should not be underestimated, and any member of staff who is concerned about a patient should not hesitate to call for help. MEOWS should be seen as a useful tool for identifying unwell women, and not a replacement for the clinical skills of the midwife.

5. Standard

The following guidance will include use of the MEOWS system and other observations that should be heeded. The additional importance of "midwife/nurse concern" as a factor in predicting deterioration should not be underestimated, and any member of staff who is concerned about a patient should not hesitate to call for help. MEOWS should be seen as a useful tool for identifying unwell women, and not a replacement for the clinical skills of the midwife.

All women will have a full set of physiological observations (Pulse, Temperature, Blood Pressure and Respiratory Rate) undertaken on admission to hospital or when presenting to an assessment area in line with the Admission Bundle of Saving 1000 Lives Plus.

Physiological Observations that should normally be undertaken on maternity patients

5.1 All in patients must have at least one full set of observations recorded each day on a MEOWS chart

5.2 Antenatal – The frequency of observations for the antenatal inpatient will be determined by their diagnosis and reason for admission. Individual management plans should be followed.

5.3 Intrapartum – Maternal observations: During the first stage of labour the maternal pulse should be taken hourly. Temperature and Blood pressure should be taken 4 hourly. Women should be encouraged to empty their bladder every 4 to 6 hours this should be measured and documented on the partogram.

During the second stage of labour the blood pressure and pulse should be taken hourly and the temperature 4 hourly and the frequency of passing urine should be recorded on the partogram.

There will be some women who will require more intensive observations in labour depending on their medical condition and or pain relief when the timing of observations should be based on an accurate clinical and physical assessment of the mother.

5.4 Post operatively –

RESPONSIBILITIES OF THE RECOVERY MIDWIFE/REGISTERED NURSE IN THE IMMEDIATE POST OPERATIVE PERIOD

Upon transfer into theatre recovery the anaesthetist will communicate the following information.

Remember **SBAR!** (Situation, Background, Assessment, Recommendation)

- Any complications or concerns regarding the patient's condition

- Type of anaesthesia
- Analgesic drugs given
- On going plan of drug prescription
- Multidisciplinary decision regarding transfer to OCCU (Obstetric Critical Care Unit) or POSW (Post operative Support Ward)

Commence the MEOWS (Modified Early Obstetric Warning Score). Observations are to be recorded every 5 minutes for 30 minutes. See appendix one on MEOWS.

In addition ensure lochia is normal, observe the wound dressing and if applicable record drainage from the wound drain.

Provide the opportunity for skin to skin contact.

Administer medication as prescribed, including on-going intravenous fluids.

REMEMBER: PROMPT REFERRAL TO MEDICAL STAFF WHEN DEVIATIONS OCCUR - use telephone/buzzer system, **DO NOT LEAVE THE PATIENT!**

TRANSFER TO POST-OPERATIVE SUPPORT WARD

Initiate patient transfer after 30 minutes if the woman's condition is stable.
Communication from the recovery person to midwife/RGN in POSW to include:

- Introduction and identification of patient to include parity
- Any known allergies
- The actual procedure undergone

- Type of anaesthesia
- Any pre-existing medical conditions
- Blood loss
- Blood group/ and if Kleihauer has been performed
- Continuing of monitoring and recording on MEOWS
- Any on-going plan of care to include anaesthetic/obstetric instructions
- Details of baby

ROUTINE OBSERVATIONS IN THE POST-OPERATIVE SUPPORT WARD

Routine observations are as follows unless condition of the patient warrants more frequent assessment.

OBSERVATIONS

Respiratory Rate, Oxygen Saturation, Heart rate, Blood Pressure,

Neuro Response, Pain Score, Lochia, Looks Well.

FREQUENCY OF OBSERVATIONS

- Every half hour for 4 hours, followed by
- hourly for 6 hours, followed by
- 4 hourly thereafter

Temperature should be recorded upon transfer and then 4 hourly. If the temperature is above 37.5 or below 36 degrees centigrade please record more frequently. If the woman's temperature is low consider Bair Hugger.

FOLLOWING ADMINISTRATION OF SPINAL & EPIDURAL MORPHINE – Hourly Respiratory rate, sedation & pain score for 24 hours

PATIENT CONTROLLED ANALGESIA – Respiratory rate, sedation & pain score for:

- **15 minutes for first hour, followed by**
- **hourly for 4 hours, followed by**
- **2 hourly thereafter.**

***If bolus increases, every 30 minutes for 2 hours & revert to protocol.**

OBSERVATIONS TO BE CONTINUED 4 HOURLY ON SMALL MEOWS CHART WHEN TRANSFERRED TO POSTNATAL WARD

Please ensure that care given is correctly documented in the midwifery notes, including the daily postnatal and baby check.

CARE FOLLOWING CAESAREAN SECTION

Early eating and drinking after caesarean section

It is recommended as per NICE guideline (2011) that women who are recovering well and who do not have complications can eat and drink when they feel hungry and thirsty. Women may have sips of water during the immediate recovery period providing there are no complications.

Urinary catheter removal after caesarean section

It is recommended as per NICE guideline (2011) that removal of the urinary catheter should be carried out once a woman is mobile, however, not sooner than 12 hours after the last epidural 'top up' dose.

VTE (Venous ThromboEmbolism) prophylaxsis after caesarean section

Follow guideline and prescription chart.
If the woman is well please sit her out in a chair after 6 hours with a view to early mobilisation as appropriate.
Use of anti-embolic stockings.

Wound care

Dressing to remain in situ –removal as per local guidance
Encourage the women to wear loose comfortable clothes and cotton underwear, to bath/shower daily and to gently dry the wound well and only apply dressings if advised by the doctor or midwife.

Debriefing of women after caesarean section

It is recommended that women post caesarean section should be offered the opportunity to discuss with an obstetrician the reasons for caesarean section and the implications for future pregnancies.

APPENDIX 1

MEOWS chart (Modified Early Obstetric Warning Score)

The use of MEOWS chart will assist in the more timely recognition, treatment and referral of women who have, or are developing a critical illness during or after pregnancy.

Abnormal scores should not just be recorded but should also trigger an appropriate response.

Respiratory Rate is the most sensitive indicator of deteriorating physiology and is the best marker of deterioration in a sick woman.

- Please ensure the actual respiratory rate is recorded.

Pulse

- Tachycardia is highly indicative of an unwell woman and should be monitored via manual pulse oximetry or ECG reading. Please note that in the poorly perfused patient oxygen saturation may not pick up properly/ or read low.

Blood pressure

- Please ensure the correct cuff size is used to ensure accuracy of recordings, especially in the obese woman.

- Cautions with electronic recording of blood pressure which can underestimate readings of up to 5%. It is recommended good practice to therefore check with a manual reading.

- Falling blood pressure should be regarded as a late sign of deterioration as pregnant women can have a reduction of 30-40% of their circulating volume with no change to their vital signs.

- **WARNING:** if the pulse rate is higher than the systolic blood pressure please inform the obstetric and anaesthetic team. This could indicate haemorrhagic shock.

Temperature

- If temperature is below <36 degrees centigrade consider bair hugger. Low body temperature can indicate severe sepsis.

- If temperature >38 degrees centigrade please inform the obstetric on call team. Please refer to Sepsis Bundle.

Strict fluid balance

- Ensure fluids are administered via infusion device as per prescription chart.

- Strict hourly recording and running total of input and output.

5.5 Post partum –

All women will have a full set of physiological observations (P, T, BP and RR) taken post birth regardless of the mode of birth. This should be undertaken within the first 30 minutes. Where there have been concerns about any observations during the antenatal or intrapartum period, these should be taken within the first 15 minutes and repeated at regular intervals as per the plan of care. Women should void within 6 hours of birth or removal of catheter. A full set of observations must be recorded as a minimum for the first 3 days following delivery (Day 1 will be day of delivery) either by hospital or community midwives. This should include pulse, blood pressure, temperature and respiratory rate. Observations will be recorded on a MEOWS chart within all settings (including community).

5.6 Frequency of subsequent observations will be determined by the results of the initial observations.

5.7 Compliance with recommended standards for observation will be monitored by a programme of audit.

6. Documentation

To be recorded on observation chart, and or maternity records of care pathways and postnatal record.

6.1 All women should have temperature, pulse, respiration rate, blood pressure, recorded on admission or first assessment if home birth. The volume and time of the first void post birth should be documented.

6.2 All antenatal and postnatal women should have a MEOWS score attributed to every set of observations.

6.3 If possible the woman's normal observations should be noted for comparison, especially if they suffer from chronic illnesses.

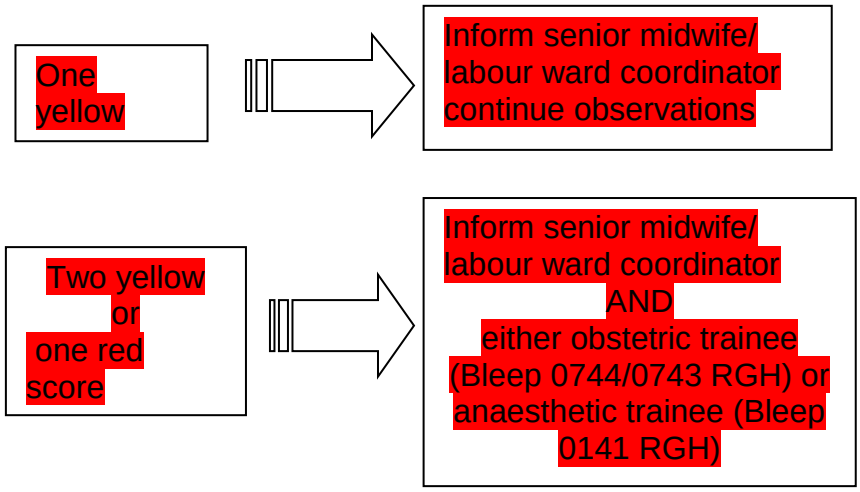
6.4 In hospital, all antenatal and postnatal women's observations should be recorded on the Maternity MEOWS chart. For women having a home birth, observations should be recorded in the maternity records.

6.5 The high dependency chart should be used when the woman's condition warrants observations more frequently than hourly.

6.6 Women must retain the same observation chart, especially when moving between wards and departments so that physiological trends can be seen.

6.7 All women should have a set of observations recorded at least daily whilst in hospital. The frequency of observations can be altered

Abnormal ranges `are defined on the MEOWS chart (see Appendix 1). Referral should be made as defined below



If these trainees not available then contact anaesthetic senior registrar (RGH only). For NHH bleep on call Anaesthetist on 026

Conscious level

The conscious level should be assessed on all women and recorded using the **AVPU** scale.

A **A**lert and conscious

V Responds to **V**oice

P Responds to **P**ain

U **U**nresponsive

Alternatively use the **Glasgow Coma Score**

Table 1: THE GLASGOW COMA SCALE AND SCORE

Feature	Scale Responses	Score Notation
Eye opening	Spontaneous To speech To pain None	4 3 2 1
Verbal response	Orientated Confused conversation Words (inappropriate) Sounds (incomprehensible) None	5 4 3 2 1
Best motor response	Obey commands Localise pain Flexion – Normal – Abnormal Extend None	6 5 4 3 2 1
TOTAL COMA 'SCORE'		**3/15 – 15/15**

6.8.2. Deterioration in conscious level can be caused by many factors and a more comprehensive physical assessment should be undertaken by a competent practitioner.

6.8.3. A response only to pain or unresponsive, correlates to a GCS of < 8 and should be treated as a medical emergency.

6.8.4. Any deterioration in conscious level should be followed by a more in depth assessment of GCS, including pupil reaction to light and blood sugar measurement.

6.8.5. Pregnant women having seizures are a medical emergency and the on-call obstetrician and anaesthetist should be summoned immediately

6.9. Urine output

6.9.1. The optimum urine output is 1ml/kg/hr. In a 70 kg adult this is equal to 70 mls/hr. The minimum desired urine output is 0.5 mls/kg/hr, which is equal to 35 mls/hr. Urine output is generally assessed over a two hour period.

6.9.2. In the majority of women urine output does not need to be routinely measured, but should be considered in the following instances;

- Women whose MEOWS score is worsening.
- Women with other abnormal signs such as a high fever.
- Women with other abnormal fluid losses such as vomiting, significant blood loss, drains or diarrhoea.
- Women with severe pre-eclampsia or fulminating eclampsia
- Women who have experienced excessive blood loss e.g. APH, PPH.

7 Fluid charts

7.1 When a fluid chart is in use it should be fully filled in with both input and output fluid and quantity. Entries such as OTT (out to toilet) are inadequate.

7.2 Women receiving IV fluid should have a fluid chart in progress.

7.3 Insensible losses are not normally recorded, but should be accounted for in patients with fluid balance problems. Normal insensible loss is approximately 1L in 24 hours, but can greatly increase when a patient has a high temperature or rapid respiratory rate. (When fluid restriction is required the amount of fluid to be infused is calculated based on the previous hours urine volume plus 40 mls to cover insensible loss. The maximum amount of fluid given including medication should not exceed 100 mls).

8 Frequency of observations

The frequency of observation recording will depend on the patients' condition and local ward practice. It is likely that the midwife in charge or the obstetrician or anaesthetist will request an increase in the frequency of observations if abnormal observations are detected

9 Assessing the Woman

9.1 Vital signs and MEOWS scoring will give an indication of the woman's condition. If the woman is deteriorating, a more comprehensive assessment is warranted.

9.2 Help must be sought as soon as possible if any practitioner feels unable to adequately deal with the situation, or feels that the woman could deteriorate further.

10 Seeking help

10.1 Any concerns about the woman must be relayed to the clinician responsible for the care of the woman, and recorded in her notes.

10.2 If the most immediate clinician is unavailable or delayed, then the next in line should be contacted.

10.3 The following procedure is a guide to calling for help;

- Before bleeping a clinician, make sure you have all the information you need to hand.
- When bleeping a clinician, ensure someone is able to stay by the phone to received the call back.
- State who you are and where you are located.
- State the patients name, diagnosis and whether antenatal or postnatal.
- State the current problem, giving observation and assessment findings.
- Be clear about what you are expecting the clinician to do.
- A fast bleep can be put out and a specific clinician can be paged, but ….
- Do not hesitate to call the cardiac arrest team on 2222 if the patient has collapsed, the patient is rapidly deteriorating or you have any major concerns.
-

11 Immediate measures

11.1 Simple early measures can often prevent further deterioration of the patient and avoid the need to admit to higher levels of care.

11.2 Interventions will depend on the patients' vital signs and initial assessment but include some of the following;

- Appropriate positioning of the patient
- Checking that the optimum amount of oxygen is being delivered
- Checking that vital medications have been given
- Checking that infusions are running and up to date

12 If you are in any doubt about what to do, or your competency to do it call for help

8 References

1. Sabbe CP, Gemmel L, et al. Validation of a modified Early Warning Score in medical admissions.QJM 2001 Oct; 94 (10): 521-6

2. Saving Mothers' Lives 2003-2005. CEMACH Report.

3. NICE Caesarean Section 2011

12 Training

12 .1 Staff training and support

There are a number of resources that can be used to support ward staff in obtaining the skills, knowledge and expertise in the physiological assessment of women, MEOWS scoring and initial hand management of high dependency women.

Clinical experts (for example anaesthetists, obstetricians).

Annual mandatory training programmes for midwives.

Acute Life-Threatening Events Recognition and treatment (ALERT) Course

13. Implementation

This guideline will be cascaded by midwifery management and obstetric teams and complimented by training in the Mandatory study days

14. Further Information Clinical Documents

ABUHB Labour Ward Guidelines - 2015

NICE Intrapartum Care - 2015

15. Audit

This guideline will be audited via the local risk management incident processes.

16. Review

The guideline will be reviewed in 3 years unless legislation requires

Appendix 1 MEOWs Chart

OBSTETRIC EARLY WARNING CHART

CONTACT DOCTOR FOR EARLY INTERVENTION IF PATIENT TRIGGERS ONE RED OR TWO YELLOW SCORES AT ANY ONE TIME

	Date:																	
	Time:																	
RESP (write rate in corresp. box)	>30																	>30
	21-30																	21-30
	11-20																	11-20
	0-10																	0-10
Saturations	95-100%																	11-20
	<95%																	95-100%
Administered O_2 (L/min.)																		%
TEMP ■	39																	39
	38																	38
	37																	37
	36																	36
	35																	35
HEART RATE ■	170																	170
	160																	160
	150																	150
	140																	140
	130																	130
	120																	120
	110																	110
	100																	100
	90																	90
	80																	80
	70																	70
	60																	60
	50																	50
	40																	40
Systolic blood pressure ↑	200																	200
	190																	190
	180																	180
	170																	170
	160																	160
	150																	150
	140																	140
	130																	130
	120																	120
	110																	110
	100																	100
	90																	90
	80																	80
	70																	70
	60																	60
	50																	50
Diastolic blood pressure ↓	130																	130
	120																	120
	110																	110
	100																	100
	90																	90
	80																	80
	70																	70
	60																	60
	50																	50
URINE	passed (Y/N)																	passed (Y/N)
Amount																		Amount
Proteinuria	protein ++																	protein ++
	protein >++																	protein >++
Amniotic fluid	Clear/Pink																	Clear/Pink
	Green																	Green
NEURO RESPONSE (✓)	Alert																	Alert
	Voice																	Voice
	Pain																	Pain
	Unresponsive																	Unresponsive
Pain Score (no.)	0-1																	0-1
	2-3																	2-3
Lochia	Normal																	Normal
	Heavy / Fresh Offensive																	Heavy / Fresh Offensive
Looks unwell	NO (✓)																	NO (✓)
	YES (✓)																	YES (✓)
Total Yellow Scores																		
Total Red Scores																		

OBSERVATION CHART TO BE USED FOR ALL WHO ARE PREGNANT OR POST PARTUM WOMEN

Date: _____
Ward: _____
Gestation: _____
Diagnosis: _____
Consultant: _____

Addressograph

PAIN SCORE –

1. **Respiratory Rate** - Whilst the patient is at risk the respiratory rate should be counted for 1 minute

2. **SEDATION SCORE**

Awake	0
Dozing intermittently	1
Mostly sleeping	2
Difficult to waken	3
Normal sleep record as	S

3. **PAIN SCORE**

Ask the patient "Which word describes best the pain you have when you move?"

NO pain	0
MILD Pain	1
MODERATE Pain	2
SEVERE pain	3

Straight leg raises R and L 4 hourly – record 1 hourly until full movement.

OBSERVATIONS

PCA – 2 hourly for duration of treatment.
Intrathecal opiates -½ hourly for 2 hours, then 2 hourly for 24 hours.
Intramuscular/subcutaneous/oral analgesia – refer to algorithm.

Abnormal ranges `are defined on the MEOWS chart (see Appendix 1). Referral should be made as defined below