THE ROYAL FREE HOSPITAL NHS TRUST
MATERNITY CLINICAL GUIDELINES

MEOWS Guidance in Maternity

Author(s):	Annmarie Breslin, Practice Development Midwife
Contact author:	Annmarie Breslin
Other contributors:	Alan McGlennan, Consultant Anesthetist
Previous authors:	
Related guidelines or documents:	RFH Observations of Pulse Adult 2008. RFH Recording Blood pressure 2006. Neurological Observations 2009 CEMACH 2007 London CLOMA guidelines 2009. PET guidelines 2008
Approved by:	The Labour Ward Forum and Guidelines Group on behalf of the Women's and Children's Directorate
Issue no:	May 2009
File name:	MEOWS
Key words: (up to 10)	MEOWS. Physiological observations.
Supercedes:	This is a new guideline
Lead Consultant for Labour ward	Muhannad Zakaria
Labour Ward Manager	David Connor
Director of Midwifery	Mai Buckley
For Review:	May 2012 / or in response to practice developments

Recording of physiological observations in Maternity

Background information:
All women who enter an acute hospital setting should have their observations recorded on a MEOWS chart this includes: DAU, Triage, 5 South and Labour Ward, [NICE guideline 50]. The minimum frequency of observations as an in-patient is 12 hourly. Intrapartum care observations should be recorded on a MEOWS chart irrespective of place of birth.

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

There is a potential for any woman to be at risk of physiological deterioration and this can not always be predicted. There is also evidence that there is poor recognition of deterioration in condition [CEMACH 2005]

The early detection of severe illness in mothers remains a challenge to all professionals involved in their care.

The relative rarity of such events combined with the normal changes in physiology associated with pregnancy and childbirth compounds the problem.

For example changes in physiological observations in pregnancy might include:

- Heart increase 15-20 bpm
- Respiratory Rate increase 2 breaths per minute
- BP decrease 10 mmhg

Regular recording and documentation of vital signs will aid recognition of any change in a woman's condition. The use of MEOWS charts prompts early referral to an appropriate practitioner who can undertake a full review, order appropriate investigations, resuscitate and treat as required.

CEMACH reports that health care professionals failed to identify warning signs of impending collapse.
Modified early warning scoring systems improve the detection of life threatening illness.

Frequency of Observations is determined by:

- **Risk Status**
- **Diagnosis**
- **Reason for admission**
- **Initial observations on admission**

An individual plan of care should be made by the Midwife and Doctor which should specify the frequency of physiological observations and where they are documented.

The following observations are required on all women

MEOWS Chart first page

Temperature [4hrly]
Blood pressure
Respiratory Rate
Pulse

Saturations and O2 therapy [If woman in CLOMA or woman triggers]

MEOWS Chart second page

Urine tick Y or N
[Record measured input and output on separate Fluid balance chart]

Neuro response
Pain score[post op only]
Lochia [Post natal]
Looks unwell
Trigger

PARTOGRAM

Fetal heart rate ¼hrly 1st stage and every five minutes second stage

V.E findings 4 hourly

Contraction frequency every 30 minutes.

Amniotic fluid record hourly

Maternal pulse hourly *
[Duplication of pulse rate required to comply with NICE Intrapartum guidelines requires a comparison between the FH and maternal pulse hourly.]

New notes: record maternal activity and fifths palpable

Documentation in case notes

Initial observations on the assessment proforma.

In the main body of the notes record your observation frequency and where the observations will be recorded.

This will be based on clinical history, risk status, diagnosis, reason for admission and baseline observations.

Hourly systematic CTG review and categorisation;
DR C BRAVADO and green sticker for categorisation

Routine observations should not be recorded in the handwritten progress sheets.

Epidural chart record 5 minute BP's for 15 minutes post top up

CTG

Record Clinical interventions:

Take over of care by new professional

- **VE**
- **ARM**
- **Epidural top up,**
- **Ward round review**
- **Hourly buddy review by second midwife.**

MEOWS Observations

Women should retain the same MEOWS chart when moving from one clinical area to another so that physiological trends can be observed.

A full set of observations is required at each assessment as there are 5 physiological variables that are regularly measured:

- Respiratory rate
- Pulse rate
- Blood pressure
- Temperature [4hrly]
- Mental state

Respiratory rate:

Respiratory rate is the most sensitive indicator of deteriorating physiology and must be recorded in all women every time a full set of observations are taken.

Respiratory rate is the best marker of a sick woman and is the first observation that will indicate a problem or deterioration in condition.
Respiratory rate is a mandatory observation.

Pulse rate:

Tachycardia is highly significant of an unwell woman.
It is recommended that you take a manual pulse once a day to assess volume and regularity and maintain competency of the practitioner.
Pulse rate can be monitored via a saturation probe on the finger.
Cautions:

- If the woman is peripherally shut down in cases of haemorrhage the pulse oxymmetry probe will not detect the pulse accurately.
- Pulse properties such as volume and regularity can not be assessed
- Nail varnish affects wave form accuracy

Refer to RFH Trust policies Observations of Pulse Adult 2008

Oxygen Saturation:

Oxygen saturations are not routinely monitored on pregnant women unless they are in Cloma, or become unwell, or have an increase or decrease in their respiratory rate or medical/obstetric condition necessitates use.

All women who TRIGGER require their oxygen saturations to be monitored

- Normal > 95% on air
- If on 02 therapy record percentage of O2 in use [%]
- In the clinical judgement of the midwife if saturation monitoring is not required record not applicable on the MEOWS chart.

Refer to MEOWS Chart (Appendix 1) for advise on red and yellow triggering

Blood pressure:

Use of the correct cuff size for the woman is vitally important for the accuracy of recordings of blood pressure especially in the obese woman.

	Width [cm]	Length [cm]	Arm circumference cm]
Normal	12.0-13.0	23	Up to 33
Large adult	12.5-13.0	35	Up to 42

All pregnant women with a systolic blood pressure of 160mm/Hg or more require anti-hypertensive treatment and a reading of 160 triggers a red score. [CEMACH 2005].

Falling BP should be regarded as a late sign of deterioration [peri mortem] as pregnant women can loose up to 30-40% of their circulating blood volume with no change to their vital signs especially BP.

Cautions:
Electronic recordings of blood pressure can underestimate readings by up to 5%.
It is recommended good practice that if blood pressure is raised on dynamat readings this should be rechecked manually at least once using an aneroid BP machine.

Urine output

The 6th physiological variable is urine out put and should be charted on a separate fluid balance chart.
Post operative women and women in Cloma use HDU fluid balance chart

The optimum urine output is 1ml/kg/hr the minimum urine output 0.5ml/kg/hr

Fluid balance charts should be employed in the following circumstances:

- **Post operatively: this must record the peri operative fluids administered refer to anaesthetic sheet and included in the verbal hand over by the anaesthetist.**
- **Women receiving IV fluids must have a fluid balance chart**
- **Post partum haemorrhage of more than 500mls**
- **PET refer to PET policy and administration of magnesium sulphate observations.**
- **Woman in CLOMA [use HDU fluid balance chart]**
- **Women who are catheterised including first two voids on excatheterization**

When a fluid balance chart is in use it should be accurately filled in with both measured input and output. Entries such as OTT [out to toilet] are not acceptable care or record keeping.

Conscious level

The conscious level should be assessed on all women and recorded using an AVPUI scale.

A	**Alert and conscious**
V	**Responds to voice**
P	**Responds to pain**
U	**Unresponsive**

- Ø Refer to the Trust's neurological observations guideline 2009

The physiological parameters recorded on the MEOWS chart are not all inclusive other observations that are important to the identification of a deterioration in the woman's condition include:

- Ø Symphisis fundal height, it is important to note the height of the fundus any rise could indicate haemorrhage, which may be concealed.
- Ø Increase in abdominal girth.
- Ø Capillary refill which should be less than 3 seconds, delay indicates hypovolaemia
- Ø Temperature of peripheries
- Ø Haemacue testing: Haemacue machines are available in all clinical areas and should be used in all cases of haemorrhage to obtain immediate haemoglobin estimation.

Triggering on MEOWS CHART

Scoring 1 observation in the Red or two observations in the Yellow

It is important to remember when the woman triggers she requires

- Ø Referral to appropriate level Doctor
- Ø Monitoring
- Ø Review
- Ø Investigations
- Ø Plan of care

Recognition of deterioration in condition does not necessarily mean diagnosis but does mean investigation and appropriate level referral involving a multidisciplinary approach.

Actions to take when a woman is Triggering on the MEOWS Chart

Immediate midwifery measures escalation pathway

- Ø Know which level of clinician you are bleeping Obs StR bleep 2345
- Ø Inform the labour ward co coordinator.
- Ø Make sure you have all the information you need to hand notes, charts, blood results.
- Ø State who you are and the woman's name and history.

- Ø State the current problem giving the observation findings and state which ones are triggering.
- Ø If raised systolic or diastolic report any prodomal signs such as headache, nausea, vomiting, upper epigastric pain.
- Ø Be clear about your expectations of the clinician that the woman requires a bedside review in less than 10 minutes.

Immediate midwifery measures continued

- Ø Increase observation frequency to ¼ hourly.
- Ø Explanation of plan of care to the woman and relatives.
- Ø Ensure you have senior midwife help and consider location of the woman. Arrangements may need to be made to transfer to labour ward or Cloma.
- Ø Monitor saturation levels.
- Ø Give O2 via face mask if required assess patent airway, is the woman awake and talking. Ask her about any signs or changes she perceives.
- Ø Check IV lines are running and no signs of extravasations at the site.
- Ø Check the drug chart and ensure medications have been administered, report time of delay of any drugs especially anti hypertensives.
- Ø Consider optimum positioning sitting upright or lowering bed head. Ensure safe environment use of cot sides. If antenatal apply left lateral tilt 15-30 degrees and commence CTG.
- Ø Ask the midwife assisting to obtain any outstanding blood results from the lab.
- Ø Bring ECG machine, haemacue, arterial blood gases to bedside prepare blood bottles.
- Ø Maintain contemporaneous record in notes detailing plan of care.

Escalation procedure when Obstetric StR is unable to review in 10 minutes.

- Ø If the StR is not able to attend within 10 minutes bleep anaesthetic StR 1901.
- Ø There are anaesthetic StR's available from theatre that will assist
- Ø Consider PART team involvement bleep 2525
- Ø Consider early Obs Consultant and Anaesthetic Consultant involvement
- Ø Bleep 1206 for manager on call assistance as required
- Ø If StR has deputized an ST1-2 to immediately attend then the midwife and coordinator need to assess appropriate level of clinician attending and consider escalation as above.
- Ø It is important to care for the woman in the most appropriate clinical area if this is not possible then a delay in transfer must not delay immediate investigations such as ECG, arterial blood gases or ordering of a CXR. Full review of the woman continues including ABCD, notes review, history taking examination.

Staff training requirement –Yearly update on maternal BLS and MEOWS on mandatory training programme as minimum per CNST requirement.

MEOWS Chart compliance will be audited using the attached MEOWS audit charts refer to appendix

Action: _____

- Attend within 10 minutes or send deputy
- Confirm observations
- Take history & examination
- Decide on differential diagnosis

Options: _____

* Reset trigger levels
* Make intervention (fluid, oxygen, etc)
* Decide on relocation (CLOMA, theatre,ITU
* Consider involvement of PART team on bleep 2525
* Make referral and consider appropriate escalation

Must: _____

* Decide when to reveiw
* Write clear plan in notes

The Royal Free Hampstead NHS Trust - Observation Chart

Maternity Observation Chart

If Unresponsive Call 2222

Patient Triggers?

(**1 mark** in the red zone or **2 marks** in a yellow zone)

Midwife Action:

- Start 1/2 hourly Observation
- Give oxygen at 10 l/min
- Review observation chart
- Review drug prescription chart
- If pregnant, then tilt

↓

Call Obstetrician Spr to attend.
Bleep 2345

↓

Patient Improves?

↓ ↓

Continue hourly observations

Anaesthetic Spr to attend.
Bleep 1901

Consider informing obstetric and anaesthetic consultant

↓

Failure to improve
Consider PART involvement
2525
Consider ITU

Name:	Ward:	Consultant:
Hospital Number:	Date of Birth:	Height:

Date:																		
Time:																		

Temperature °C

39																			39
38																			38
37																			37
36																			36
35																			35

Individual Parameters >37°

.....

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

Individual Parameters SBP>

.....

MAP mmHg

Diastolic blood pressure

130																			130
120																			120
110																			110
100																			100
90																			90
80																			80
70																			70
60																			60
50																			50
40																			40

Individual Parameters DBP:

.....

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

Individual Parameters Pulse Rate:

.....

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 0_2 (L/min.)																			%

Individual Parameters Resp. Rate:

.....

Date:																			
Time:																			

URINE	passed (Y/N)																		passed (Y/N)
Proteinuria	protein ++																		protein ++
	protein >+++																		protein >+++
Urinalysis																			
Oedema (Y/N)																			
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	**N**ormal																		**N**ormal
	Heavy/**F**resh/ **O**ffensive																		**H**eavy/**F**resh/ **O**ffensive
Looks unwell	NO (✔)																		NO (✔)
	YES (✔)																		YES (✔)
Trigger	NO (✔)																		NO (✔)
	YES (✔)																		YES (✔)

Wound Site Check																		
Blood Glucose																		
Nausea Score																		
Bowel Action																		
Daily Weight																		

Neuro Responses	
Alert	Patient is alert and concious
Verbal	Patient responds to verbal stimulus
Pain	Patient responds to painfull stimulus
Unresponsive	Patient is unresponsive to any stimulus

PAIN SCORE (assess pain on movement, deep breathing or coughing)		
	• No pain at rest or on movement	0
	• No pain at rest, slight pain on movement	1
	• Intermittent pain at rest, moderate pain on movement	2
	• Intermittent pain at rest, moderate pain on movement	3
NAUSEA SCORE		
	• None	0
	• Nausea	1
	• Vomiting	2

Appendix 2

Royal Free Hampstead NHS
NHS Trust

5 South: MEWS Chart Daily Compliance Audit Tool
To be completed by Coordinator at 0800hr and 2000hr
Date ……. Time …….

Completion of AUDIT ☐ a **Details present** ☐ **× Details omitted**

Location	Occupied	Mews Chart	Temp BP Pulse	Resp Rate	SATS &02 or N/A	2nd Page completed	Trigger Box completed	Feedback to midwife. Print Name
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

16								
Location	**Occupied**	**Mews Chart**	**Temp BP Pulse**	**Resp Rate**	**SATS &02 or N/A**	**2nd Page completed**	**Trigger Box completed**	**Feedback to midwife. Print Name**
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

No of rooms occupied ……. No of MEWS Charts ……. No of charts missing data …….. Midwife Coordinating Shift …….

Royal Free Hampstead NHS
NHS Trust

Labour Ward MEWS Chart Daily Compliance Audit Tool
To be completed by Labour Ward Coordinator at 0800hr and 2000hr ward rounds.
Date …….. Time ……..

Completion of AUDIT ☐ a **Details present** ☐ **× Details omitted**

Location	Occupied	Mews Chart	Temp BP Pulse	Resp Rate	SATS &02 or N/A	2nd Page completed	Trigger Box completed	Feedback to midwife. Print Name
Room 1								
Room 2								
Room 3								
Room 4								
Room 5								
Cloma 1								
Cloma 2								
Cloma 3								
Birth Centre 6								
Birth Centre 7								
Birth Centre 8								

No of rooms occupied ……. No of MEWS Charts ……. No of charts missing data …….. Midwife Coordinating Shift …….

References

CEMACH 2007 Saving Mother's Lives 2003-2005, London, CEMACH

NICE Guideline 50 July 2007

NPSA Report November 2007

Observations of Pulse Adult 2008 RFH

Monitoring Blood Pressure 2006 RFH

Neurological guidelines 2009 RFH

PET Guideline 2008

CLOMA Guideline 2009