	DIVISIONAL DOCUMENT
Delete as appropriate	Clinical Guideline
DOCUMENT TITLE:	**The Deteriorating Maternity Patient - incorporating the MEOWS (Modified Early Obstetric Warning Score)**
DOCUMENT NUMBER:	**Guideline: 40a v2**
DOCUMENT REPLACES Which Version	G40a v1 G40 v 2.2 – NB: Previous guideline titled The Severely Ill Woman and High Dependency Care incorporating the MEOWS (Modified Early Obstetric Warning Score)
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TARGET AUDIENCE:	Midwives, Obstetricians, Anaesthetists, Maternity Support Workers.
DOCUMENT PURPOSE:	To describe the detection and management of severe illness in mothers.

To be read in conjunction with (identify which internal documents)	ELHT Maternity Services Clinical Guideline10: Infection & Prevention of Infection ELHT Maternity Services Clinical Guideline 17: Gestational Hypertension, Pre Eclampsia & Eclampsia ELHT Maternity Services Clinical Guideline31: Recovery after Obstetric Surgery following general or regional anaesthesia ELHT Maternity Services Clinical Guideline 40b: Close Observation Unit
SUPPORTING REFERENCES	Lewis, G(Ed) (2007) the Confidential Enquiry into Maternal and Child Health (CEMACH). Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer - 2003-2005. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH. Royal College of Obstetricians and Gynaecologists, Royal College of Midwives, Royal College of Anaesthetists, Royal College of Paediatrics and Child Health (2007) SAFER CHILDBIRTH. Minimum Standards for the Organisation and Delivery of Care in Labour. London: RCOG Press Intensive Care Society, Levels of Care for Adult Patients: Standards and Guidelines (ICS, 2002).

CONSULTATION		
	Committee/Group	Date
Consultation via:	CBS forum	May 2017
Approval Committee	Women and Newborn QSB	September 2021
Ratification date at WNQSB	9th September 2021	
NEXT REVIEW DATE:	September 2024	
AMENDMENTS:	Previous version of guidance now separated into Part a and Part b Amendments to frequency of MEOWS –following obstetric surgery; for AN inpatients and other PN women Addition of intrapartum MEOWS p6 Addition of gestation for use of chart New MEOWS chart added.	

	NB: - Guideline reviewed fully and updated in May 2017 and ratified at WNQSB however not uploaded until August 2018 as awaiting ne MEOWS chart July 2021 – Full Review. No updates

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40a.1 Introduction

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

The Confidential Enquiry into Maternal and Child Health (CEMACH) highlighted the need for improved education, training and good lines of communication to ensure optimum care for the severely / critically ill mother. The Modified Early Obstetric Warning Scoring System (MEOWS) was one of the ten key recommendations from CEMACH and this essential tool must be used for all acute obstetric admissions.

40a.2 The Measurement of Women's Observations

- Women's parameters/observations must be measured by any member of staff who has been fully trained to do so.
- All chart entries must include the time and date and be clear and legible.
- Each set of observations taken must include pulse rate, respiratory rate, blood pressure (systolic and diastolic), temperature, oxygen saturation and the neurological status must be assessed.

MEOWS must be used for all pregnant women from a positive pregnancy test up to 42 days postnatal irrespective of where they present.

Where women are in labour a partogram will be used and where women require higher dependency care a close observation chart will be used. Both of these charts will include the MEOWS.

This chart should only be used for documenting maternal observations. Fetal well-being should be monitored in accordance with specific care plans and documented in the mother's health records.

40a.3 Process for use of Maternity Early Warning Scores (MEOWS) – frequency and timings

At initial assessment a baseline MEOWS will be performed, if the woman is then admitted the frequency of the observations thereafter will be as detailed in the table below:

Condition	Frequency (as a minimum)
Minimum frequency of MEOWS for any in patient in ELHT	Twice daily
All Antenatal inpatients	On admission, then 4 hourly until discharge or onset of labour
Intrapartum	On admission, then 4 hourly until delivered
Diastolic Blood Pressure ≥ 90 or systolic >140	Minimum 4 hourly
Low risk postnatal women	If MEOWS score within normal limits when checked within 6 hours following birth, and the mother remains an inpatient MEOWS will need to be undertaken twice daily.
Following obstetric surgery including – any procedure involving intrathecal or epidural diamorphine or a PCA; LSCS, instrumental deliveries in theatre, perineal repairs, MROP	These observations will include those ones also required for the anaesthetists i.e. pain, sedation, nausea and itching etc. Following procedure- Half hourly for 2 hours THEN Hourly for further 2 hours THEN 2 hourly until 12 hours after injection of epidural diamorphine or while on PCA THEN 4 hourly until 24 hours After 24 hours twice daily until discharge, provided not scored more than 1 in the previous 12 hours. Continue 4 hourly until not scoring more than 1 for 12 hours
Other postnatal women (including operative vaginal delivery, PPH, readmission or other complications during labour).	As a minimum 4 hourly for 24 hours then twice daily until discharge. If score is > 1 repeat after in 1 hour and inform the shift leader. A plan of care and ongoing frequency of observations should be documented and as a minimum 4 hourly until less than one for more than 12 hours.
Women having a blood transfusion antenatally , intrapartum or postnatally	Follow instructions for frequency of carrying out Early Warning Scores prior to and during transfusion as documented on Blood transfusion checklist

Frequency of Observations can be ±15 minutes when the frequency is 4 hourly or greater. Clinical judgement can be used in individual cases but reasons for deviating from the recommended frequency should be documented.

40a.4. Guidance when completing the form

40a.4.1 Respiratory rate - Respiratory rate is the single most important parameter for early detection of deterioration and should be measured at **ALL** monitoring events

40a.4.2 Heart rate - Heart rate is the key parameter for early detection of critical illness in the maternal obstetric patient. Tachycardia may be the **ONLY** sign of deterioration at an early stage and a tachycardic woman should be considered hypovolaemic until proven otherwise**.**

40a.4.3 Temperature - Temperature change may not necessarily be an effective measure of deterioration. A **fall or rise** in temperature may indicate sepsis, and a sepsis screen and appropriate antibiotic therapy should be considered.

40a.4.4 Blood Pressure - Hypotension is a **late sign** of deterioration as it signifies decompensation and should be taken very seriously. The physiological changes caused by pregnancy and childbirth can mean that early signs of impending collapse are not easily recognised.

Hypertension – **ALL** pregnant women with a systolic blood pressure of 160mm/Hg or higher must be treated (Lewis 2007). (See also ELHT Maternity Services Clinical Guideline 17: Gestational Hypertension, Pre Eclampsia & Eclampsia)

40a.4.5 Oxygen saturation - This is also an important parameter. The rate of administered oxygen (L/min) should also be documented underneath the saturations.

If a woman requires Oxygen to maintain saturations in the normal range then a score of 2 should be added to the MEOWS score.

40a.4.6 Neuro response - AVPU is a measure of consciousness and the best response of the following should be documented:

A – Alert	Fully awake woman (not necessarily orientated)
V – Voice	Drowsy but answers to name or some kind of response when addressed
P – Pain	Rousable with difficulty, but makes a response when shaken or mild pain is inflicted (e.g. rubbing sternum, pinching ears)
U – Unresponsive	No response to voice, shaking or pain

A **fall** in AVPU score should always be considered significant.

40a.4.7 Scoring and responding: All the scores for all parameters should be calculated using the grid (see Appendix 1, reverse of MEOWS chart), documented and signed at bottom of the chart. This constitutes the MEOWS score. The response required depends on the score (see Appendix 1, reverse of MEOWS chart).

Women who score 0 should have their observations repeated as per the frequency requirements for their condition.

The MEOWS is used to complement clinical care and does not replace clinical judgement. Clinical concerns irrespective of the MEOWS should be escalated to the relevant medical staff.

Women who score 1 should have their observations repeated in 1 hour. If they continue to score 1 the shift leader should be informed and a plan of care and ongoing frequency of observations documented. As a minimum observations should be increased to 4 hourly or more frequently if clinical judgement suggests possible deterioration. Women who persistently score 1 over a 24 hour period should be reviewed by the first on call obstetrician. If their MEOWS drops to 0 then monitoring can return to routine frequency.

40a.4.8 Other observations -The chart also includes space to document reflexes, the presence of proteinuria, whether the woman has passed urine and blood glucose. These observations are not used to calculate the MEOWS score so do not have to be filled in every time a MEOWS score is undertaken. They should be filled where appropriate for each woman.

40a.4.9 Urine Output - Urine output is one of the few signs of end-organ perfusion. This chart only identifies if urine is passed or not. Where indicated, a

fluid balance chart should be used to document urine measurements in conjunction with this chart.

40a.4.10 Pain Scores - Pain assessments are often inadequate in hospital. Pain levels should be recorded as follows:

0 – No pain
1 – Mild pain
2 – Moderate pain
3 – Severe pain

40a.4.11 Anaesthetic Observations - Women who have had an anaesthetic require extra observations. These include the presence of a venflon, sedation, nausea, itching, pain score and total PCA used. These should be documented on the MEOWS chart along with the basic physiological parameters but are not used to calculate the MEOWS. Instructions on how to measure these parameters and how to escalate abnormalities are to be found on the anaesthetic guidance.

(See ELHT Maternity Services Clinical Guideline 31: Recovery after Obstetric Surgery following general or regional anaesthesia)

Physiological Parameters

PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
RESPIRATION RATE		<8		9 - 20	21 - 25	26 - 30	>30
OXYGEN SATURATIONS	<90	90 - 93	94 - 95	≥96			
ANY SUPPLEMENTARY OXYGEN/ DEVICE		YES		NO			
TEMPERATURE		≤35.0	35.1 - 36.0	36.1 - 37.4	37.5 - 38.0	38.1 - 39	≥39.1
SYSTOLIC BP	<80	80 - 89	90 - 99	100 - 140	141 - 160	161 - 170	>170
DIASTOLIC BP		≤40		41 - 89	90 - 99	100 - 110	>110
HEART RATE	<40	40 - 50	51 - 59	60 - 100	101- 110	111 - 120	>120
LEVEL OF CONCIOUSNESS				A	V	P	U / NC
URINE OUTPUT (ml)	<10 ml / hr	< 50 ml/2hr OR no PU 6hr & no bladder	<100 ml / 4hr	≥100 ml / 4hr			

PAIN / ANAESTHESIA SCORES

SCORE	0	1	2	3	4
PAIN	No Pain	Mild	Moderate	Severe	Agonising
NAUSEA	None	Not Distressed	Distressed	Vomited ≤3 in 24hours	Vomited >3 times in 24hours
SEDATION	Awake	Sleepy	Verbally Rousable	Physically Rousable	Not Rousable

ESCALATION RECORD

Escalated to: (Please document the Bleep Number & the name of the person called)	Time Called:	Print Name:	Signature

Safe | Personal | Effective

Attach patient label here

Hospital No: DOB:

First Name: M / F: Religion:

Last Name: GP:

Address:

NHS No:

Date Chart commenced: _____

NHS
East Lancashire Hospitals
NHS Trust

MEOWS Observation Chart

Modified Early Obstetric Warning Score

To be applied to all women who are pregnant or up to 6 weeks postpartum (or after the end of pregnancy, if the pregnancy did not end in a birth)

MODIFIED EARLY OBSTETRIC WARNING SCORE (MEOWS)	RISK	FREQUENCY OF OBSERVATIONS	ESCALATION PROTOCOL
0	LOW	Minimum of 12 hourly (BGH) Minimum of 8 hourly (RBH) Minimum of 4 hourly (ANTENATAL)	
1	LOW	Repeat MEOWS in 1 hour	Inform Shift Leader if continues to score after 1 hour and document plan of care and ongoing frequency of observation.
2 - 3	LOW	Recheck MEOWS in 1 hour	Inform Shift Leader and 1st On call Obstetrician. Make a Plan of Management. Record action in casenotes.
4 – 6 or scoring 3 in any one parameter	MEDIUM	Rescore MEOWS in 30 minutes. Minimise hourly observations thereafter. (If scoring for three consecutive hours discuss with Consultant)	Inform Shift Leader and 2nd On call Obstetrician and appropriate Doctor (ST3+), to attend within 1 hour of receiving the call. Make a Plan of Management. Record action in casenotes.
7 or above	HIGH	Repeat observations every 15 minutes	Case MUST be discussed with Consultant Obstetrician and/or Consultant Anaesthetist and appropriate Doctor (ST5+), to attend the ward within 15 minutes of receiving the call. Consultant to consider moving patient to higher level of care. Make a Plan of Management. Record action in casenotes.

If you place oxygen on your patient and the MEOWS score reduces you must still contact the Doctor to review the patient

Parameter	Adjusted Range	Score	Signature

Instruction/Information on Completion

- A full set of clinical observations MUST be completed for all patients, not just single parameters
- All Escalation of MEOWS Scores MUST be documented on the back of this chart in the table provided
- For patients who have chronically abnormal physiology a Senior Clinician will be able to modify the level at which the MEOWS triggers a particular response
- Regardless of the MEOWS Score if a patient is deemed sick the patient should be escalated to the appropriate Clinician
- Please attach PCA/Epidural/Intrathecal Diamorphine charts to the MEOWS Chart
- Patients on more than 60% or 15 litres of Oxygen MUST be reviewed by Anaesthetist and referral to Critical Care to be considered

IMPORTANT: All patients presenting outside of Maternity Services at East Lancashire Hospitals NHS Trust who have had a positive pregnancy test, please inform:

During working hours: The Obstetrician carrying Bleep 199 (RBH) OR Bleep 074 (BGH), who will be available to give advice or see urgent pregnant women presenting in other areas of the Trust & Shift Coordinator.

Outside of working hours: The Senior Obstetrician On call via the Central Birthing Suite on ext. 14232/14323 to give advice and ensure appropriate reviews are arranged.

DOES YOUR PATIENT HAVE A MEOWS ≥ 2 AND POTENTIALLY AN INFECTION?

YES

YOUR PATIENT MAY BE DEVELOPING SEPSIS

ACT NOW

SCREEN THEM USING THE INPATIENT MATERNAL SEPSIS SCREENING AND ACTION TOOL

ETS452 MEOWS CHART V13. ISSUE DATE: JUNE 2018. REVIEW DATE:2021

EWS Key 0 1 2 3	DATE																					DATE
	TIME																					TIME
	WARD/DEPT																					WARD/DEPT
A + B RESP RATE (Enter Numbers)	>30								3	3												>30
	28-30								2	2												28-30
	21-25								1	1												21-25
	9-20								0	0												9-20
	<8								2	2												<8
A + B SPO2 (Enter Numbers)	≥96%								0	0												≥96%
	94-95%								1	1												94-95%
	90-93%								2	2												90-93%
	<90%								3	3												<90%
SUPPLEMENTARY O2	AIR = A								0	0												AIR = A
	O2 % / MIN								2	2												O2 % / MIN
	DEVICE								N/A	N/A												DEVICE
C SYSTOLIC BP (Enter Numbers)	>170								3	3												>170
	161 - 170								2	2												161 - 170
	151 - 160								1	1												151 - 160
	141 - 150								1	1												141 - 150
	130 - 140								0	0												130 - 140
	120 - 129								0	0												120 - 129
	110 - 119								0	0												110 - 119
	100-109								0	0												100-109
	90-99								1	1												90-99
	80-89								2	2												80-89
	<80								3	3												<80
C DIASTOLIC BP (Enter Numbers)	>110								3	3												>110
	100-110								2	2												100-110
	90-99								1	1												90-99
	81-89								0	0												81-89
	71-80								0	0												71-80
	61-70								0	0												61-70
	51-60								0	0												51-60
	41-50								0	0												41-50
	<40								2	2												<40
C HEART RATE (Enter Numbers)	>120								3	3												>120
	111-120								2	2												111-120
	101-110								1	1												101-110
	91-100								0	0												91-100
	81-90								0	0												81-90
	71-80								0	0												71-80
	60-70								0	0												60-70
	51-59								1	1												51-59
	40-50								2	2												40-50
	<40								3	3												<40
D LEVEL OF CONSCIOUSNESS	ALERT (A)								0	0												ALERT (A)
	Voice (V)								1	1												Voice (V)
	Pain (P)								2	2												Pain (P)
	Unresponsive (U)								3	3												Unresponsive (U)
	New Confusion (NC)								3	3												New Confusion (NC)
E TEMPERATURE C° (Enter Numbers)	≥38.1C°								3	3												≥38.1C°
	38.1 - 38C°								2	2												38.1 - 38C°
	37.5 - 38C°								1	1												37.5 - 38C°
	36.1 - 37.4C°								0	0												36.1 - 37.4C°
	35.1 - 36C°								1	1												35.1 - 36C°
	≤35C°								2	2												≤35C°
URINE OUTPUT (ml)	≥ 100 ml / 4hr								0	0												≥ 100 ml / 4hr
	<100 ml / 4hr								1	1												< 100 ml / 4hr
	< 60 ml /2hr OR no PU 6hr & no bladder								2	2												< 60 ml / 2hr OR no PU 6hr & no bladder
	< 10 ml / hr								3	3												< 10 ml / hr
DOES YOUR PATIENT HAVE A MEOWS ≥ 2 AND POTENTIALLY AN INFECTION? YES YOUR PATIENT MAY BE DEVELOPING SEPSIS ACT NOW SCREEN THEM USING THE INPATIENT MATERNAL SEPSIS SCREENING AND ACTION TOOL	TOTAL SCORE																					TOTAL SCORE
	ESCALATED?																					ESCALATED?
	BLOOD GLUCOSE																					BLOOD GLUCOSE
	PROTEINURIA - DIP URINE (MIN. DAILY)																					PROTEINURIA - DIP URINE (MIN. DAILY)
	ANAESTHETICS																					ANAESTHETICS
	PAIN SCORE																					PAIN SCORE
	TOTAL PCA (mg)																					TOTAL PCA (mg)
	NAUSEA																					NAUSEA
	SEDATION																					SEDATION
	INITIALS																					INITIALS