

## Joint Trust Guideline for the use of the Modified Early Obstetric Warning Score (MEOWS) in Detecting the Seriously Ill and Deteriorating Woman

### A Clinical Guideline

<b>For Use in:</b>	Maternity Services.
<b>By:</b>	Obstetricians, Midwives and Midwifery Care Assistants.
<b>For:</b>	All women receiving care from maternity services.
<b>Division responsible for document:</b>	Women's and Children's Services
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<b>If Yes - does the strategy/policy deviate from the recommendations of NICE? If so why?</b>	No

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## Version and Document Control:

Version Number	Date of Update	Change Description	Author
6.1	12/12/2018	Amendment made to MEOWS chart as a discrepancy was noticed with the diastolic BP, and when to score for a low diastolic.	Charles Bircher
6.2	03/07/2020	Document is now a Joint Document with QEH.	Charles Bircher
7	25/02/2022	Changes to oxygen saturation cut-off levels	Charles Bircher

## This is a Controlled Document

Printed copies of this document may not be up to date. Please check the hospital intranet for the latest version and destroy all previous versions.

## Quick reference guideline

The Modified Early Obstetric Warning Score (MEOWS) has been designed to allow early recognition of physical deterioration in parturient women by monitoring their physiological parameters. A score >0 triggers the use of a 'call out cascade' giving specific instructions regarding level of monitoring, referral for advice, review, and immediate actions to be considered (See appendix 2).

## Objective

This is to provide guidance for staff within the maternity services on recognising and monitoring the obstetric patient using the MEOWS chart. The aim is to enable early recognition of deterioration; advice on the level of monitoring required, facilitate better communication within the multidisciplinary team and ensure prompt management of any women whose condition is deteriorating.

## Rationale

It is recognised that early recognition of critical illness, prompt involvement of senior clinical staff and authentic multi-disciplinary team working remain the key factors in providing high quality care to sick pregnant and postpartum women (MBRRACE 2016)

MEOWS is a way of formalising measurement of physiological variables. The values of the observations are then translated into a summary score which has a critical threshold, above which medical review and intervention is required (see appendix 2 MEOWS call out cascade). It is believed that small changes in the combined physiological variables measured by MEOWS may pick up deterioration earlier than an obvious change in an individual variable. Early detection will trigger subsequent prompt intervention that will either reverse further physiological decline or facilitate timely referral to appropriate personnel.

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In the last two 'Saving Mothers Lives' reports substandard care was identified where signs and symptoms were not recognised and acted upon. Both reports recommended that a national Obstetric Early Warning Scoring system should be introduced and used for all obstetric women, including those being cared for outside the obstetric setting (CEMACH 2007, CMACE 2011).

**Reduced or altered conscious level is not an early warning sign; it is a red flag which indicates established illness (MBRRACE 2016)**

The physiological changes of pregnancy may render the existing Early Warning score (EWS) systems inappropriate, (Gopalan PD 2004) and no validated system for use in the pregnant woman currently exists. Because of this, many maternity hospitals have developed their own modified EWS system.

Appendix 1 shows the MEOWS adapted for use at the NNUH. These are adapted from CEMACH 2007 which were studied in the validation study 2011 (Singh 2012). However, to make consistency with rest of the hospital, a score rather than a red/amber/green system is used.

The MEOWS is calculated by scoring the values of a full set of observations carried out routinely by staff which include:

- Temperature.
- Systolic blood pressure.
- Diastolic blood pressure.
- Heart rate.
- Respiratory rate.
- Oxygen saturations – in the community this is not always possible, so a score can be calculated in this situation without them. If there are concerns about a patients condition, either clinically or scoring on a MEOWS, they can be referred in.
- Level of consciousness using **AVPU** scale.
- +/- urine output.

<b>A - Alert</b>	<b>Alert and conscious</b>
<b>V - Voice</b>	<b>Responds to voice</b>
<b>P - Pain</b>	<b>Responds to pain</b>
<b>U - Unresponsive</b>	<b>No response to voice or pain</b>

It is the responsibility of the person carrying out the observations to alert the midwife caring for the woman if the MEOWS score is 1 or more. If the MEOWS is 1-3, it is then the responsibility of the midwife to decide if increased frequency of observations or a medical review is needed. If the MEOWS  $\geq 4$ , or 3 in any single parameter, the midwife must initiate the call out cascade. This is explained in appendix 2.

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## **Broad recommendations**

### **The Process for use of MEOWS**

- Every time a set of observations is performed on ante or post natal women, MEOWS should be calculated and recorded in the hand held records or on the observation chart as applicable.
- All women presenting to Triage/MAU who are having baseline observations carried out should have a MEOWS calculated and documented.
- Women in active labour do not require regular MEOWS scoring.
- All obstetric inpatients must have a full set of observations and a MEOWS calculated at every transfer to a new area (for example on transfer from Recovery to Blakeney ward). The MEOWS chart used in one area should be transferred with the patient to the next area in order to help identify changes in trends of observations.
- If you are concerned about a woman's condition a MEOWS should be attributed. If you are still concerned regardless of the MEOWS, seek advice.

### **Antenatal**

Frequency of observations will depend on the nature of the admission or as indicated by the lead clinician. As a minimum, a full set of observations should be carried out twice daily at least 12 hours apart. MEOWS should be attributed to each of these sets of observations.

### **Delivery Suite**

All women should have a set of observations and MEOWS recorded on admission to Delivery Suite or to Triage/MAU. Currently women who are in labour need not have MEOWS repeated. Regular observations should still be documented on the partogram as usual.

### **Recovery**

The theatre care plan will be used in Recovery. The MEOWS chart should be initiated in recovery by the recovery practitioner prior to transfer to midwifery care. The last set of observations taken in recovery should be recorded on both the theatre care and the MEOWS chart.

### **Postnatal**

All women should have a full set of observations on admission to the postnatal ward and should have this repeated a minimum of 12 hours apart. A MEOWS score should be attributed to every set of observations.

The frequency of observations will depend on the nature of the admission or as indicated by the lead practitioner.

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## **Community**

A MEOWS should be attributed to every set of postnatal observations and documented in the maternal records. Currently oxygen saturations are not included in a MEOWS score in the community. If there are clinical concerns about a patient, they can be referred in for a full assessment including oxygen saturations.

If MEOWS 1-3, observations should be repeated within 30 minutes. If the score remains  $>0$ , the midwife should contact Delivery Suite or A/E depending on the likely cause. If a MEOWS  $\geq 4$ , or 3 in any single parameter, the midwife does not need to wait for a repeat MEOWS before contacting the hospital.

Regardless of MEOWS if you are concerned about a woman's condition, do not hesitate to seek advice.

## **Management of patients in response to MEOWS**

The call out cascade (see appendix 2) sets out the action to be taken in response to individual MEOWS. This should be followed to ensure the appropriate clinicians are called and appropriate management and care is undertaken. All actions taken must be clearly documented in the handheld records along with a plan of care.

## **Summary of development and consultation process undertaken before registration and dissemination**

This guideline has been updated by C Bircher (Consultant Obstetrician) after discussion with the anaesthetic lead for Obstetrics (Jon Francis) and the Lead for the Trust R+R committee (M Irvine – consultant Anaesthetist)

## **References/ source documents**

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Gopalan PD, Muckhart DJ. The critically ill obstetric patient: what's the score? *Int J Obstet Anesth* 2004; 13:144–5.

Singh S, McGlennan A, England A, Simons R. A validation study of the CEMACH recommended modified early obstetric warning system (MEOWS)\*. *Anaesthesia* 2012, 67, 12–18

## Trust Guideline for the use of the Modified Early Obstetric Warning Score (MEOWS) in detecting the seriously ill and deteriorating woman.

### Appendix 1

Score	3	2	1	0	1	2	3
Temperature		<35 °c	35-35.9 °c	36-37.4 °c	37.5-37.9 °c	38.0-38.9 °c	≥39 °c
Systolic BP	≤70	71-79	80-89	90-139	140-149	150-159	≥160
Diastolic BP			≤49	50-89	90-99	100-109	≥110
Pulse		<40	40-49	50-99	100-109	110-129	≥130
Respiratory Rate	≤10			11-20	21-24	25-29	≥30
Oxygen Saturations	≤94%			≥95%			
AVPU				Alert	Responds to Voice	Responds to Pain	Unconscious
Urine output mLs/hr	<10	<30		Not Measured			

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## Appendix 2

### Modified early Obstetric Warning Score Call-Out-Cascade

MEOWS 1 - 3	<ul style="list-style-type: none"> <li>• Inform Registered Midwife (RM)</li> <li>• Ward RM must review patient and if any immediate clinical concerns, medical review</li> <li>• If no immediate clinical concerns, repeat observations within 30-60 minutes.</li> <li>• MEOWS remains 1-3 after repeat obs at 30-60 mins, request Tier 1 Doctor (SHO) to review within 30 minutes</li> </ul>
MEOWS $\geq$ 4 or 3 in any parameter  <b>THINK SEPSIS</b>	<ul style="list-style-type: none"> <li>• Inform Ward Co-ordinator/Registered Midwife (RM) <u>Ward Co-ordinator/RM must:</u></li> <li>• Review patient and request Tier 1 Doctor (SHO) to review within 30 minutes</li> <li>• If Tier 1 Doctor (SHO) unable to attend contact Obstetric Registrar (ST3-5) or Senior Registrar (ST6-7)</li> <li>• Commence 1hrly observations</li> <li>• Obtain urinalysis</li> <li>• Commence fetal monitoring if antenatal patient</li> </ul>
<b>MEOWS <math>\geq</math> 6</b>  <b>THINK SEPSIS</b>	<ul style="list-style-type: none"> <li>• Inform Ward Co-ordinator/Registered Midwife (RM) <u>Ward Co-ordinator/RM must:</u></li> <li>• Contact Obstetric Registrar, Senior Registrar and Anaesthetic Registrar and request urgent review</li> <li>• Drs to attend within 30 minutes</li> <li>• If Drs unable to attend then contact the Consultant Obstetrician on call and 4th on call anaesthetist</li> <li>• Drs to review and record management plan in notes</li> <li>• Consider Recognise and Respond Team call 4444</li> </ul>
If patient deteriorates further or fails to respond to treatment  <b>THINK SEPSIS</b>	<p><b>Don't delay, SEEK EXPERT HELP;</b>            Contact - Obstetric Consultant            Contact - Obstetric Anaesthetist            In an <b>emergency dial 2222</b>, state the emergency and ask for the - <b>Obstetric Emergency Team</b> and if the fetus compromised consider calling <b>Neonatal Emergency Team</b>.</p>
<b>Help needed            urgently?</b>	If the patient's condition continues to deteriorate and prompt medical review required, consider putting out an <b>emergency call (2222) Cardiac Arrest</b> call. If Critical Care Medical referral required bleep 0012