Physiological Observation of Maternity Patients protocol (CG500)

Approval and Authorisation

<table>
<thead>
<tr>
<th>Approved by</th>
<th>Job title or Chair of Committee</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternity &amp; Children’s Services Clinical Governance Committee</td>
<td>Chair, Maternity Clinical Governance Committee</td>
<td>5th January 2018</td>
</tr>
</tbody>
</table>

Change History

<table>
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<tr>
<th>Version</th>
<th>Date</th>
<th>Author</th>
<th>Reason</th>
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<tr>
<td>1.0</td>
<td>March 2007</td>
<td>R Jones, G Valentine, T Hamon</td>
<td>Trust requirement</td>
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<tr>
<td>2.0</td>
<td>July 2008</td>
<td>R Jones, G Valentine, T Hamon</td>
<td>Reviewed</td>
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<td>June 2009</td>
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<td>August 2011</td>
<td>R Jones, G Valentine</td>
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</tr>
<tr>
<td>5.0</td>
<td>December 2012</td>
<td>Jane Siddall, Gill Valentine</td>
<td>Reviewed &amp; transfer of high dependency care information from old policy</td>
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<tr>
<td>5.1</td>
<td>July 2014</td>
<td>G Valentine</td>
<td>Change to amend maternal pulse check from 15 mins to hourly in line with NICE guidelines</td>
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<td>G Valentine, G Jackson</td>
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<td>7.0</td>
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<td>G Valentine, G Jackson</td>
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Physiological Observation of Maternity Patients (CG500)

1.0 Purpose

- To offer guidance to midwives and other health care staff in performing appropriate physiological observations (vital signs) on healthy maternity patients.
- To determine the frequency of observations and when they should be stepped up or down.
- For unwell or deteriorating maternity patients, staff should refer to: ‘Recognition, High Dependency Care, and Transfer of Critically Ill Maternity Patients Protocol (CG489)’

2.0 Function and Scope

This guidance applies to all antenatal, intrapartum, postoperative and postnatal women.

3.0 Roles and Responsibilities

3.1 Director of Midwifery

The Director of Midwifery will:
- Ensure that a maternity specific policy for physiological observations is in place and in line with National guidance and the Trust Policy on physiological Observations for adults.

3.2 Lead Obstetrician

The Lead Obstetrician will:
- Ensure that all medical staff practice in line with this policy

3.3 Matrons

The Matrons will:
- Ensure the implementation of the policy into clinical practice across all care settings within maternity
- Ensure that standards contained In the policy are maintained and monitored

3.4 Line Managers

Line Managers will:
- Ensure that all staff comply with the policy and know the escalation requirements detailed within the policy
- Monitor compliance with the standards monthly through the ward accreditation audits
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- Ensure that observations are documented according to the policy

4.0 Definitions

MOWS – Maternity Modified Obstetric Warning System: A system to track maternal physiological parameters, and to aid early recognition and treatment of the acutely unwell woman.

5.0 Content

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

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

5.3 Not all deterioration can be predicted so therefore all women require regular recording and documentation of vital signs to aid recognition of any change in clinical condition.

5.4 Saving Mothers’ Lives review in 2011 (CEMACE) recommended that all Trusts should use an early warning scoring system for all obstetric women.

5.5 All antenatal and postnatal women’s observations should be recorded on the Maternity Modified Obstetric Warning System (MOWS) chart.

5.6 The use of the MOWS chart will highlight any changes in a woman’s clinical condition but should not be the only parameters used for physiological assessment.

6.0 Standards

6.1 All inpatients must have at least one full set of observations recorded each day.

6.2 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.
- All inpatient antenatal women should have a minimum of one set of observations daily.
6.3 Intrapartum

- Maternal pulse and fetal observations must be recorded hourly and maternal blood pressure and temperature 4-hourly whilst in latent phase until established labour. Then, irrespective of location of birth, maternal pulse will be recorded hourly, and blood pressure and temperature every 4 hours.

- Fetal heart will be recorded at least every 15 minutes for a full minute after a contraction in the first stage of labour, and every 5 minutes during the second stage of labour.

<table>
<thead>
<tr>
<th>Maternal and fetal observations during labour</th>
<th>1st stage of labour</th>
<th>2nd stage of labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal pulse</td>
<td>Hourly</td>
<td></td>
</tr>
<tr>
<td>Blood pressure</td>
<td>4 hourly</td>
<td>hourly</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiration rate</td>
<td>4 hourly</td>
<td></td>
</tr>
<tr>
<td>MOWS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contraction frequency and strength</td>
<td>30 minutes</td>
<td></td>
</tr>
<tr>
<td>Empting bladder</td>
<td>3 hourly</td>
<td></td>
</tr>
<tr>
<td>Vaginal examination (to be offered)</td>
<td>4 hourly</td>
<td>1 hourly</td>
</tr>
</tbody>
</table>

All hourly observations will be aimed to be performed hourly and within a maximum of 90 minutes since previous observations

- There will be some women who will require more intensive observations in labour depending on concurrent medical conditions or mode of analgesia.

6.4 Postoperative

A full set of observations must be performed at least every 15 minutes for the first hour and when stable every 30 minutes. Once observations are stable they should be recorded 4 hourly for 24 hours and then the frequency will depend on individual management plans. Please refer to Post Anaesthetic Care Guideline for Recovery on Delivery Suite (GL767).
6.5 Postpartum

At least one full set of observations must be recorded immediately following delivery.
- All postnatal women must have a second blood pressure check within 6 hours of delivery.
- All inpatient postnatal women should have a minimum of one set of observations daily. Frequency of observations will be determined by the results of the inpatient observations and blood tests.

7.0 Documentation

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

7.1 All women should have temperature, pulse, respiration rate, and blood pressure recorded on admission, or first assessment if home birth. If possible, the woman’s normal observations should be noted for comparison, especially if they suffer from chronic co-morbidities.

7.2 All antenatal, intrapartum, and postnatal women should have a MOWS score attributed to every set of observations.

7.3 In hospital, all antenatal women’s observations should be recorded on the maternity MOWS chart. For women having a home birth, observations should be recorded in the maternity records.

7.4 Once the woman is in established labour, all intrapartum observations must be recorded on the partogram.

7.5 For routine postnatal women, the MOWS should be recorded on the assessment record in the postnatal hand-held notes.

7.6 For postnatal women requiring more frequent observations, vital signs should continue to be recorded on the maternity MOWS chart and then filed in the maternity record.

7.7 Women must retain the same observation chart, especially when moving between wards and departments so that physiological trends can be seen.
8.0 Physiological observations that should be undertaken on maternity women

8.1 There are four main physiological observations that are regularly measured as “vital signs”. Those marked with an * are included in the MOWS system. Temperature

- Pulse*
- Respiration rate*
- Blood pressure*

Observations that can provide important physiological information and should be recorded in addition to the above:

- Conscious level*
- Urine output*

For maternity patients with abnormal physiological observations, staff should refer to: Recognition, High Dependency Care, and Transfer of Critically Ill Maternity Patients protocol (CG489)

8.2 Temperature

- Although temperature does not form part of the MOWS score, it is one of the ‘vital signs’ and should be regularly measured using an appropriate device.
- It is important that presence of low temperature is recognised as being equally as significant as high temperature. The Surviving Sepsis campaign\(^2\) defines sepsis as having a core temperature of >38.3°C or < 36°C. One of the CMACE 2011 red flag signs is a core temperature ≥ or equal to 38°C1.

8.3 Pulse

- The pulse is a reflection of the heart rate and is frequently measured via the saturation probe on the automated blood pressure machine. It will therefore be measuring the pulse in the finger. This poses three issues:

  8.3..1 The finger pulse might not reflect the true heart rate e.g. if the woman is peripherally shut down or has an irregular heartbeat, the pulse oximetry probe will not detect the pulse wave-form accurately.

  8.3..2 If the woman has either acrylic or gel nails then an ear pulse-oximetry probe must be used.
8.3.3 A prominent wave-form display does give an indication of adequate pulse volume and regularity, but practitioners cannot develop experience in assessing pulse properties (volume and regularity) from the wave-form alone.

- A manual pulse should be taken at least once a day to assess the pulse properties (volume and regularity), and develop and maintain practitioner expertise.
- If an abnormal pulse rate is measured, staff should refer to the modified MOWS chart (Appendix 1) to determine risks and response actions to initiate.

8.4 Respiratory rate

- Respiratory rate is the most sensitive indicator of deteriorating physiology and must be recorded regularly in all maternity patients.
- If an abnormal respiratory rate is measured, staff should refer to the modified MOWS chart (Appendix 1) to determine risks and response actions to initiate.

8.5 Blood pressure

- Manual sphygmomanometers should be available in all areas and staff should be competent in using them. Manual non-invasive blood pressure should be recorded at least daily.
- Women having epidural analgesia for labour should have their blood pressure monitored according to the Epidural – Standard procedure for Midwives (GL765)
- If an abnormal blood pressure is measured, staff should refer to the modified MOWS chart (Appendix 1) to determine risks and response actions to initiate.
- The Systolic Blood Pressure (SBP) should be greater than the heart rate. If the heart rate increases above the SBP it should initiate an alert.
- A rising blood pressure or diastolic blood pressure >95 mmHg could be a sign of potential pre-eclampsia and should initiate an alert. See Hypertension – management in pregnancy guideline (GL952)

8.6 Oxygen saturation

- Oxygen saturation is not routinely recorded in maternity. However, it is a useful adjunct when recovering a woman following general anaesthetics and when observing high
dependency women, particularly those with abnormal respiratory symptoms and signs.

- If oxygen is being administered, the administration rate and route should be recorded.
- The pulse oximetry probe should be moved regularly to maintain accurate saturation readings.
- Inaccurate readings may occur in women who are peripherally shut down, with an irregular heartbeat, or those wearing acrylic or gel nails.

### 8.7 Conscious level

- Conscious level should be initially assessed on all women using the AVPUI scale. A formal Glasgow Coma score (GCS) should be used by a competent practitioner if the patient has a primary neurological problem or displays signs of neurological deterioration.
- If an abnormal conscious level is measured, staff should refer to the modified MOWS chart (Appendix 1) to determine risks and response actions to initiate.

<table>
<thead>
<tr>
<th>AVPUI scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Alert</td>
</tr>
<tr>
<td>V Responds to voice</td>
</tr>
<tr>
<td>P Responds to pain</td>
</tr>
<tr>
<td>U Unresponsive</td>
</tr>
<tr>
<td>I Irritable</td>
</tr>
</tbody>
</table>

### 8.8 Urine output

- The normal urine output is 1ml / kg / hr. In a 70kg adult this is equal to 70 ml/hr. The minimum desired urine output is 0.5ml/kg/hr, which is equal to 35 ml/hr.
- If accurate, urine output measurements are vital for the safe care of the patient, a urinary catheter should be considered. For clinical situations where this would be appropriate, staff should refer to: Recognition, High Dependency Care, and Transfer of Critically Ill Maternity Patients protocol (CG489)
- In patients without an indwelling urinary catheter, hourly urine output can be calculated by averaging output over six hours.
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- If an abnormal urine output is measured, staff should refer to the modified MOWS chart (Appendix 1) to determine risks and response actions to initiate.

9.0 Fluid charts

9.1 When a fluid chart is in use it should be fully filled in with all input and output volumes and type of fluid should be recorded. Entries such as OTT (out to toilet), WB (wet bed), or WP (wet pad), should be avoided and efforts made to accurately record volumes.

9.2 Health care professionals are responsible for documenting and recording correct fluid input and output (including a running total balance), and for seeking appropriate medical help if the patient shows signs of deterioration. Health care assistants may document fluid balance under the supervision of the registered midwife or nurse.

9.3 Women with an intravenous fluid infusion in progress should have hourly measurement of fluid input. Output should be measured hourly if the woman has an indwelling catheter.

9.4 Daily fluid balances should be calculated and recorded on the fluid chart at midnight. Cumulative daily balances should be recorded on the front of the patients observation chart.

9.5 Insensible losses are not normally recorded, but should be accounted for in patients with fluid balance problems. Normal insensible losses are approximately 700ml in 24 hours, but can greatly increase when a patient has a high temperatures or rapid respiratory rate. (When fluid restriction is required, the amount of fluid to be infused is calculated based on the previous hour’s urine volume plus 40mls to cover insensible losses. The maximum amount of fluid given including medication should not exceed 100ml/hr.)

10.0 Frequency of observations

10.1 The frequency of observation recording will depend on the patients’ condition and local ward practice. The following are recommended:

- MOWS 0: minimum daily observations
- For all MOWS scores > 1, staff should refer to Recognition, High Dependency Care, and Transfer of Critically Ill Maternity Patients protocol (CG489)
11.0 Seeking help

11.1 Vital signs and MOWS scoring will give an indication of the woman’s condition. 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 and warrants a more comprehensive assessment.

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

11.3 For whom to call if the MOWS score is raised, staff should refer to Recognition, High Dependency Care, and Transfer of Critically Ill Maternity Patients protocol (CG489).

11.4 The following procedure is a guide to calling for help:

- When bleeping a clinician, make sure you have all the information you need to hand and ensure someone is able to stay by the phone to receive 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.
- 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.

If you are in any doubt about what to do, or your competency to do it, **CALL FOR HELP!!**

12.0 Consultation Undertaken

This protocol has been sent to the following for consultation:

- Lead Consultant Anaesthetist for Obstetrics
- Lead Obstetrician
- Maternity Clinical Governance Lead
- Consultant Midwife
- Delivery Suite Manager
- Maternity Clinical Risk Manager
13.0 Dissemination/Circulation/Archiving
The policy will be available on the Trust maternity intranet policy hub.

The Trust Secretary will be responsible for archiving old versions of this document.

14.0 Implementation
Managers are responsible for communicating the policy to staff and ensuring that the standards are implemented in practice.

15.0 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, performing required observations, and MOWS scoring.

- Clinical experts e.g. anaesthetists, obstetricians, medical teams, senior ward staff, and maternity clinical skills facilitators.
- Annual mandatory training programme for midwives.

16.0 Monitoring Standards

<table>
<thead>
<tr>
<th>Auditable Standard</th>
<th>Monitoring method</th>
<th>Frequency of monitoring</th>
<th>Review Group / Committee</th>
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<td>Maternal observations during the intrapartum period as stated in guideline</td>
<td>Review of 1% of maternal health care record of women delivered that were in</td>
<td>Annual audit report</td>
<td>Maternity Audit Forum</td>
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<tr>
<td></td>
<td>established labour</td>
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All women, while they are inpatients in the maternity unit, will have as a minimum one set of observations taken and recorded in the maternal health record each day. These observations include maternal pulse, blood pressure, temperature, and respiration rate, assessment of consciousness, assessment of urine output and calculation of MOWS score. The calculation of the MOWS score will be undertaken as stated in guideline.

<table>
<thead>
<tr>
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<th>Monitoring method</th>
<th>Frequency of monitoring</th>
<th>Review Group / Committee</th>
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17.0 References


18.0 *APPENDIX 1 - Modified MOWS Chart

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<th>Name:</th>
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<tbody>
<tr>
<td>Date:</td>
<td>Maternity Unit MOWS Chart</td>
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<table>
<thead>
<tr>
<th>Date &gt;</th>
<th>Time &gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>40°C</td>
<td>220</td>
</tr>
<tr>
<td>36°C</td>
<td>200</td>
</tr>
<tr>
<td>38°C</td>
<td>180</td>
</tr>
<tr>
<td>37°C</td>
<td>160</td>
</tr>
<tr>
<td>36°C</td>
<td>140</td>
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<tr>
<td>35°C</td>
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<table>
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<tbody>
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<td>80</td>
</tr>
<tr>
<td>Pulse</td>
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<table>
<thead>
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<th>O₂ U/min</th>
<th>O₂ Saturation</th>
<th>Lavita</th>
<th>FHR</th>
<th>Urine Output</th>
<th>Conscious Level</th>
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<tr>
<td>Signature</td>
<td>Score</td>
<td>Resp</td>
<td>Fluor</td>
<td>System</td>
<td>Diastolic</td>
<td>Consciousness</td>
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<table>
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<th>Urine Output</th>
<th>Total MOWS</th>
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<td>3</td>
<td>2</td>
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</table>

**Action to be taken**

0. Repeat observations when appropriate for clinical scenario — at least daily.
1. Minimum of 4 hourly observations as there is potential for deterioration.
2. Inform midwife in charge, obstetric registrar. Minimum 1 hourly observations.
3. Inform senior midwife, obstetric and anaesthetic staff. Minimum 1/2 hourly observations.
4. As above but the consultant obstetrician and consultant anaesthetist should be informed. Minimum 30 minute observations.

If no one is available to review the patient, inform the Outreach Team.

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**Author:** G Valentine, G Jackson  
**Job Title:** Director of Midwifery, Consultant Anaesthetist  
**Review Date:** January 2020  
**Policy Lead:** Group Director Urgent Care  
**Version:** 7.0 ratified 5/1/18 Mat CG mtg

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*This document is valid only on date last printed*