

# Maternity Early Warning System (MEWS) Guideline

## Guideline information

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## Approval information

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Summary of document:

Standard Operating procedure for use of Maternity Early Warning Score tool

Scope:

This Guideline is intended for use by all clinical staff within the Hywel Dda Health Board acute care settings including the delivery suite, antenatal and postnatal ward, Maternity Priority Unit, Antenatal Clinics, and all areas of Hywel Dda health board that provides care to women who present with any concerns in the antenatal, intrapartum and postnatal periods in Hywel Dda. This includes A& E, clinical ward settings, Care Centres and GP practices.

There are currently specific care settings in Maternity where women may not require using MEWS chart unless clinical concerns and these are detailed within the protocol.

The guidance uses the term “woman” (pronouns she or her) to describe individuals whose sex assigned at birth was female, whether they identify as female, male, or non-binary. It is important to acknowledge it is not only people who identify as women for whom it is necessary to access women’s health and reproductive services. Therefore, this should include people who do not identify themselves as women but who are pregnant or have recently given birth. Obstetric and midwifery services and delivery of care must therefore be appropriate, inclusive, and sensitive to the needs of those

individuals whose gender identity does not align with the sex that they were assigned at birth.

To be read in conjunction with:

[Maternity escalation of clinical concerns/ Escalation of conflict of clinical concerns Hypertension Disorders in Pregnancy Guideline 621](#)

Owning group:

Maternity Guideline, Audit and research Group  
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## Scope

This Guidance is intended for use by all clinical staff within the Hywel Dda Health Board acute care settings including the Labour Ward, antenatal and postnatal ward, Maternity Priority Unit, Antenatal Clinics and all other areas of Hywel Dda health board that provides care to women who present with any concerns in the antenatal, intrapartum and postnatal periods in Hywel Dda. This includes A& E departments, clinical ward settings, Care Centres and GP practices.

There are currently specific care settings in Maternity where women may not require using MEWS chart unless clinical concerns and these are detailed within the protocol.

## Aim

The aim of this document is to:

Provide support for clinical decision making and to identify and manage maternal deterioration in a consistent way.

## Objectives:

- To use MEWS chart effectively
- Recognise the difference/ relevance of using postnatal pulse after 48 hours and the significance it has on the MEWS tool.
- Identify additional concerns to supports escalation.
- Understand the graduated thresholds and triggers table

## Introduction

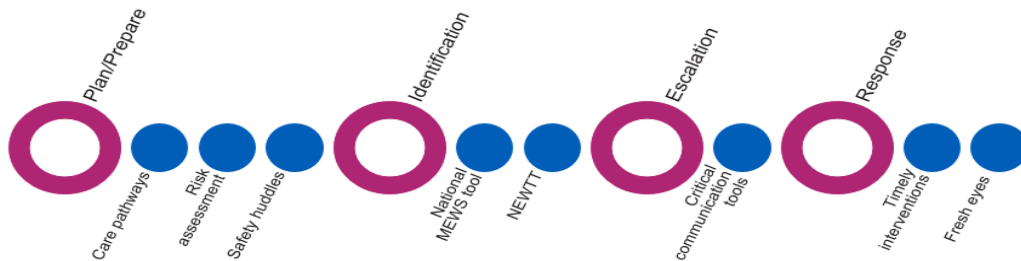
Failure in the management of deterioration has been highlighted in recent reports into maternity care. A standardised All Wales Maternity Early Warning Score (MEWS) tool has been developed to replace the varying MEWS tools used across maternity services to identify and manage deterioration in a consistent way. It is embedded as a tool within the PIER framework.

## What is the PIER Framework?

To ensure early recognition and management of deterioration the PIER framework focuses on the principles of:

- Planning, preparation, and prevention
- Identification
- Escalation
- Response

The framework consists of various” tools” to achieve this and MEWS is one of these tools (as is NEWTT2)



## When to use the MEWS chart?

Use MEWS charts all women who are being reviewed in acute clinical settings: Labour Ward, Antenatal and Postnatal Ward, Triage or Day Assessment Unit, and any other areas within the health board that provides care to women who present with any concerns in the antenatal, intrapartum, and postnatal periods in Hywel Dda. This includes A& E, clinical ward settings, Care Centres and GP practices

There are currently specific care settings where women may not require using MEWS chart unless clinical concerns. See below:

### All Wales Clinical Care pathway for normal labour.

When caring for women, who meet the criteria for midwifery led care, whilst assessing clinical observations, use the All-Wales Clinical Pathway for Normal Labour guidance.

If observations fall outside of the normal parameters follow the All-Wales Clinical Pathway for Normal Labour variance pathways. If exiting the pathway is then indicated, commence a MEWS chart and transfer to Labour Ward.

NOTE: When caring for women who choose to labour and birth **outside guidance** at home or in a Midwifery Led Unit a MEWS chart is to be used.

### Antenatal appointments

If BP within normal range (see hypertension guideline) document in Antenatal consultations within woman's All Wales Maternity Record.

If BP is outside the normal range i.e. BP systolic >140 and/or Diastolic >90 plot on MEWS chart.

If a woman is being monitored for hypertension/ PET, ensure continuing BP measurements are plotted on the MEWS chart.

If there are any clinical concerns about a woman's wellbeing during a routine antenatal appointment obtain a full set of clinical observations and plot on MEWS chart.

## Monitoring in antenatal setting

- If monitoring BP (e.g. borderline hypertension /PET) in community setting use MEWS chart.
- If woman is self-monitoring e.g. P/PROM, use MEWS chart for reference.
- If woman expresses any clinical concerns e.g. complaining of breathlessness, tiredness, fatigue, light headedness, palpitations, pale (this is not an exhaustive list) then review recent blood results and previous findings and obtain clinical observations and plot on MEWS chart.

## How does the MEWS chart work?

The MEWS chart has been designed to ensure that identification of deterioration is based on pure physiology using a total score.

The total score is combined with subjective assessments including:

- additional concerns which support escalation
- a guide to graduated escalation within the thresholds and triggers table supports clinicians

In Maternity, a new modified system, the All-Wales Maternity Early Warning Score, is used (see [Appendix 1](#) and [Appendix 2](#)) It has been evolved from the previous system used in Wales (MEOWS) and from the All-England MEWS chart.

It is for use from diagnosis of pregnancy to 42 days postpartum when accessing care, not just within the maternity setting, but within all health settings e.g. A&E, ambulance service, general ward settings.

Research has identified that due to physiological changes, 2 days after birth there are significant changes in the pulse parameters that could lead to underestimating episodes of deterioration using previous tools. As a result, a separate section **adjusting the pulse rate from 48** hours after birth has now been created on the MEWS chart. This allows the MEWS tool to still operate in this period as without needing to use separate or multiple tools to account for these changes, which would increase likelihood of potential errors.

## The Physiological Variables

(See [appendix 1](#))

Six simple <b>physiological</b> variables are monitored:
<ul style="list-style-type: none"> <li>• Pulse rate</li> <li>• Postnatal pulse rate</li> <li>• Blood Pressure (Systolic /Diastolic blood pressure)</li> <li>• Respiratory rate</li> <li>• Temperature</li> <li>• Oxygen saturations</li> </ul>

Using the All-Wales MEWS chart the recognition of even small changes in these 6 physiological variables combined will be seen earlier, alerting clinicians to changes in the clinical condition of a woman i.e. a graduated escalation process depending on the total score, rather than waiting for a later, single obvious change in individual variables.

### Colour coded chart

The All-Wales MEWS tool incorporates a colour coded chart to monitor vital signs including a scoring system and assessed alongside the presence of one or more of any of the MEWS “additional concerns” to aid in quicker recognition, appropriate escalation of, and response to deterioration.

The chart is used to “track” the behaviours and clinical observations of those women requiring observations over time to identify trends. When observations fall outside the normal range actions are triggered based on the extent of the deviation.

Scoring is colour coded white, yellow and red.

Colour Code of scores on MEWS charts	Score
White	Scores 0
Yellow- Amber	Scores 1
Pink- Red	Scores 2

Observations taken outside of normal ranges give a total ‘numerical score’ and this will indicate that the woman/birthing person remains in the ‘safe’ zone and will be able to indicate emerging instability/deterioration over time, prompting earlier recognition, escalation, and review.

An advancing 'white/yellow/red' scale defines the extent of the change, and which actions should be taken should observations fall within these alert zones.

## Additional Concerns

The additional concerns component adds value by helping to quantify the subjective element of the clinician's assessment and view the wider clinical picture (see [Appendix 1](#)).

The All-Wales MEWS chart **additional concerns**:

- Healthcare professionals concern
- Woman/ family concern
- Significant additional therapies (e.g. oxygen) • increased pain (+/- analgesic requirements)
- Significant vaginal bleeding
- Reduced urine output
- Altered level of consciousness/responsiveness.

## Action when additional concerns are present.

When there are one or more of the additional concerns along with an elevated MEWS score, professionals are asked to consider:

1. **Increasing the frequency** of observations to a minimum of every 30 minutes.
2. **Escalate** in line with a low-medium level of concern even if the MEWS is less than 2.
3. When MEWS is greater than 2 **raising the level of concern** to the next category

NOTE: If no physiological abnormality is present, but any of these additional concerns are present, then escalation should still occur.

When all components of the MEWS tool are completed (both physiological variables and the additional concerns), maternal morbidity and mortality are reduced.

## Threshold and triggers table

Within the MEWS chart the Threshold and trigger table supports and guides clinicians to escalate their concerns in a graduated way, as well as encompassing who the escalation is directed towards and appropriate timely responses.

NOTE: **Healthcare professional concern can initiate a review at any time regardless of the zone of colour or total score.**

The thresholds are identified by levels of concern (see table below and see [appendix 2](#)).

- Low.
- Low-to-medium.

- Medium.
- High.

Thresholds and triggers				
<ul style="list-style-type: none"> <li>• The grade of medical team member indicated as the primary contact for each level of clinical concern is a guide and may need to be adapted depending on the local skill mix within that care setting or organisation</li> </ul>				
Level of concern	Low	Low-medium	Medium	High
MEWS	0-1	2-4	5-7	8 or more
Primary escalation & response (Use SBAR framework)		Review by midwife in charge	Urgent review by midwife in charge	Immediate review by midwife in charge
		Request review by ST1/2 or equivalent	Urgent review by ST3+ or equivalent and consultant made aware of plan Consider anaesthetic review	Immediate review by ST3+ or equivalent, consultant and anaesthetic team Consider review by outreach team
Medical review timing		Within 30 minutes	Within 15 minutes	Immediate
Minimal vital signs recording until medical review/ongoing plan	Continue with current observation frequency	Reassess observations within 30 minutes & document ongoing plan	Reassess observations within 15 minutes & document ongoing plan	Continuous observations
Secondary contact		ST3+ or equivalent	Consultant or equivalent	Clinical outreach team or equivalent
<ul style="list-style-type: none"> <li>• When the primary team member(s) contacted is unable to attend or fails to attend within the expected time for the level of clinical concern, escalation to the secondary contact is required</li> <li>• The secondary contact would be expected to attend within the initial medical review timing, calculated from the documented time of primary escalation</li> <li>• The section pulse (from 48 hours after birth) cut-offs should be used for all women from 48 hours after birth. The time and date from which these values should be used should be entered on the front of the chart.</li> </ul>				

The thresholds and triggers component is aligned to the NHS England **PIER** framework:

### **P**revention:

Early recognition of initial signs of deterioration in conditions using the MEWS tool. For example:

- Cardiovascular disease
- Sepsis
- Thromboembolic disease
- Haemorrhage
- Pre-eclampsia

### **I**dentification:

- Through reliable and timely monitoring and assessment by accurate taking and recording of full set of vital signs.

### **E**scalation:

- Graduated permission to escalate, regardless of your banding or grade as a healthcare professional, woman, or family member.

- Escalation is about:
  - knowing when to escalate
  - who to escalate to
  - when to refer to someone else if they do not respond within the threshold and triggers timeframe
  - Knowing how to escalate clinical concerns or escalate conflict of clinical concerns. ( [Maternity escalation of clinical concerns/ Escalation of conflict of clinical concerns](#) )-opens in new tab

## Response:

- Appropriate time response. There are operational challenges to consider, for example:
  - healthcare professionals' capacity and capability to respond to the escalation
  - unanticipated maternity department peaks and troughs, for example increased admissions and triage attendance
- If appropriate time response does not occur continue to escalate concerns.
- Complete Datix

## Midwifery Clinical Assessment when using MEWS Tool.

### 1. Risk Assess

PLAN, PREPARE, PREVENT. Determining the frequency of MEWS observations required is dependent on any identified risk factors and individualised care planning.

### 2. Clinical Care/ Observations

- Temperature – use tympanic thermometer to assess temperature in degree Celsius.
- Respirations – Count respirations for ≥ 60 seconds to assess the rate of breathing.
- Oxygen Saturations – Use a pulse oximeter to accurately assess oxygen saturations.
- Pulse– Count the beats for ≥ 60 seconds manually or by using a pulse oximeter. In the additions pulse section, pulse from 48hrs post birth ONLY, at the time of birth, the date and time on which to commence this section of the MEWS chart should be completed.
- Blood Pressure – select the correct size blood pressure cuff, as per manufacturers' guidance. Use a manual Sphygmomanometer with a stethoscope, or an automated blood pressure cuff, to assess systolic and diastolic blood pressure.

### 3. Woman and Family

Awareness of a high level of woman **or** family concern and score for the level of actual woman or families' concern.

Use active enquiries such as “How do you feel your family member is different from when we last assessed them?” or “How are you feeling today?”

### 4. Documentation on MEWS

- Mark boxes on the MEWS chart with the numerical observation value i.e. if a pulse rate is 90, insert the value 90 into the appropriate box on the MEWS chart and escalate as per the MEWS score.
- Complete all sections.
- Additional concerns:  
If one or more additional concerns are present, consider increasing the frequency of observations to a minimum of every 30 minutes, escalate in line with a low-medium level of concern even if the MEWS is less than 2.  
Where MEWS is greater than 2 raising the level of concern to the next category.
- Complete the total MEWS score for every set of observations.
- Document the frequency of observations required, whether escalation is indicated (see escalation tool in appendix 1) and sign your initials.

### 5. Additional considerations

If the MEWS specific score total trigger a threshold, consider whether an additional risk assessment tool should then be used e.g. Risk Assessment and Action for Suspected Maternal Sepsis.

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## Appendix 2.

# Maternity Early Warning Score (MEWS)

Taking the total MEWS score generated, escalate according to the threshold and trigger table.

		Score				
		2	1	0	1	2
Vital Sign	Respirations Breaths/min	<=6	7-8	9-21	22-24	>=25
	SpO <sub>2</sub> Oxygen saturation (%)	<=92	93-94	>=95	-	-
	Temperature °C	<=35.6	35.7-36.1	36.2-37.2	37.3-37.4	>=37.5
	Pulse Beats/min	<=62	63-70	71-112	113-121	>=122
	Pulse (from 48 hours post birth) Beats/min	<=50	51-57	58-98	99-107	>=108
	Systolic blood pressure mmHg	<=93	94-100	101-135	136-144	>=145
	Diastolic blood pressure mmHg	<=56	57-61	62-88	89-96	>=97

+

Additional concerns	
<p><b>If one or more of these additional concerns are present, consider:</b></p> <ol style="list-style-type: none"> <li>1. Increasing the frequency of observations to a minimum of every 30 minutes</li> <li>2. Escalate in line with a low-medium level of concern even if MEWS less than 2</li> <li>3. Where MEWS is greater than 2 raising the level of concern to the next category.</li> </ol>	<ul style="list-style-type: none"> <li>Healthcare professional concerned</li> <li>Woman/family concerned</li> <li>Significant additional therapies (e.g. Oxygen)</li> <li>Increased pain (+/- or analgesic requirement)</li> <li>Significant vaginal bleeding</li> <li>Reduced urine output</li> <li>Decreased level of consciousness/responsiveness</li> </ul>

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Thresholds and triggers				
<ul style="list-style-type: none"> <li>The grade of medical team member indicated as the primary contact for each level of clinical concern is a guide and may need to be adapted depending on the local skill mix within that care setting or organisation</li> </ul>				
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<ul style="list-style-type: none"> <li>When the primary team member(s) contacted is unable to attend or fails to attend within the expected time for the level of clinical concern, escalation to the secondary contact is required</li> <li>The secondary contact would be expected to attend within the initial medical review timing, calculated from the documented time of primary escalation</li> <li>The section <b>pulse (from 48 hours after birth)</b> cut-offs should be used for all women from 48 hours after birth. The time and date from which these values should be used should be entered on the front of the chart.</li> </ul>				