Maternity Early Observation Warning System including Level 1 Pathway escalation

Classification:	Guideline
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Authors Division:	Women and Children's Health
Departments/Group this Document applies to:	All staff caring for pregnant women

Approval Group: Women's health guidelines meeting Women's health CIG	**Date of Approval:**	02/09/2020
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Guideline to be followed by (target staff):

CQC Fundamental standards:
Regulation 9 – person centered care
Regulation 11 – Need for consent
Regulation 12 – Safe care and treatment
Regulation 14 – Meeting nutritional and hydration needs
Regulation 15 – Premises and equipment
Regulation 17 – Good governance
Regulation 19 – Fit and proper

Disclaimer

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.
The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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Guideline Statement

This is an aggregate scoring and escalation system designed to enable the prompt identification of changes in a woman's condition and aid early referral to an appropriate practitioner.

This guideline is for use by all clinical staff within an acute hospital setting when caring for pregnant or postpartum women within 42 days of giving birth.

The Maternity Early Observation Warning System is similar to the National Early Warning Score (NEWS), based on a simple aggregate scoring system in which a score is allocated to seven simple physiological measurements:

- Respiration rate
- Oxygen saturation
- Systolic and diastolic blood pressure
- Heart rate
- Level of consciousness
- Temperature
- Supplemental oxygen therapy

- NEWS2 (NEWS Version 2) is a revised version of the original NEWS which includes recognising the importance of new-onset confusion by including 'new confusion' as part of the AVPU scale. The addition of 'new confusion' to the AVPU score making it now ACVPU has been made to the MEOWS

Executive Summary

The majority of women remain healthy during pregnancy and childbirth. Patients who are, or become, acutely unwell in hospital may receive suboptimal care. This may be because their deterioration is not recognised or because despite indications of clinical deterioration, it is not appreciated, or not acted upon sufficiently rapidly (CMACE (2011), pp. 11-12).

The recognition of severely ill women either in pregnancy or the postnatal period remains a challenge to all 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 (CMACE (2011), pp. 11-12).

One of the 'Top ten' recommendations in the 2011 CMACE Report (pp.11-12) was for routine use of a MEOWS (Maternity Early Observation Warning System) chart to help in the timely recognition, treatment and referral of women who have, or are developing a critical illness. A MEOWS chart is the easiest way to see trends in a woman's condition and to alert staff to take appropriate action or call for help.

The importance of midwives and junior medics having proper support and guidance about when to seek help and the involvement of anaesthetic and critical care staff playing a vital part in the effective management of deteriorating women was also emphasised in this report (CMACE (2011),

pp. 11-12).

All women who enter an acute hospital setting should have their observations recorded on a MEOWS chart including pregnant women being cared for outside of the obstetric setting (CEMACH (2007), p.xv).

1.0 Roles and Responsibilities:

All staff – it is the responsibility of every registered midwife, nurse and maternity care assistant to ensure that:

- They are familiar with the MEOWS and adhere to the standards and processes described in this guideline
- They have the appropriate level of knowledge and skill in the use of any monitoring equipment
- Vital signs are recorded accurately using manual techniques when appropriate.
- Observations are documented accurately on eCare.
- All staff should follow the "Clinical Response to MEOWS" (Appendix 1) when the MEOWS score is 1 or more triggers and where appropriate complete the 'Sepsis screening tool' (Appendix 3).

Medical Staff Responsibilities –

- All of the above
- The Level 1 Pathway Framework is considered for patients at high risk of deterioration (see Appendix 5).
- Appropriate prioritisation happens when competing demands exist (e.g. patients with abnormal observations are seen before routine work).

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Ward Sister/Matron Responsibilities –

- Registered midwives, nurses and maternity care assistants are familiar with and follow this guideline.
- Registered midwives, nurses and maternity care assistants who undertake observations and monitoring are trained and familiar in the accurate recording of all vital signs. As a minimum, these include level of consciousness (ACVPU), respiratory rate, oxygen saturations, blood pressure, heart rate and temperature.
- MEOWS is readily available on eCare to record observations.
- Regular audit of this care will be conducted.

- Sufficient equipment is available to measure and record patient observations

2.0 Implementation and dissemination of document

Guideline is available on the Intranet

3.0 Processes and procedures

3.1 Standards for observations

- All women from 18 weeks gestation, labouring or women within 42 days of giving birth admitted to a maternity ward in hospital should have a full set of observations and a MEOWS calculated on admission .

- The NEWS2 score should be used for pregnant and postpartum women who are unwell and are being cared for outside of the maternity wards.

  The initial set of observations must be completed within 30 minutes of admission.
- As a minimum, the eight following physiological observations should be recorded at the initial assessment and as part of routine monitoring:

  1. Respiratory rate
  2. Heart rate
  3. Blood pressure
  4. Temperature
  5. Oxygen saturations
  6. Level of consciousness (ACVPU scale)
  7. New confusion
  8. Woman looks or feels unwell?

- Registered midwives, nurses and maternity care assistants must be able to record and document observations and respond promptly to acutely ill patients, appropriate to their position and experience. They should be familiar with MEOWS and the process of escalation using the 'Clinical Response to MEOWS Triggers' (Appendix 1).

- Physiological observations should be recorded and acted upon by staff that have been trained to undertake these procedures and understand their relevance.

3.2 Frequency of observations:

- There should be clear instructions about the frequency of observations

- Women with uncomplicated low risk pregnancy, labour, birth or postnatal period must have their observations recorded on the MEOWS as a minimum once every 24 hours.

- Women that have had a caesarean section should have observations as directed in the Caesarean Section guideline

- Women assessed as high risk of deterioration should have at least 4hrly observations and

more frequent observations as clinically necessary.

- In high-risk cases, frequency of observations should be determined after Senior clinical review and be based on:

- -Pregnancy risk status

- Diagnosis
- Reason for admission
- Initial observations on admission and number of triggers

(Royal College of Anaesthetists (2018), p.10)

3.3 Recognising clinical deterioration:

The MEOWS should be used as an aid to clinical assessment – it is not a substitute for competent clinical judgement. When assessing a woman who is unwell, consider her clinical condition in addition to her MEOWS score. Any concern about a patient's clinical condition should prompt an urgent review, irrespective of the MEOWS. (Knight, M., et al. (eds) on behalf of MBRRACE-UK (2017))

If MEOWS 2 or more and signs of infection or risk factors for infection, then 'think sepsis' and complete the sepsis screening tool.

There are additional physiological parameters that can be measured and considered as part of a patient's ABCDE assessment (Appendix 6):

3.3.1 Respiratory rate:

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

3.3.2 Pulse rate:

Heart rate is a key parameter for early detection of critical illness in the maternal obstetric woman.

It is recommended that you take a manual pulse to assess volume and regularity
Cautions if pulse oximeter used:

- If the woman is peripherally shut down in cases of haemorrhage the pulse oximetry probe will not detect the pulse accurately.
- Pulse properties such as volume and regularity cannot be assessed. If heart rate is irregular or excessively fast or slow pulse oximeters may be inaccurate.
- Nail varnish affects wave form accuracy

3.3.3 Blood pressure:

Use of the correct cuff size for the woman is vitally important for the accuracy of recordings of blood pressure (BP) 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

Hypotension in a pregnant or post-partum woman 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. Pregnant women can lose up to 30-40% of their circulating blood volume with no change to their vital signs especially BP.

Cautions:
Patients who have arrhythmias, hypotension or hypertension or are acutely unwell would have their manual blood pressure taken rather than an automated one (NICE 2011).

3.3.4 Temperature

Both pyrexia and hypothermia are included in MEOWS and are sensitive markers of acute illness severity, infection and physiological disturbance.

Temperature should not be used as a sole predictor of sepsis. Do not rely on fever or hypothermia to rule sepsis either in or out however it is important to ask about a history of fever or rigors and consider other causes of raised temperature e.g. physiological response to surgery or trauma and medication (NICE no 51,2016).

Paracetamol and other analgesia may mask pyrexia, and this should be taken into consideration when taking temperature (CMACE 2011, p.92).

Other considerations for maternal pyrexia (Temperature >38°C) on one occasion:

- Give Paracetamol 1g orally or IV
- Ensure adequate hydration – encourage woman to drink fluids orally and consider IV fluids if woman unable to drink
- Reduce room temperature (e.g. fan, ventilation)
- If woman is in the pool, please check the water temperature as woman may be overheated. See Water Guideline for Use During Labour and Birth
- There has been a suggestion from one trial (Chan, J.J.I. et al 2018) that epidural per se may be associated with a mild rise in temperature provided other causes of pyrexia have been ruled out.

3.3.5 Neurological response:

New confusion is a sign of potentially serious clinical deterioration and especially those with confirmed or suspected sepsis. It includes new-onset or worsening confusion, delirium or any other altered mentation and should always prompt an urgent clinical review. New confusion (C) will score a red score as part of the ACVPU assessment.

ACVPU is a measure of consciousness and the best response of the following should be documented. A fall in ACVPU score must always be considered significant.

A	**Fully alert woman**
C	**New confusion**
V	**Drowsy but answers to name or some kind of response when addressed**
P	**Rousable with difficulty, but makes a response when shaken or mild pain is inflicted (e.g. rubbing sternum, pinching ears)**
U	**Unresponsive to voice, shaking or pain**

For further information on the ACVPU assessment, see the NEWS2 report published by the RCP in 2017)

3.3.6 Oxygen saturation:

Medical staff should check oxygen saturation and prescribe oxygen as appropriate. The rate of administered oxygen (L/min) must be documented. If the woman's oxygen saturations remain below 94% despite prescribed oxygen, then this is a trigger and the woman should be assessed by a Registrar.

If a woman is prescribed oxygen, then the medical plan should state both the frequency of observations to be completed and the assessment by medical staff.

This is an important parameter. If a woman's saturations drop below 94% on air this is a trigger.

Medical staff should assess and prescribe oxygen as appropriate. If after administering the prescribed oxygen saturations remain below 94% this remains a trigger and she must be assessed by Registrar.

The rate of administered oxygen (L/min) must also be documented.

If a woman is prescribed oxygen, then the medical plan should state how often observations should be completed and how often she is assessed by medical staff.

3.3.7 Does the woman require supplemental Oxygen therapy?

If the woman requires supplemental Oxygen then this gives a score of 2.

3.3.8 Does the woman look or feel unwell?

Pregnant/postnatal women have altered physiology which enables them to compensate when compromised (e.g. haemorrhage or sepsis). For this reason, a woman may complain of feeling unwell or look unwell prior to any deterioration on her MEOWS chart.

If you are concerned that a woman is unwell despite no other MEOWS triggers, please escalate immediately (clinical response criteria (Appendix 1).

The Level 1 Pathway can be initiated by a healthcare professional, patient or relative if they have raised concerns about a patient.

3.4 Physiological parameters not included in NEWS2

- Although urine output monitoring is not routinely required for the majority of patients, it is a key indicator of kidney function and clinical deterioration and therefore, urine output monitoring is essential for some patients as dictated by their clinical condition.

- Despite not forming part of the MEOWS, the pain score must be recorded and responded to by the clinical team. Women who have unexplained pain severe enough to require opiate

  analgesia may have a problem. Pain and/or its cause will usually, but not always, produce physiological disturbances. CMACE (2011, p.12) found that cardiac disease and other causes of death were missed when this sign was not identified. Following analgesia for pain, re-assessment should be completed within 30 minutes or sooner using a scale of 0 to 10, 0 having no pain and 10 being the worst possible pain.

- Blood glucose should be monitored if there is any concern with the patient's conscious level.

- The concept of 'worry', whether from a healthcare professional, the patient themselves or a relative/carer, is a key indicator of potential clinical deterioration and should be given due consideration. Subtle changes in the patient's general behavior, daily activities, functions and appetite should not be ignored and further assessment is required.

3.5 Triggers and escalation procedure

- The recognition of a deteriorating condition does not necessarily mean diagnosis but does mean investigation and appropriate level of referral involving a multidisciplinary approach.

- When communicating triggers to senior and medical staff use **SBAR** to ensure that information sharing is concise and focused. It allows staff to communicate assertively and effectively, reducing the need for repetition.

- See Appendix 2 for Escalation SBAR tool

3.5.1 Triggers/Parameters

Respiratory Rate	< 10 or > 20
Heart Rate **(Heart rate 90-99 > 4 hours SBAR registrar)**	< 50 or > 100
Oxygen Saturations	< 94%
Systolic Blood Pressure	< 90 or > 150mmHg
Diastolic Blood Pressure	≥ 90 mmHg
Temperature	< 36°C or > 38°C
Level of Consciousness	ACVPU - Any sudden deterioration
New confusion	YES
Woman looks/feels unwell	YES
Supplemental oxygen required	YES

3.5.2 Standard for Escalation

- The escalation process 'Clinical Response to MEOWS Trigger Thresholds' can be found in Appendix 1 of this guideline. This process must be followed every time a patient's risk group

  changes unless medical staff have documented a revised escalation plan for individual patients.

- The Welch Allyn observation machines calculate the aggregate MEOWS and display a 'Required Response' action list for the member of staff taking the observations. See Appendix 1 for screenshots.

- eCare produces 'discern' alerts based on aggregate MEOWS thresholds displaying the 'Required Response' action list. See Appendix 1 for screenshots.

- All communication about escalation should be completed using the SBAR tool (Situation, Background, Assessment, and Recommendation) and evidence of this escalation must be documented on eCare. See Appendix 2 for an example SBAR tool and eCare screenshots

- MKUH uses an innovative process for highlighting patients that have the potential for clinical deterioration, called the Level 1 Pathway – see Appendix 5

3.5.3 Sepsis Screening Tool

See Appendix 3

The screening tool MUST be completed for any woman who has 2 or more triggers on the MEOWS chart or if an infection is suspected. See 'Sepsis in Maternity' Guideline for further guidance.

3.6 Level 1 Pathway

See Appendix 5

The Level 1 Pathway (L1P) is a set of interventions delivered by the multidisciplinary team for women identified at risk of deterioration. The pathway provides a coordinated process to identify, monitor and optimise the management of women in our care.

3.7 Education and Training

- Training for staff in the use of the Maternity Early Obstetric Warning System Chart is described in the Maternity Services Training Needs Analysis. Maternal Resuscitation training requirements are also described in the Maternity Services Training Needs Analysis.

- The Trust provides training in recognising deteriorating patients on the ALS and ILS courses for registered staff.

- Any ongoing support in the process of performing observations and the use of the MEOWS should be provided jointly by the ward sisters or charge nurses and the practice development team.

3.8 Other Associated Documents

Milton Keynes University Hospital NHS Foundation Trust. *Caesarean section.* MIDW-GL-36. Version 6, 2017.

Milton Keynes University Hospital NHS Foundation Trust. *Hypertensive disorders of pregnancy (including pre-eclampsia and eclampsia).* MIDW/GL/133. Version 3, 2019.

Milton Keynes University Hospital NHS Foundation Trust. *Procedure for the care of the patient at increased risk requiring 1:1 care (enhanced observation).* DOC150. Version 1, 2017.

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Milton Keynes University Hospital NHS Foundation Trust. *Sepsis identification and management in adults including maternity and neutropenic sepsis*. GENM/GL/99. Version 2, 2018.

Milton Keynes University Hospital NHS Foundation Trust. *Sudden maternal collapse.* MIDW/GL/30. Version 5, 2019.

4.0 Statement of evidence/references

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Dougherty, L. and Lister, S. (eds) *The Royal Marsden Manual of clinical nursing procedures.* 9th ed. Chichester: Wiley-Blackwell, 2015.

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https://www.npeu.ox.ac.uk/mbrrace-uk/reports/confidential-enquiry-into-maternal-deaths [Accessed 23 August 2019]

Knight, M., et al. (eds) on behalf of MBRRACE-UK (2016) *Saving lives, improving mothers' care: surveillance of maternal deaths in the UK 2012-14 and lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009-14*. [Online]. Available from: https://www.npeu.ox.ac.uk/mbrrace-uk/reports/confidential-enquiry-into-maternal-deaths [Accessed 27 August 2019]

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5.0 Governance

5.1 Document review history

Version number	Review date	Reviewed by	Changes made
4.1	06/12/2023	Approval from Maternity Assurance Group and Women's Health Guideline Review Group	Review date extended by 6 months due to vacancy of Guidelines and Audit lead midwife, and Regional changes due to be made to MEOWs which will affect this guideline.
4.0	07/2020	Swati Velankar	Full review and update with most recent evidence
3.0	08/2019	Mary Plummer	Screen shots added. ACVPU added
2.1	04/2016	Anna O'Neill	Minor change added to paragraph 7.3
2.0	09/2014	Mary Plummer Anna O'Neill	MEOWS chart recommended in CEMACH: Saving Mothers Lives 2003-5 implemented
1.0	11/2011	Mary Plummer	New guideline. Replaces MID/GL/144 The Severely Ill Pregnant Woman and MID/GL/72 High Dependency Care (Maternity)

5.2 Consultation History

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No
Women's Health Guideline Review Group	Maternity	06/12/2023	-	Version 4.1 approved	Yes
Julie Cooper	Head of Midwifery	06/2020	06/2020	Incorporated	Yes
Eleanor Tyagi	Anaesthetic consultant	22/05/2020	22/05/2020	Incorperated	Yes
Anna O'Neill	QI lead and Sepsis sister	01/2020	01/2020	Incorperated	Yes
Lesley Johnson	Lead nursing	12/2019	12/2019	Use of NEWS2 instead of MEOWS	Yes
Ian Reckless	Medical Director	11/2018	11/2018	Use of NEWS2 instead of MEOWS in non-maternity wards agreed	Yes
Andrew Cooney	Consultant Anesthetist	11/2018	11/2018	Use of NEWS2 instead of MEOWS in non-maternity wards agreed	Yes
John White	Head of Practice Education	11/2018	11/2018	Use of NEWS2 instead of MEOWS in nonmaternity wards agreed	Yes

5.3 Audit and monitoring

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committe
MEOWS triggers have been recognised and escalated				

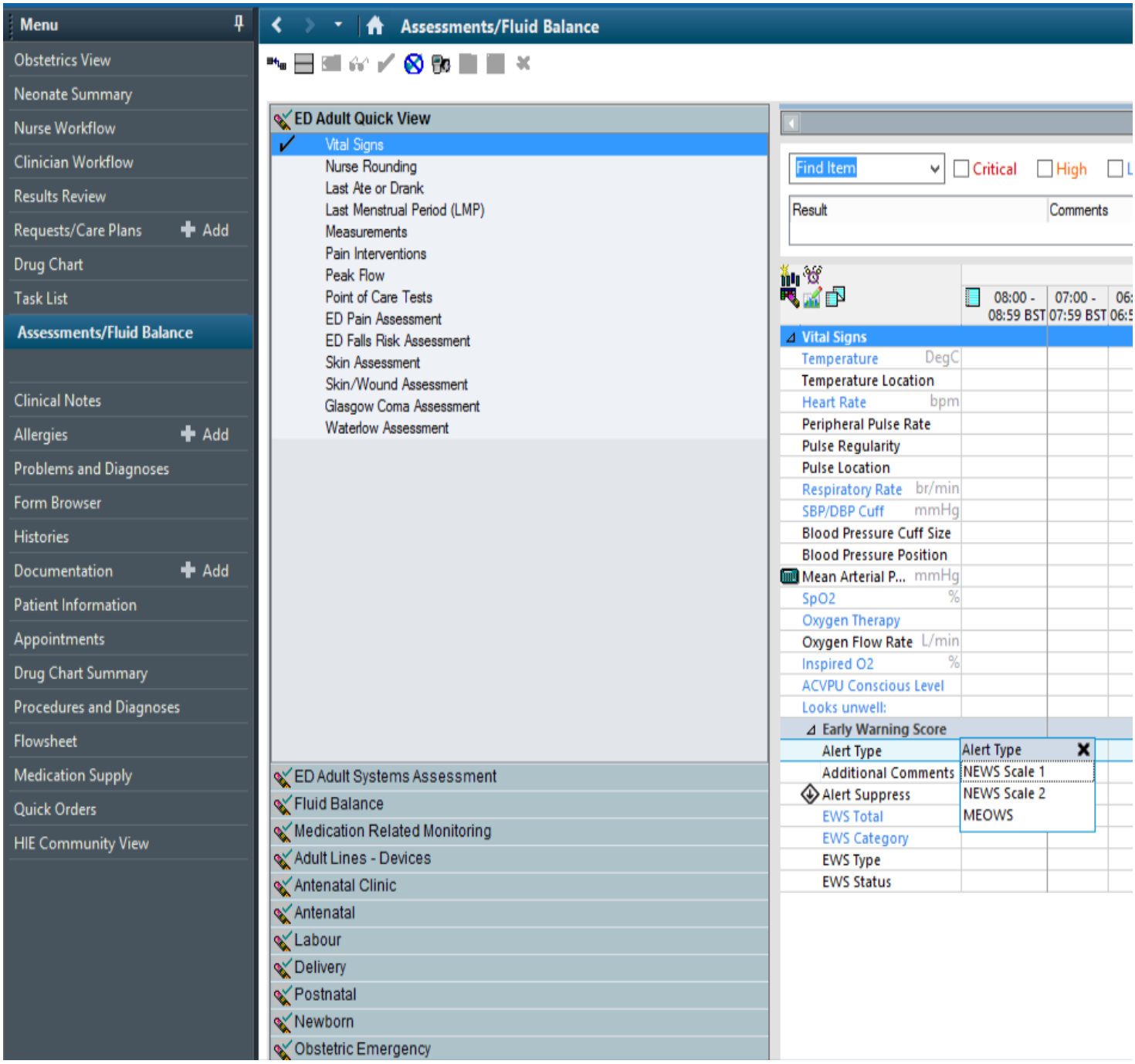
5.4 Equality Impact Assessment

As part of its development, this Guideline and its impact on equality has been reviewed. The purpose of the assessment is to minimise and if possible, remove any disproportionate impact on the grounds of race, gender, disability, age, sexual orientation, religion or belief, pregnancy and maternity, gender reassignment or marriage and civil partnership. No detriment was identified. Equality Impact assessments will show any future actions required to overcome any identified barriers or discriminatory practice.

Equality Impact Assessment			
Division	Women & Children's	Department	Maternity
Person completing the EqIA	Mary Plummer	Contact No.	Ext 85130
Others involved:		Date of assessment:	25/07/2019
Existing policy/service	Yes	New policy/service	

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	*all staff*

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognise diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
Pregnancy and maternity	NO	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	



Appendix 1: Clinical Response to MEOWS trigger

MEOWS - AMBER ALERT

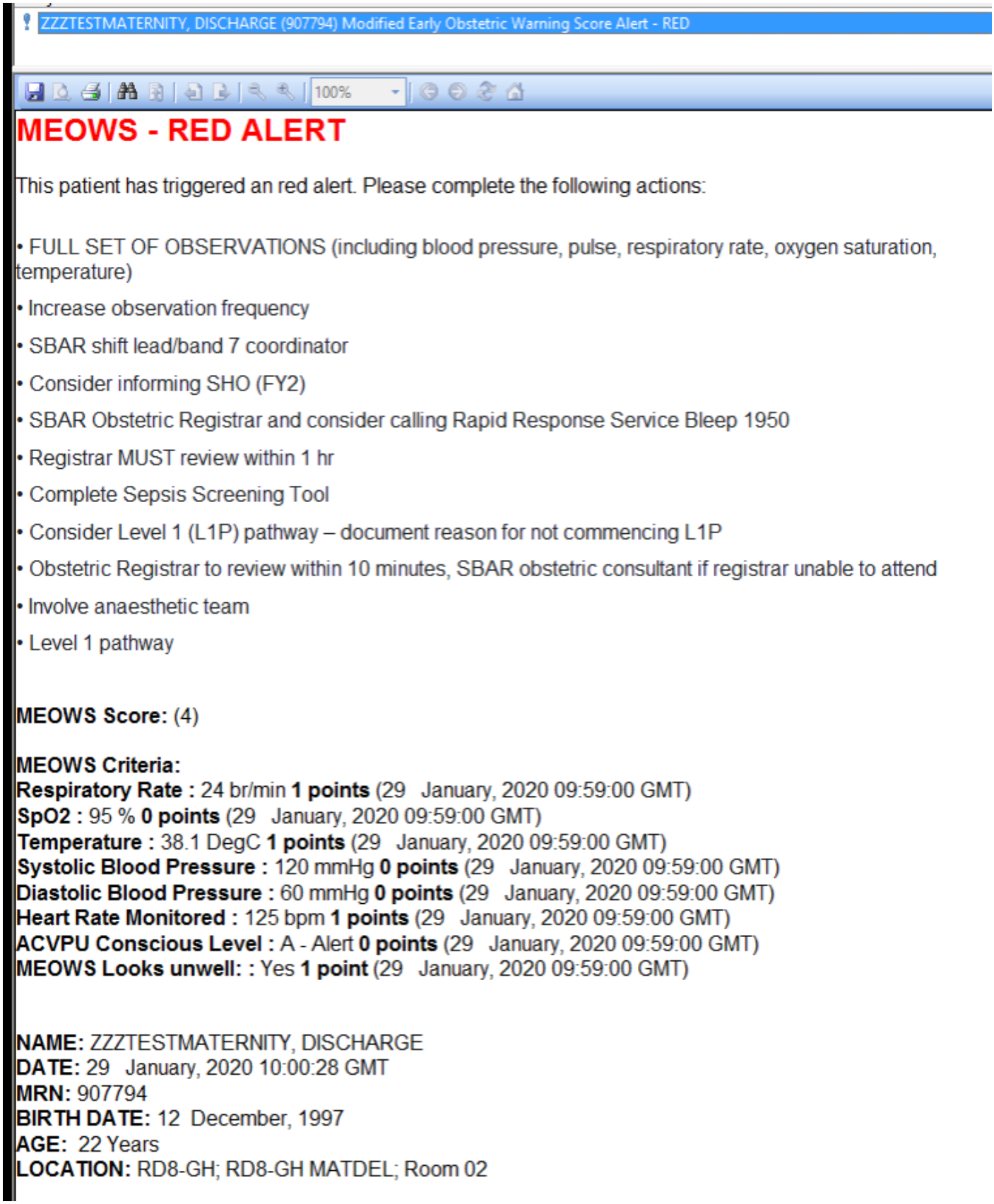
This patient has triggered an amber alert. Please complete the following actions:

- FULL SET OF OBSERVATIONS (including blood pressure, pulse, respiratory rate, oxygen saturation, temperature)
- Increase observation frequency
- SBAR shift lead/band 7 coordinator
- Consider informing SHO (FY2)
- SBAR Obstetric Registrar and consider calling Rapid Response Service Bleep 1950
- Registrar MUST review within 1 hr
- Complete Sepsis Screening Tool
- Consider Level 1 (L1P) pathway – document reason for not commencing L1P

MEOWS Score: (2)

MEOWS Criteria:
Respiratory Rate : 24 br/min **1 points** (29 January, 2020 10:08:00 GMT)
SpO2 : 96 % **0 points** (29 January, 2020 10:08:00 GMT)
Temperature : 36.8 DegC **0 points** (29 January, 2020 10:08:00 GMT)
Systolic Blood Pressure : 120 mmHg **0 points** (29 January, 2020 10:08:00 GMT)
Diastolic Blood Pressure : 60 mmHg **0 points** (29 January, 2020 10:08:00 GMT)
Heart Rate Monitored : 124 bpm **1 points** (29 January, 2020 10:08:00 GMT)
ACVPU Conscious Level : A - Alert **0 points** (29 January, 2020 10:08:00 GMT)
MEOWS Looks unwell: : No **0 points** (29 January, 2020 10:08:00 GMT)

NAME: ZZZMATERNITYTEST, TWO
DATE: 29 January, 2020 10:09:35 GMT
MRN: 907260
BIRTH DATE: 01 January, 1990
AGE: 30 Years
LOCATION: RD8-GH; RD8-GH Ward-09; Bay 04


ZZZTESTMATERNITY, DISCHARGE (907794) Modified Early Obstetric Warning Score Alert - RED

100%

MEOWS - RED ALERT

This patient has triggered an red alert. Please complete the following actions:

- FULL SET OF OBSERVATIONS (including blood pressure, pulse, respiratory rate, oxygen saturation, temperature)
- Increase observation frequency
- SBAR shift lead/band 7 coordinator
- Consider informing SHO (FY2)
- SBAR Obstetric Registrar and consider calling Rapid Response Service Bleep 1950
- Registrar MUST review within 1 hr
- Complete Sepsis Screening Tool
- Consider Level 1 (L1P) pathway – document reason for not commencing L1P
- Obstetric Registrar to review within 10 minutes, SBAR obstetric consultant if registrar unable to attend
- Involve anaesthetic team
- Level 1 pathway

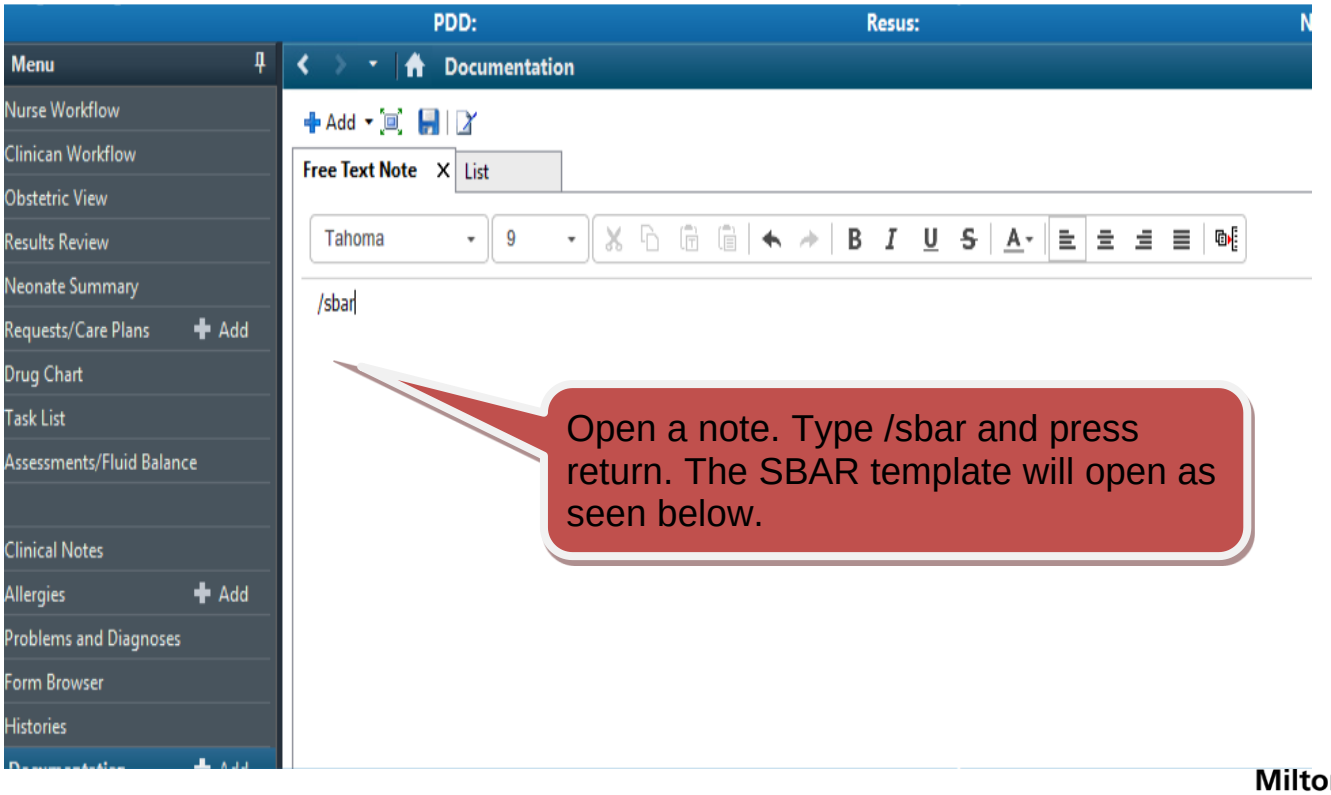
MEOWS Score: (4)

MEOWS Criteria:
Respiratory Rate : 24 br/min **1 points** (29 January, 2020 09:59:00 GMT)
SpO2 : 95 % **0 points** (29 January, 2020 09:59:00 GMT)
Temperature : 38.1 DegC **1 points** (29 January, 2020 09:59:00 GMT)
Systolic Blood Pressure : 120 mmHg **0 points** (29 January, 2020 09:59:00 GMT)
Diastolic Blood Pressure : 60 mmHg **0 points** (29 January, 2020 09:59:00 GMT)
Heart Rate Monitored : 125 bpm **1 points** (29 January, 2020 09:59:00 GMT)
ACVPU Conscious Level : A - Alert **0 points** (29 January, 2020 09:59:00 GMT)
MEOWS Looks unwell: : Yes **1 point** (29 January, 2020 09:59:00 GMT)

NAME: ZZZTESTMATERNITY, DISCHARGE
DATE: 29 January, 2020 10:00:28 GMT
MRN: 907794
BIRTH DATE: 12 December, 1997
AGE: 22 Years
LOCATION: RD8-GH; RD8-GH MATDEL; Room 02

Appendix 2: SBAR communication tool example & eCare screenshots

S **SITUATION**	Date: Time: Location: Drs name: Shift Leads name: RRS: Y N My name is: I am calling about: The problem is: The woman was admitted on ……../……../…… with
B **BACKGROUND**	Gravida: Para: Gest/Days PN: Past medical/obstetric history: The MEOWS is
A **ASSESSMENT**	Clinical impression/actions/observations: Other relevant factors e.g. sepsis screening, blood results, urine output
R	I request you review this woman within the next ……..hrs/mins



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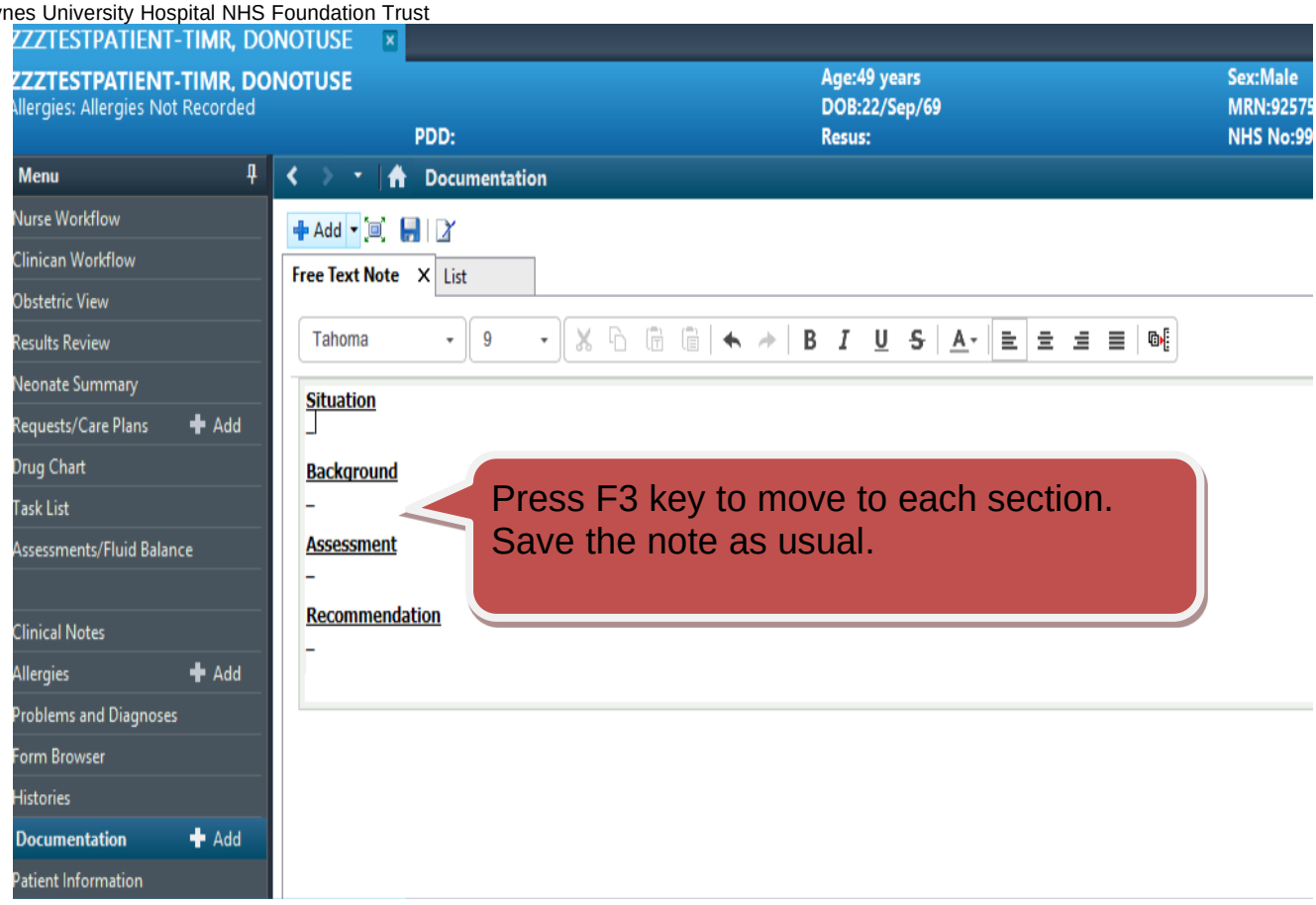
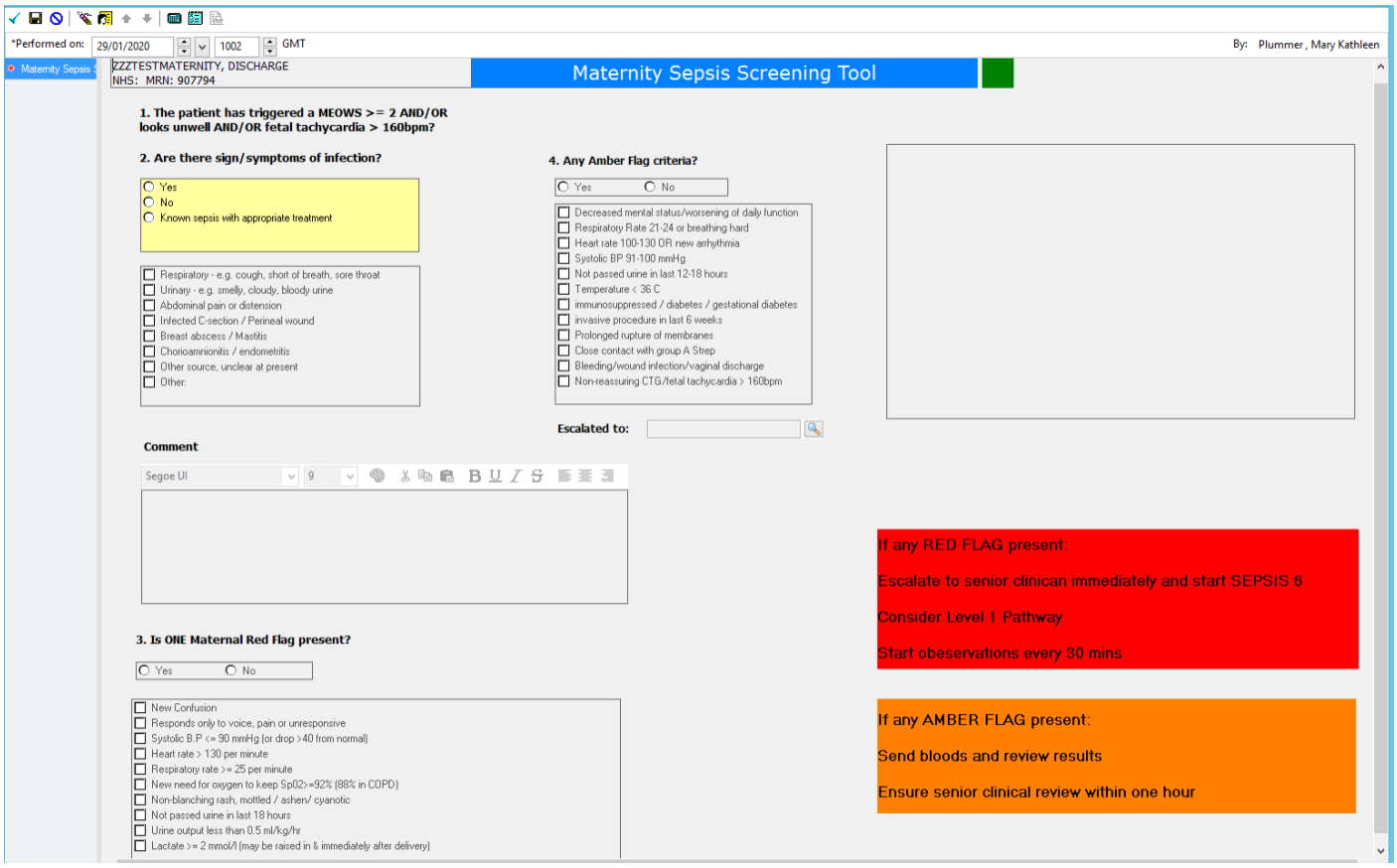


Appendix 3: Sepsis Screening Tool & Care Bundle

Based on the Sepsis 6 developed by the UK Sepsis Trust.



Sepsis 6 Care Pathway (Complete in 1 Hour):

Document time: ….. : ….. Staff name … … … … … … … … … … … … Designation … … … … … … … … … … … …

Ensure Obstetric team and RRS (1950) attend and work together to achieve these tasks

	Time Started	Name	Reason not done or result
1. Give high-flow oxygen 100% 15 Litres/minute			
2. Take blood cultures *Unless already taken* • Consider also urine, HVS/LVS, wound swab, sputum • Consider imaging to find source			
3. Give IV antibiotics immediately **SEE GUIDANCE BELOW**			
4. Give a fluid challenge **If Syst BP <90: Stat** 20ml/kg 0.9% Saline **Not hypotensive**: At least 500ml 0.9% Saline			
5. Measure lactate **If >2mmol/l**, give 20ml/kg crystalloid (*Unless already given*) **If > 4mmol/l, escalate appropriately**			
6. Measure Urine Output May need catheterising Start fluid balance chart			

Likely Source of Sepsis:	Most Appropriate Antibiotic Regime: Penicillin Allergies: Check Antimicrobial guidelines/Rx Guidelines for alternative
Respiratory: cough, sputum, chest pain, LRTI	Severe Community Acquired Pneumonia: Amoxicillin 1g IV TDS + Clarithromycin 500mg IV/PO BD
	Severe Hospital Acquired Pneumonia: Piperacillin/Tazobactam 4.5g TDS
Urinary Tract: dysuria, +ve dip, haematuria	IV Gentamicin as per protocol +/-Amoxicillin 1g TDS
Intra-abdominal:	IV Amoxicillin 1g TDS + IV Gentamicin OD + IV Metronidazole 500mg TDS
Uterine/perforation/unknown	
Skin: cellulitis, wound infection	Benzylpenicillin 1.2g IV QDS plus Flucloxacillin 1g IV QDS
Meningitis/Endocarditis/ESBL	Discuss with microbiology
SEPSIS UNKNOWN ORIGIN	Piperacillin/Tazobactam 4.5g IV TDS + Gentamicin IV OD as per protocol

ANTIBIOTICS MUST BE REVIEWED AT 24 HOURS AND CHANGED ACCORDING TO EMPIRICAL ANTIMICROBIAL POLICY FOR SITE SPECIFIC INFECTIONS, OR ACCORDING TO CULTURES AND SENSITIVITIES

Appendix 4: Roles and Responsibilities of the Rapid Response Service

Roles and Responsibilities of the Rapid Response Service

To ensure appropriate and timely treatment for potentially deteriorating adult patients by:

1. Responding to 1950 bleep within 5 minutes at all times.
2. Arriving on Ward within 10 minutes unless detained by another patient, then case load will be triaged.
3. Obtaining a full history from nursing/midwifery and medical staff, and patient where appropriate
4. Physical assessment of the patient along the ALERT principles
5. Plan and coordinate with medical and nursing/midwifery staff, actions to include appropriate investigations, treatments and referrals.
6. Ensuring prompt referral to senior staff when appropriate
7. Ensuring full documentation in eCare. Activity of Rapid Response Service will be recorded alongside a clinical plan.
8. Reviewing patient within 24 hours

To support and educate junior medical and nursing staff by:

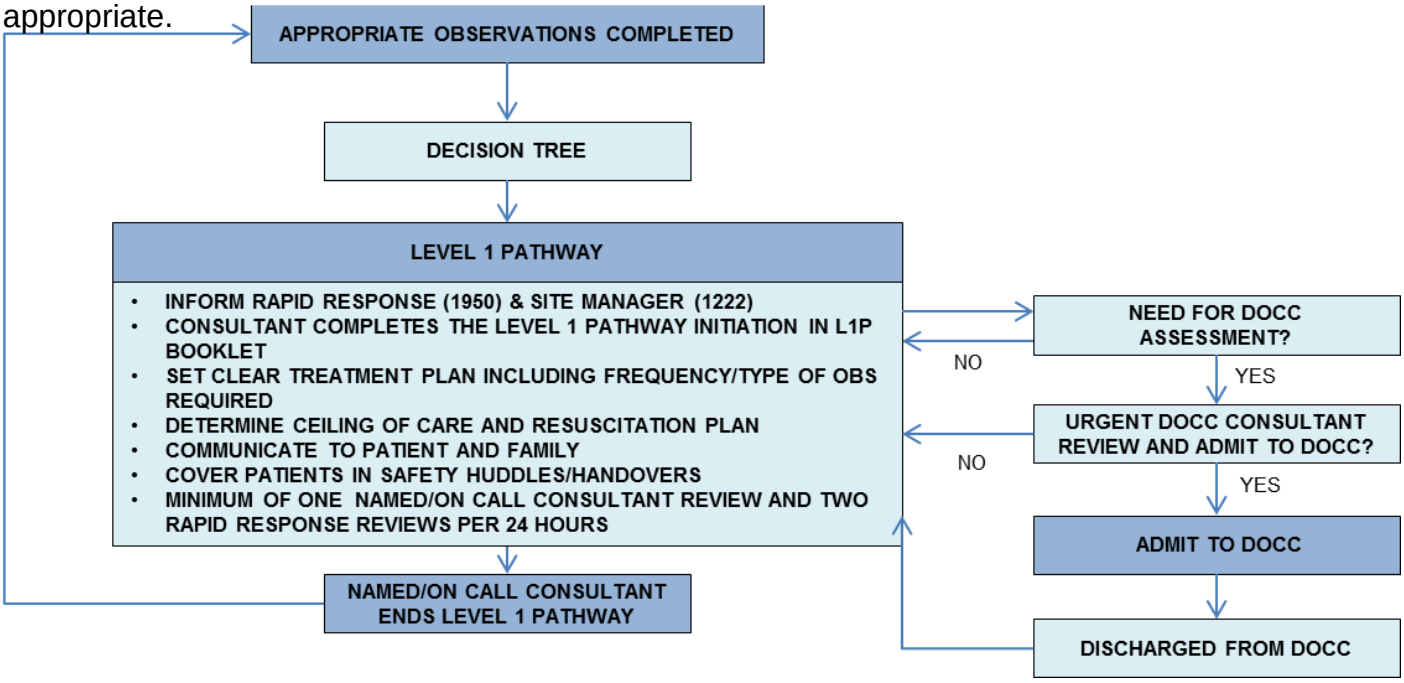
1. Providing prompt clinical expertise whilst working alongside clinical staff responsible for the care of the patient
2. Using a non-judgmental approach
3. Using every opportunity to educate at the bedside

To provide evidence to support the recommendations by the NPSA (2007) and NICE (2007) guidelines by:

1. Auditing the activity of the Rapid Response Service and reporting to the Trust annually
2. Reporting the trend in the number of in-patient cardiac arrests and unplanned admissions to DoCC from the ward areas. Unplanned admissions to DoCC exclude patients from theatres and ED.

Appendix 5 – The Level 1 Pathway

The Level 1 Pathway (L1P) is a package of measures for adult patients implemented by the multi-disciplinary team in a coordinated way so that high risk patients are proactively identified, monitored, optimally treated and effectively transferred to higher levels of care when this is appropriate.



Adult Level 1 Pathway - Standard Operating Procedure

The Level 1 Pathway (L1P) is a set of interventions delivered by the multidisciplinary team for adult inpatients at risk of deterioration. The pathway provides a coordinated process to identify, monitor and optimise patient management.

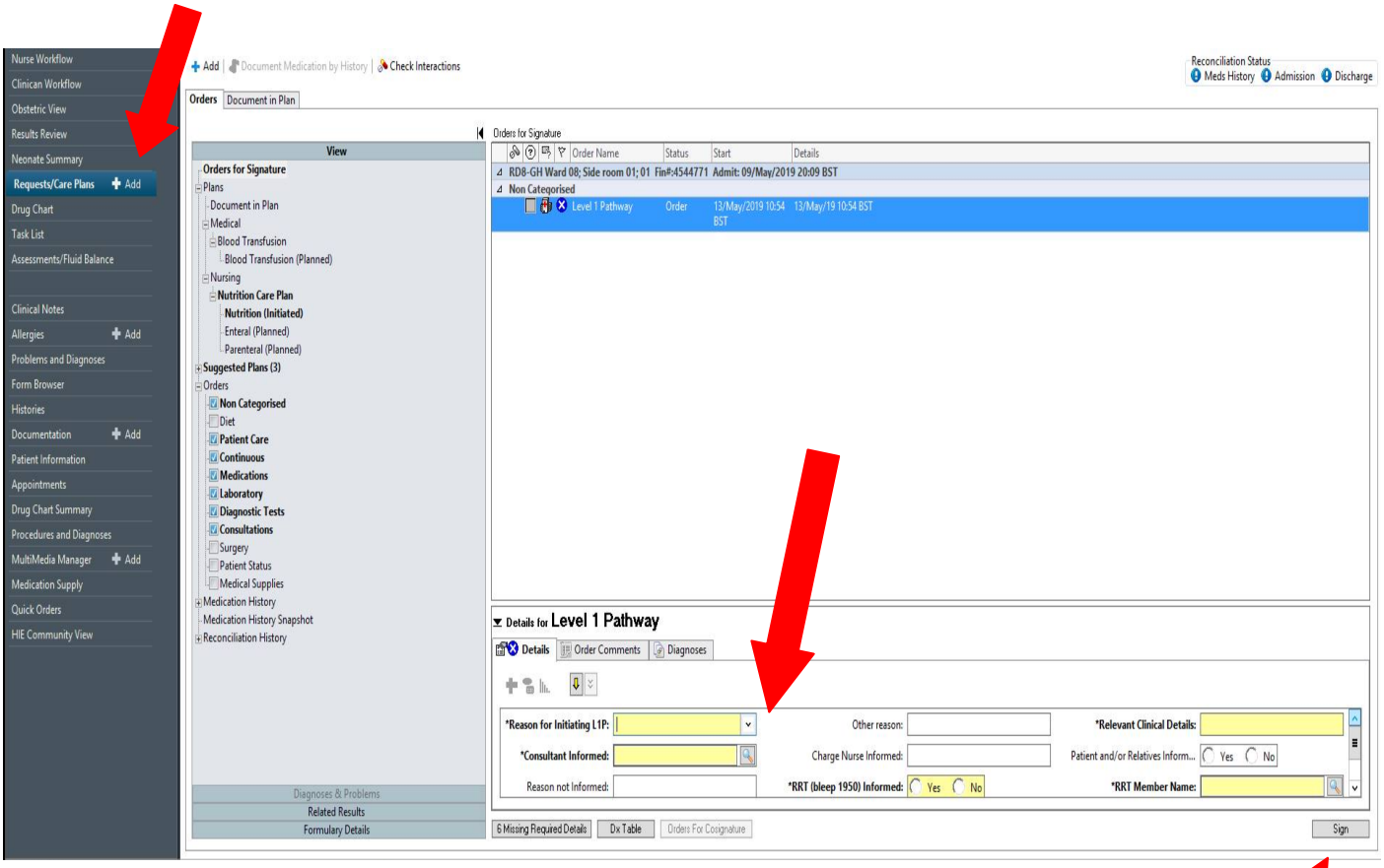
Anyone can identify and highlight patients at increased risk. These patients may:

- be identified by their MEOWS score following 2 or more triggers
- have a high-risk diagnosis e.g. trauma, eclampsia, obstetric haemorrhage, sepsis, recent thrombolysis, tracheostomy
- be recently discharged from the Department of Critical Care (DOCC)
- have concerns raised by a healthcare professional, patient or relative

Initiation of the Level 1 Pathway

The patient's named consultant/on call consultant has the sole responsibility to place the patient on the L1P. Following consultant bedside review of the patient in hours, or registrar review and consultant telephone consultation out of hours, the patient is started on the Level 1 Pathway by

- Initiating the L1P care plan on eCare (see image below):
  - Press **+Add** on 'Requests/Care Plans'
  - Type Level 1 Pathway and press done
  - Fill out yellow boxes with appropriate information
  - Sign when completed



- Informing the Midwife in Charge of the patient's ward
- Inform the Maternity Bleep Holder (1440)
- Informing Rapid Response (bleep 1950)
- Informing the Site Manager (bleep 1222)

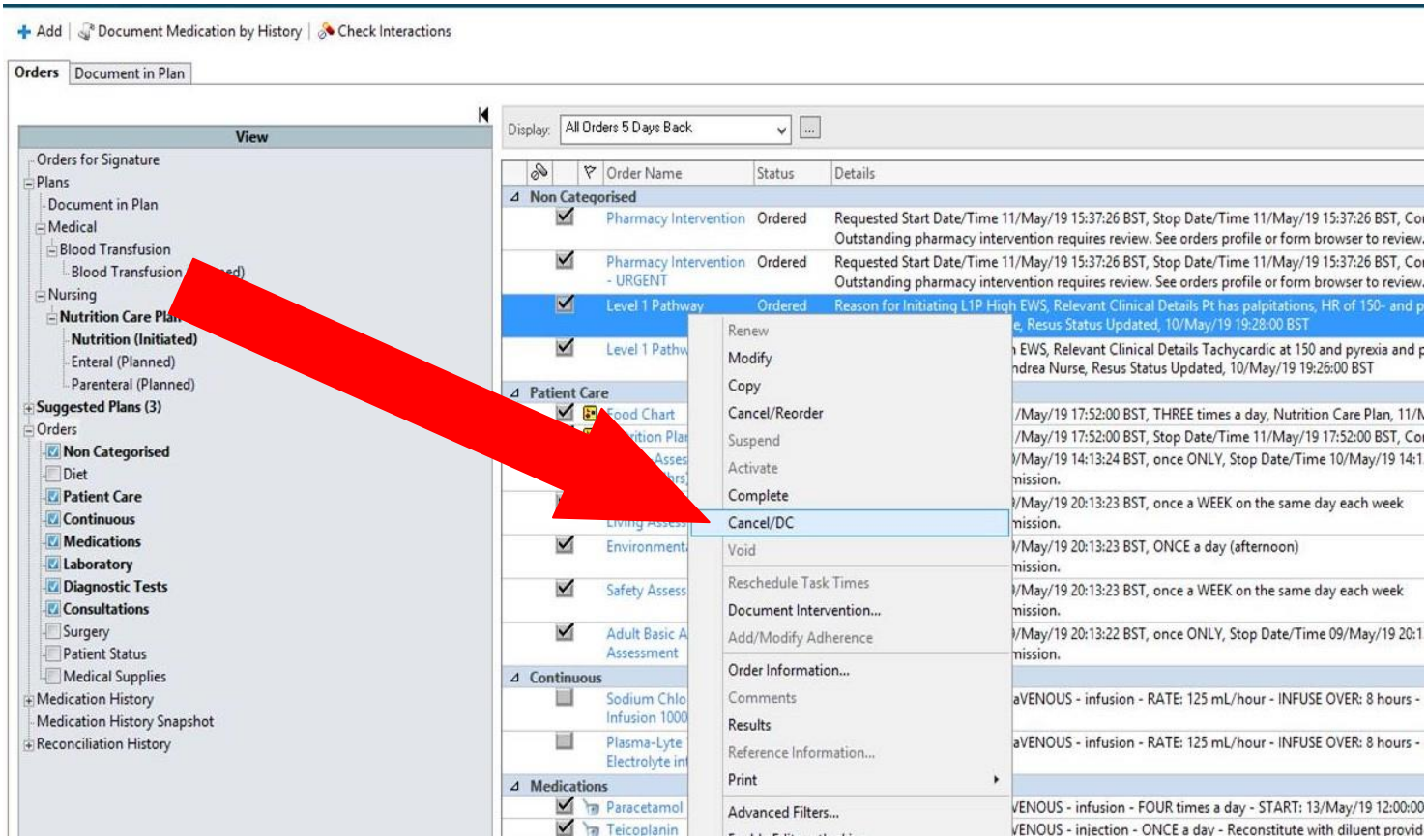
Conduct whilst on the Level 1 Pathway

- Whilst on the L1P, all reviews should be clearly documented on eCare
- Patients will receive daily consultant review. In exceptional circumstances this may be a consultant's opinion following a ST3 review, clearly documented on eCare
- Patients will receive 12° Rapid Response review (2 reviews in 24 hours)
- For patients on the L1P the treating/on-call consultant or registrar (following consultant opinion) or the Rapid Response Nurse can refer direct to DOCC
- DOCC team to review patients within 1 hour of request (subject to competing clinical pressures)
- Review of midwifery care on ward
- Machine allocated to patient on ward and consider more observable bed

Exiting from the Level 1 Pathway

The patient's named consultant has the sole responsibility to remove the patient from the L1P. Reasons for this must be clearly documented on eCare and may include that the patient is perceived as not at risk of deterioration, the patient may be for palliative management only or the patient is admitted to DOCC.

Only once this has been clearly documented, can the L1P care plan on eCare be discontinued by right clicking on the care plan and selecting the 'Cancel/DC' option - see image below.



Identification of need

The Level 1 Pathway (L1P) is a set of interventions delivered by the multidisciplinary team for women identified at risk of deterioration. The pathway provides a coordinated process to identify, monitor and optimise the management of women in our care.

Anyone can identify and highlight women at increased risk. These women may:

- be identified by the Maternity Early Observation Warning System (MEOWS) chart following 2 or more triggers
- have a high-risk diagnosis e.g. eclampsia, massive obstetric haemorrhage, sepsis
- have been recently discharged from the Department of Critical Care (DOCC)
- have concerns raised by healthcare professional, patient or relative

Initiation of the Level 1 Pathway

The named obstetric consultant/on call obstetric consultant has the sole responsibility to place a woman on the L1P. Following consultant **bedside** review of the woman (in hours), or ST3 review and consultant telephone consultation (**out of hours)**, the woman is started on the Level 1 Pathway by:

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Appendix 6 – ABCDE Assessment (Based on the ABCDE approach developed by the Resuscitation Council (UK).

Airway (A)

Airway obstruction is an emergency. If left untreated may lead to hypoxia, damage to the brain, heart and kidneys, cardiac arrest, and death.

Look for signs of airway obstruction/Assessment

- Snoring (partial obstruction)
- Gurgling (fluids)
- Colour of patient

Breathing (B)

Look for signs of breathing problems…LOOK, LISTEN, FEEL assessment

- Respiratory Rate
- SpO2
- WOB
- Depth, pattern, symmetry
- Colour
- Auscultate
- Percuss

Circulation (C)

Assessment

- Colour…including limbs, are they pink, blue, pale or mottled?
- Pulse - rate, volume and regularity
- BP
- CRT(capillary refill time)
- Look for signs of poor cardiac output, reduced conscious level, chest pain, confusion, reduced urine output (<0.5ml/kg/hr)

Disability (D)

Common causes of unconsciousness include profound hypoxia, hypercapnia, high or low blood glucose levels, cerebral hypo-perfusion and the recent administration of sedatives and/or analgesics.

- Review ABC
- Check the drug chart
- Examine pupils
- ACVPU/GCS
- Measure blood glucose
- Nurse in lateral position if airway is not protected

Exposure (E)

Head to toe examination. Maintain dignity and minimise heat loss.

- Ankle oedema
- Calves
- Rashes
- Drains full
- Malaena
- Distended abdomen
- Wound