

# Maternal Enhanced and Critical Care Competency and Training Framework

*Yorkshire and the Humber*

*April 2018*

*This document forms the first Maternal Enhanced and Critical Care (MEaCC) Competencies Framework for Yorkshire and the Humber and should be used in line with the Yorkshire and the Humber MEaCC Recommendations.*

# 1 Foreword

We are increasingly tasked with caring for women with complex medical needs in busy maternity units. Several recent reports, including the National Maternity Review (2015), have highlighted the increasing need for multidisciplinary care working across geographical and specialty boundaries.

Our aim is not to tell Trusts what their maternity units should look like, but rather to establish the skills and competences a nurse or midwife should have when caring for a woman with enhanced or critical care needs, whether this care is delivered in a maternity or critical care unit.

In 2016, a regional workshop was held to identify enhanced and critical care priorities in maternity for Yorkshire and the Humber (Y&H). Following this, the Maternal Enhanced and Critical Care (MEaCC) Task and Finish group was established to review these priorities, national standards, recommendations and competencies to develop regional competencies. This multidisciplinary group included representatives from obstetrics, midwifery, obstetric anaesthesia, critical care nursing and medicine, and NHS England.

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# Acknowledgements

Thank you to the following people from the MEaCC task and finish group for their contribution to this project:

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# Introduction and Definitions of Care

## Competencies Framework

Competencies are the skills, knowledge and behaviours that lead to successful performance. The following competencies have been developed by the Yorkshire and the Humber (Y&H) Maternal Enhanced and Critical Care (MEaCC) Task and Finish Group (T&FG) on behalf of the Y&H Maternity Clinical Network (CN).

They draw heavily on established and draft national standards, recommendations and competencies with input from Trusts and stakeholders across the region. This competency framework sets out best practice for how we would like staff to work in regard to MEaCC, for women who are cared for in hospital and supports the Y&H MEaCC Recommendations.

Professionals will need to evidence their knowledge and understanding of all competencies applicable to their role. All professionals working at an enhanced level will need both standard and Enhanced Maternal Care (EMC) competencies.

## Training Framework – Appendix 1

In order to assist acute trusts to identify training that fits their service and staffing needs, a training framework has been included in this document. The information has been developed using existing evidence and includes regional and national courses.

## MEaCC Definitions

The following definitions have been agreed by the Y&H MEaCC Task and Finish Group.

MEaCC Definitions of Care	
Standard Maternity Care	Patients whose needs can be met through normal ward care in an acute hospital.
Enhanced Maternity Care	Patients at risk of their condition deteriorating, or those recently relocated from higher levels of care, whose needs can be met on an acute ward with additional advice and support from the critical care team.

## Enhanced Maternity Care

*Enhanced Maternity Care (EMC) is a new standard of care beyond normal maternity care for women with medical or surgical problems during pregnancy or the post-partum period, but without the severity of illness that requires full critical care support. Through EMC competencies we focus on early recognition and response to deterioration and closer working between maternity and critical care teams to optimise care.*

(Draft Enhanced Care of the Sick Mother; Standards for Maternal Critical Care - unpublished)

# General Care / Deteriorating Patient

## MEaCC Competency Framework: General

**Deteriorating Patient:** The following competency statements relate to general elements of care required when supporting women in need of enhanced maternal care:

### Standard

Complete the obstetric specific Early Warning Score accurately.

*Need a process to audit compliance that a full set of observations are being undertaken – particularly if not electronic.*

Follow 'track and trigger' system to escalate care.

Provide accurate documentation of assessment/intervention/evaluation and referrals.

Give patients and families clear explanations about care and treatment.

Ensure patient safety; understand your role in influencing the quality of safe and effective enhanced and critical care services.

- Identify actual or potential risks or incidents and take required actions.
- Promote a safe culture that learns from and responds to risk.
- Instigate immediate response to safeguard patients.
- Report adverse or potential risks through internal clinical incident reporting system.

End of shift handover, demonstrates the ability to effectively handover including:

Ability to communicate frequency of observations and ongoing management plans for all patients who have reached the low, medium or high trigger and also for those where there is clinical concern.

Identify reasons/conditions that may lead to a women deteriorating e.g. sepsis, pre-eclampsia, difficulties breathing etc.

# Respiratory / Oxygen

## MEaCC Competency Framework: Respiratory / Oxygen

**Respiratory System:** Assess and monitor the patient requiring respiratory support and take appropriate action where required. Assessment will include:

Standard	Enhanced
Respiratory rate/depth/pattern of breathing.	Peak Flow.
Pulse oximetry.	Use of accessory muscles.
Sputum.	

**Respiratory System:** Demonstrate an appropriate response to the observations that you have recorded including:

Re-positioning the patient.	Assist with deep breathing and expectoration.
Referral to and working with physiotherapist.	<p>Safely perform ABG sampling from arterial lines and report results to appropriate team member.</p> <p><i>When an arterial line is in use there must be a nurse or midwife on shift with this competency.</i></p>
Obtaining and processing sputum samples.	<p>Knowledge and understanding of:</p> <ul style="list-style-type: none"> <li>• Risk factors for developing respiratory failure.</li> <li>• Signs &amp; symptoms of respiratory failure.</li> <li>• Assessment and interpretation of altered respiratory observations.</li> </ul>

# Respiratory / Oxygen

## MEaCC Competency Framework: Respiratory / Oxygen

**Oxygen therapy:** Assemble relevant equipment and administer oxygen therapy via:

Standard	Enhanced
A simple face mask.	Humidification devices.
Nasal cannula.	A variable flow O <sub>2</sub> delivery system e.g. Venturi.
Reservoir mask.	

**Set-up and use pulse oximetry:**

Standard
Select appropriate probe site.
Set alarms appropriately.
Understand limitations of pulse oximetry.
Identify possible causes of hypoxia and breathlessness, commence oxygen therapy and escalate appropriately.

## MEaCC Competency Framework: Respiratory / Oxygen

Provide appropriate intervention for women experiencing airway problems:

Standard	Enhanced
Position.	Urgent endotracheal intubation - assist with urgent intubation.
Head-tilt/chin-lift/jaw-thrust.	
Have knowledge of emergency airway equipment.	
Select appropriate emergency airway device.	
Demonstrate safe insertion of emergency airway device e.g. oropharyngeal airway.	
Demonstrate bag-valve-mask ventilation two-person technique.	
Urgent endotracheal intubation - recognise endotracheal tube and laryngoscope.	

**Pharmacology:** Safely prepare and administer medications used in respiratory care

Systemic steroids.	Administer drugs via nebuliser <ul style="list-style-type: none"> <li>• Identify and collect appropriate equipment if requested.</li> <li>• Recognise nebuliser devices and can use under supervision.</li> <li>• Administer therapy using correct driving gas as prescribed.</li> <li>• Review effectiveness of nebuliser therapy and revise treatment accordingly.</li> </ul>
	Bronchodilators and steroid inhalers.

# Cardiovascular

## MEaCC Competency Framework: Cardiovascular

**Cardiovascular System:** Accurately perform and correctly document a full cardiovascular assessment including:

### Standard

Manual pulse strength/volume/character - manual if irregular.

Blood pressure, including manual systolic and diastolic with appropriate cuff sizes.

Capillary refill time.

**Cardiovascular System:** Central venous access. When a central line is used there must be a nurse or midwife on shift with these competencies:

### Enhanced

Safely prepare for and assist with the insertion of a central line.

Discuss checking the line position before use in accordance with local policy.

Correctly prime a transducer.

Correctly attach a transducer to a central line.

Correctly zero a transducer.

Correctly identify when re-zeroing is required.

Correctly set appropriate alarm limits.

Apply an appropriate dressing to the central line in accordance with local policy.

Safely use and change needle-free ports.

Safely remove a central line.

**Cardiovascular System:** Arterial line management. When an arterial line is used there must be a nurse or midwife on shift with these competencies:

## Enhanced

Prepare for and assist in the safe insertion of an arterial line.

Correctly prime a transducer.

Correctly attach a transducer to an arterial line.

Correctly zero a transducer.

Correctly identify when re-zeroing is required.

Correctly set appropriate alarm limits.

Apply an appropriate dressing in accordance with local policy.

Correctly obtain a blood sample from the arterial line.

Safely remove an arterial line.

**Shock:** Recognise, interpret and appropriately escalate signs and symptoms of:

## Standard

Cardiovascular shock.

Hypovolemic shock.

Anaphylactic shock.

Septic shock (including 1st hour care duties).

# Cardiovascular

## Cardiac rhythms

Standard	Enhanced
Correctly attach the patient to a cardiac monitor.	ECG monitoring and recording of trace. Use machine to perform 12 lead ECG. Knowledge of local equipment e.g. refilling paper/toner. Escalate for review.
Correctly check 'emergency' equipment including defibrillator.	Alternatives to peripheral venous access. Have knowledge of when central venous access may be required and assist in preparing equipment.
Recognition of normal sinus rhythm. Correctly identify and follow BLS/ILS guidelines for dysrhythmias.	
Demonstrate a basic understanding of the normal cardiac cycle.	
External chest compressions. Recognise when cardio-pulmonary resuscitation is in progress.	
External chest compressions In hospital resuscitation.	
Alternatives to peripheral venous access Recognition of a Central Venous Catheter and arterial line.	

**Associated pharmacology:** Demonstrate knowledge and understanding of prescribed medications used to support the cardiovascular system including:

## Standard

Anti-hypertensive drugs.

Magnesium Sulphate.

Safely prepare and administer prescribed medications used to support the cardiovascular system, including:

- Anti-hypertensive drugs.
- Magnesium Sulphate.

# Renal

## MEaCC Competency Framework: Renal

**Renal System:** The following competency statements relate to the safe and effective assessment of renal function, monitoring of fluid balance, and care of women at risk of acute kidney injury:

Standard	Enhanced
Identify factors which may affect the assessment of renal function (e.g. blocked catheters and urinary retention).	Determine the monitoring needs for women at risk of deteriorating renal function. Escalate appropriately.
Administer appropriate care to the patient with a urinary catheter (according to national guidelines and local policy).	
Utilise locally available equipment: <ul style="list-style-type: none"> <li>• Catheterisation equipment.</li> <li>• Urometers.</li> </ul>	
Monitor and review biochemistry and haematology results and take appropriate action.	
Urinary catheter; Insert catheter/ remove catheter.	

## MEaCC Competency Framework: Fluid Management

### Manage fluid replacement:

Standard	Enhanced
Recognise altered fluid status.	Identify women who are fluid-overloaded.
Recognise the need for referral for fluid intervention and therapies.	
Recognise the response to fluid intervention.	
Recognise the need for fluid restriction.	
Administer fluids in accordance with local guidelines.	
Demonstrate the ability to accurately measure and record fluid balance and report abnormalities appropriately.	
Evaluate the effectiveness of fluid replacement.	
Intravenous fluid maintenance and resuscitation; use infusion equipment.	
Intravenous fluid maintenance and resuscitation; retrieve correct IV fluid, volume and infusion device.	
Intravenous fluid maintenance and resuscitation; administer fluid as prescribed and in accordance with local protocols.	

# Neurological

## MEaCC Competency Framework: Neurological

**Neurological System:** The following competency statements relate to the assessment and management of neurologically compromised women:

Standard	Enhanced
<p>Identify deterioration in neurological status:</p> <ul style="list-style-type: none"> <li>• Undertake a neurological assessment using the AVPU (alert, voice, pain, unresponsive) scoring system.</li> <li>• Check blood glucose and take appropriate action.</li> </ul>	<p>Identify focal deficits such as:</p> <ul style="list-style-type: none"> <li>• Gag and swallow reflex.</li> <li>• Pupillary response.</li> </ul>
<p>Demonstrate an appropriate response to the observations recorded, including:</p> <ul style="list-style-type: none"> <li>• Protecting the airway.</li> <li>• Placing patient in recovery position.</li> </ul>	<p>Pupil responses</p> <ul style="list-style-type: none"> <li>• Knowledge of how they are regulated.</li> <li>• Abnormal responses and possible causes including focal and generalised deficit.</li> </ul>

## MEaCC Competency Framework: Other

Standard	Enhanced
<p><b>Care of peripheral venous access:</b> Undertake and record observations of in situ cannula in accordance with local protocol.</p>	<p><b>Acute confusional states:</b> Evaluate effectiveness of treatment refine treatment plan if necessary and recognise when referral to critical care is indicated.</p>
<p><b>Care of peripheral venous access:</b> Identify need for replacement.</p>	<p><b>Seizures:</b> Have knowledge of the causes of seizures, eliminate hypoglycaemia and hypoxia as causes and respond in accord with local protocol.</p>
<p><b>Peripheral Venous Cannula:</b> Assess potential sites for peripheral IV access and insert cannula.</p>	<p><b>Portable monitoring:</b></p> <ul style="list-style-type: none"> <li>• Identify and transport equipment to the patient.</li> <li>• Assist in setting up of the equipment.</li> <li>• Use portable monitoring equipment to measure heart rate, oxygen saturation, respiratory rate and blood pressure.</li> </ul>
<p><b>IV infusions (giving sets and pumps):</b> Recognise presence of IVI and safely transfer patients with IVI's.</p>	<p><b>Blood Glucose measurement and interpretation:</b> Evaluate effectiveness of treatment refine treatment plan if necessary and recognise when referral to critical care is indicated.</p>
<p><b>IV infusions (giving sets and pumps):</b></p> <ul style="list-style-type: none"> <li>• Assist patient to manoeuvre with IVI running.</li> <li>• Calculate and record hourly fluid input.</li> <li>• Use devices for drug infusion.</li> </ul>	

## MEaCC Competency Framework: Other

### Standard

#### Haemorrhage:

- Recognise overt blood loss.
- Assess severity of blood loss and interpret loss in the context of the patient.
- Identify source of bleeding, clinical impact and initiate definitive management.
- Commence resuscitation.

#### Administration of blood products including warming:

- Collect blood products according to local protocols.
- Document administration of blood products.
- Administer products.
- Ensure adherence to traceability protocol.
- Have knowledge of indications for, and risks associated with, blood products.

#### Blood sampling equipment:

- Transport samples according to local protocols.
- Identify which tests are required in an emergency.
- Perform venesection.

#### Emergency drugs:

- Recognise situations when emergency drugs are used.
- Select drug when instructed.

#### Automated external defibrillator:

- Recognise equipment.
- In hospital resuscitation according to local policy.

**Portable suction:**

- Can identify equipment.
- Transports equipment to the ward.
- Use suction in accord with local protocols.

**Blood Glucose measurement and interpretation:**

- Perform blood glucose measurement.
- Interpret blood glucose value in context of the patient.
- Initiate local protocol for hypoglycaemia.

**Acute Confusional states:**

- Recognise that confusion may be marker of illness.
- Understand importance of these signs as markers of pathology.
- Perform additional tests such as capillary blood glucose, checks for hypoxia.

## MEaCC Competency Framework: Other

### Standard

#### **Acute sudden onset headache:**

- Recognise significance of severe sudden onset headache.
- Understand that severe sudden headache; temperature and stiff neck need urgent intervention.

#### **Altered motor /sensory function:**

- Recognise new weakness as abnormal.
- Interpret clinical signs in context of the patient.
- Respond in accordance with local protocol.

**Swallowing difficulties:** Interpret clinical signs in context of the patient and respond in accordance with local protocol.

#### **Seizures:**

- Recognise and record seizures.
- Understand basic practical procedures that need to be done to maintain the safety of the patient e.g. posture, airway.
- Confirm seizure activity, initiate airway protection, oxygen and positioning and respond further in accordance with local protocol.

**Cervical spine protection:** Recognise not to move patient after major trauma unless instructed by senior staff.

#### **Lumbar Puncture:**

- Prepare and send samples according to local protocols.
- Assist with patient positioning.

**Nasogastric tube:** Recognise tube, can record input and output.

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# Maternal Enhanced and Critical Care Training Framework

*Yorkshire and the Humber*

*April 2018*

## Maternal Enhanced and Critical Care Training Framework

The information has been developed using existing evidence and includes regional and national courses, in order to assist acute trusts to identify training that fits their service and staffing needs.

MEaCC Training Framework	Level	Reference
All newly registered nurses joining the Trust must undertake the preceptorship programme and attend the learning session on recognition of the deteriorating patient and escalation.	Standard	
All non-registered staff (e.g. Healthcare Assistants) must receive training and be assessed as competent to perform observations and use the EWS algorithm prior to undertaking these in practice.	Standard	
Regular education and training in the recognition of the deteriorating patient and escalation is essential for all clinical staff (For example, ALS, ILS, Skills and Drills, RAMSI, AIMS, simulation-based training).	Standard	
Teams that work together should also train together, with regular training taking place on the labour ward rather than on 'away days' and being seen as a core activity rather than an optional extra.	Standard	Kings Fund. Safe Births: Everybody's business - independent inquiry into the safety of maternity services in England. <i>Kings Fund</i> , 2008.

# Appendix 1

MEaCC Training Framework	Level	Reference
Simulation-based training, which assesses clinical, communication and team skills within a single exercise, should be offered to all maternity staff, ideally within their own units e.g. PROMPT.	Standard	Kings Fund. Safe Births: Everybody's business - independent inquiry into the safety of maternity services in England. <i>Kings Fund</i> , 2008.
Staff working with acutely ill patients on general wards should be provided with education and training to recognise and understand the physical, psychological and emotional needs of patients who have been transferred from critical care areas.	Standard	National Institute for Health and Care Excellence. CG50 Acutely ill adults in hospital: recognising and responding to deterioration. <i>NICE</i> , 2007.
<b>BLS (Basic Life Support)</b> can be taught locally within trusts and is mandatory for all hospital employees. Algorithms are endorsed by the Resuscitation Council UK ( <a href="http://www.resusc.org.uk">www.resusc.org.uk</a> ).	Standard	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman. the royal college of anaesthetists , 2011.
<b>ALERT (Acute Life-threatening Events — Recognition and Treatment)</b> is a one day multi-professional course, using a structured and prioritised system of patient assessment and management to assist treating the acutely unwell ( <a href="http://www.alert-course.com">www.alert-course.com</a> ).	Enhanced	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman. the Royal College of Anaesthetists , 2011.
<b>AIM (Acute Illness Management)</b> is a one-day inter-professional course standardising the clinical approach to recognition, assessment and management of acutely ill adult patients. ( <a href="http://www.gmskillsinstitute.nhs.uk">www.gmskillsinstitute.nhs.uk</a> ).	Standard	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman, the Royal College of Anaesthetists, 2011.
<b>ILS (Immediate Life Support)</b> is a one day course. It develops skills in cardiopulmonary resuscitation, simple airway management and safe defibrillation. It is designed for first responders, who on arrival of a cardiac arrest team may also participate as members of that team. ILS is administered by the Resuscitation Council UK ( <a href="http://www.resusc.org.uk">www.resusc.org.uk</a> ).	Standard	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman, the Royal College of Anaesthetists, 2011.
<b>ALS (Advanced Life Support)</b> is a two-day course. It develops skills in effective management of peri-arrest situations and cardiorespiratory arrest. It prepares senior members of a multidisciplinary team to treat the patient until transfer to a critical care area is possible. ALS courses are administered by the Resuscitation Council UK ( <a href="http://www.resusc.org.uk">www.resusc.org.uk</a> ) and the Advanced Life Support group ( <a href="http://www.alsg.org">www.alsg.org</a> ).	Enhanced	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman, the Royal College of Anaesthetist, 2011.

MEaCC Training Framework	Level	Reference
<p><b>IMPACT (Ill Medical Patients Acute Care and Treatment)</b> is a two-day inter-professional course designed to teach advanced principles and practice of acute general medical care to doctors at ST1/2 level and senior nurse practitioners. It is sponsored by the Federation of Royal Medical Colleges and the Royal College of Anaesthetists (<a href="http://www.impactmedical.org">www.impactmedical.org</a>).</p>	Enhanced	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman, the Royal College of Anaesthetists, 2011.
<p><b>CCrISP (Care of the Critically Ill Surgical Patient)</b> is a two-and-a-half day course designed to advance the practical, theoretical and personal skills necessary for the care of critically ill surgical patients. It is sponsored by the Royal College of Surgeons of England and is aimed at surgeons and those dealing with surgical patients who are in specialist training (<a href="http://www.rcseng.ac.uk/education/courses">www.rcseng.ac.uk/education/courses</a>).</p>	Enhanced	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman, the Royal College of Anaesthetists, 2011.
<p><b>MedicALS (Medical Advanced Life Support)</b> is a three-day advanced course teaching the management of medical emergencies is administered by the advanced life support group (ALS-G) (<a href="http://www.alsg.org">www.alsg.org</a>).</p>	Enhanced	The Maternal Critical Care Working Group. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman, the Royal College of Anaesthetists, 2011.
<p><b>PROMPT (PRactical Obstetric Multi-Professional Training)</b> is an evidence based multi-professional training package for obstetric emergencies. It is associated with direct improvements in perinatal outcome and has been proven to improve knowledge, clinical skills and team working. The PROMPT Maternity Foundation (PMF) is a multi-professional group of obstetricians, midwives and anaesthetists based in the UK. PMF strives to make childbirth safer through training, education and research. Our aim has always been to make evidence based multi-professional obstetric emergencies training available to all <a href="http://www.promptmaternity.org">www.promptmaternity.org</a></p>	Standard	

# Appendix 1

MEaCC Training Framework	Level	Reference
<p><b>YMET</b> - The NHS Yorkshire and Humber Maternity Education Matters Forum and the Clinical Skills Executive have worked in partnership to review the current provision and develop a strategy to ensure sustainable obstetric emergency training provision for the region.</p> <p>In direct response and investment from NHS Yorkshire and Humber, this web page has been developed to act as a resource for maternity units in the region to provide quality assured obstetric emergency training.</p> <p>For further information, queries or comments, please contact Helen Ruck at <a href="mailto:h.ruck@leedsbeckett.ac.uk">h.ruck@leedsbeckett.ac.uk</a>.</p>	<p><b>Standard</b></p>	
<p><b>ALSO (Advanced Life Support in Obstetrics)</b> is an evidence-based multidisciplinary training program that prepares maternity health care providers to better manage obstetric emergencies. ALSO's evidence-based learning path bridges knowledge gaps and boosts skill sets using a team-based approach, hands-on training, and mnemonics to reduce errors and save lives.</p> <p>Improving outcomes and saving lives for more than two decades, ALSO offers three course types - Provider, Instructor, or Refresher - as well as course sponsorship opportunities.</p>	<p><b>Standard</b></p>	