European
Professional Development Module PDM
OBSTETRIC ANAESTHESIOLOGY

FROM THE STANDING COMMITTEE ON EDUCATION AND PROFESSIONAL DEVELOPMENT (EPD) OF THE SECTION AND BOARD OF ANAESTHESIOLOGY (EBA) OF THE EUROPEAN UNION OF MEDICAL SPECIALISTS (UEMS)

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Note on terminology
It has been the intention of the authors to use words in this document that are both inclusive and avoid over-medicalising childbirth, whilst retaining clarity and avoiding clumsy language. We have used or considered using the words or phrases ‘woman’, ‘mother’, ‘maternal’, ‘pregnant person/people’, ‘parturient’, ‘(service) user’, ‘patient’ and ‘client’. In each case we have chosen the one we consider most appropriate for the context, though we acknowledge that often none will perfectly encapsulate the person or population we are trying to describe. If we have caused any confusion or offence, we apologise in advance.

List of abbreviations

EBA-UEMS	Section and Board of Anaesthesiology, European Union of Medical Specialists
ECMO	Extracorporeal membrane oxygenation
EPA	Entrustable professional activity
ETR	European Training Requirements
LMIC	Low or middle income country
MDT	Multidisciplinary team
MOH	Major obstetric haemorrhage
MSF	Multisource feedback
PAS	Placenta accreta spectrum
PDM	Professional development module
PDP	Personal development plan
PDPH	Post-dural puncture headache
POCUS	Point-of-care ultrasound
PPH	Postpartum haemorrhage
QI	Quality improvement
WBA	Workplace-based assessment

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Section 1. General Information about the European PDM in Obstetric Anaesthesiology

The path to excellence: From ETR for Trainees to the PDM for Specialists

The European Training Requirements (ETR) in Anaesthesiology list learning objectives during specialty training which pave the way to harmonised quality of care and patient safety throughout Europe [1]. The next step to excellence in anaesthesiology requires professional development in domains such as perioperative medicine, intensive care medicine, critical emergency medicine or pain medicine. The European PDMs for anaesthesiologists summarise learning objectives to enrich and increase competencies raising clinical experts and professional leaders to a higher level of qualification. UEMS approved the first European PDM in October 2024 [2].

Scope of the PDM in Obstetric Anaesthesiology

Women and babies across Europe continue to suffer preventable harm from childbirth. There is extensive evidence of inequality and avoidable maternal morbidity, mortality, stillbirth and neonatal death across the continent, including amongst relatively well-resourced countries [3-5]. The World Health Organisation and other United Nations agencies warn that, despite progress in the last two decades, in some European countries reductions in maternal mortality have slowed or stopped in recent years. Around 1,000 women in Europe die each year due to complications related to pregnancy or childbirth, much of which is avoidable [6]. Mortality is the proverbial tip of the iceberg, and women in several orders of magnitude greater than this suffer significant morbidity.

Obstetric anaesthesiologists play a leading part in the multidisciplinary team caring for mothers before, during and after childbirth. They will be directly involved in the care of a considerable proportion of those giving birth, providing antenatal care, regional analgesia or anaesthesia, general anaesthesia, perioperative care, resuscitation, critical care, and/or postnatal support. In addition they are a critical part of the multidisciplinary obstetric team (with obstetricians, neonatologists, midwives and theatre staff) through their involvement in leadership, management, service development, audit and quality improvement, education and research.

Well-trained specialist obstetric anaesthesiologists have a key role in the multidisciplinary team in both reducing avoidable harm to mothers and babies and improving the safety and quality of care for all women during childbirth. For a substantial majority of women across Europe childbirth has a successful outcome. The anaesthesiologist contributes to making the birth not only safe, but also a positive experience for the new mother and her family.

This PDM is for those who aspire to a leadership role in management, education and/or research within obstetric anaesthesiology, in addition to enhancing their clinical expertise. The ETR covers the commonly encountered clinical aspects of obstetric anaesthesiology, but a typical five-year anaesthesiology training programme will give the anaesthesiologist only a limited opportunity to encounter a wider range of obstetric scenarios and to develop the wider skillset of an aspiring leader in the field.

The PDM supports the aims of the UEMS to promote and harmonise the highest level of training, continuing professional development, medical practice and health care within the European Union (EU) as well as promote free movement of specialist medical doctors within the EU [7]. Those who successfully complete this module have the capacity to make a significant contribution to maternal and neonatal outcomes.

This Professional Development Module (PDM) is intended to harmonise and support continuing professional development in the field of obstetric anaesthesiology across Europe. It does not imply or introduce any new mandatory qualification and must not be used to question or limit the competence of anaesthesiologists who have completed specialist training according to the European Training Requirements (ETR). The PDM is a voluntary framework designed to promote lifelong learning and excellence in clinical leadership, education, and quality improvement within the discipline.

Development of the PDM

In 2024 the European Board of Anaesthesiology (EBA-UEMS) appointed a working group within the Standing Committee on Education and Professional Development (EPD) to develop a PDM for specialists in the field of Obstetric Anaesthesiology. The manuscript was discussed among EBA Delegates and approved by the EBA Board in 2025.

The PDM training programme

The recommended minimum training duration is 12 months. The authority responsible for governing and ensuring the adequacy of medical training in European countries can decide to count previous experience gained through clinical practice and additional recognised training (e.g. accredited courses, fellowships, observerships) in the clinical field. In line with UEMS principles training is competency-based and not number- or count-based.

The training programme includes a wide range of activities. Principally it is based on interactive participation in obstetric anaesthesia clinical work and reflection using a scientific, evidence-based approach.

- The clinical work will consist of providing anaesthetic care on the delivery unit and in theatre as well as in anaesthetic antenatal and postnatal clinics.
- To gain a broad understanding the anaesthesiologist should also spend time in obstetric and other specialist clinics (e.g. maternal medicine, cardiology).
- In addition the programme will include participation in ward rounds, multidisciplinary meetings, medical simulation, academic meetings, clinical incident reporting and risk management.
- The anaesthesiologist will be expected to take part in the education of other team members including anaesthesiologists in training and the wider multidisciplinary team.
- They should be encouraged to widen their knowledge through e-learning.
- The learner will be expected to take part in audit, quality improvement, service development or research projects and to present their findings to a relevant audience; with such projects working in a group or team is to be encouraged.
- If feasible there should be the opportunity to undertake short-term observerships (e.g. for 1-4 weeks) or longer clinical rotations in other units.

Training activities are not uniform throughout Europe and depend on national structures and processes in each location. The desired learning objectives are detailed in Section 2.

Candidate eligibility

The PDM in Obstetric Anaesthesiology has been developed for those who have successfully completed a specialist training programme consistent with the EBA-UEMS ETR in Anaesthesiology and wish to attain a higher level of competency in this multidisciplinary field.

Trainers

The host department will appoint a personal educational supervisor for the learner. This trainer should be a recognised expert in the field of obstetric anaesthesiology with sufficient practical and teaching experience. They must fulfil the requirements of a trainer as stated in the ETR in Anaesthesiology (part 3): Training staff must have:

- Competence level **E** in the assigned area of training
- Sufficient time allocated for training
- Knowledge about the PDM in Obstetric Anaesthesiology
- A positive attitude towards clinical training, expertise in didactic teaching, and a clear commitment to theoretical teaching and practical instruction of trainees within the full range of clinical practice.

Combinations of expertise in clinical practice, teaching and scientific work are beneficial. Educational trainers do not themselves have to be researchers, but collaboration between educational trainers not involved in research and researchers is recommended.

Training institutions

Training is best provided in centres with a track record of high quality training. Achievement and maintenance of educational standards should be assessed in a meaningful and robust way.

Obstetric units vary in size, resources, and the complexity of clinical cases taken on. There are advantages in experiencing both management of decision-making, referral and transfer out (usually from a smaller hospital) of mothers who require complex care, and management of such cases in a tertiary hospital.

Acknowledging this caveat, recommendations regarding training institutions are as follows:

- The programme can be delivered in one or more hospitals (with rotation)
- A significant proportion of the training should be in a tertiary or university-affiliated hospital
- Formal rotation or shorter periods of observership at other units (e.g. to visit specialist clinics) is to be encouraged
- Each training institution should cater for a minimum of 2,000 deliveries per annum
- Each training institution should conform to the European minimum standards for obstetric analgesia and anaesthesia [8]
- The programme must offer exposure to all relevant areas relating to obstetric anaesthesiology
- Faculty, teachers, trainers, consultants and tutors must be available in sufficient numbers to support efficient and effective training; workforce planning is under the jurisdiction of each member state
- Educational activities including meetings, seminars, critical incident reporting and clinical audit must be available in sufficient quantity
- Regular participation simulation training must be made available to support improvement in non-technical, technical and teaching skills
- There should be the opportunity for the learner to initiate or participate in project work; the nature of this may take the form of audit, quality improvement, management or research and will depend on local structures in place
- To support accreditation of training centres or programmes, EBA-UEMS encourages internal and external reviews

Assessment

The key aim of assessment in the PDM is to encourage learning through:

- Experience
- Reflection
- Formative assessment
- Feedback (formal and informal)
- Regular appraisal

The emphasis should be on formative assessment and reflection rather than simple collection of portfolio evidence. The competencies (knowledge, skills and attitudes) listed in Section 2 are a guide for the self-directed learner, not a rigid checklist. Similarly the Entrustable Professional Activities (EPAs) in Section 3 can be used as a guide to learning and to the expected levels of entrustment required of the learner on completion of the PDM.

All training activities should provide an opportunity to reflect on what has been learned and the learner should be encouraged, and feel confident, to demonstrate a journey of progression. The learner should seek and encourage informal feedback from patients, peers, trainers and non-medical colleagues. Formal feedback on the learner should be sought by the trainer from both other supervisors and trainers (trainer feedback) and the wider workforce including theatre staff, midwives and obstetric colleagues (multisource feedback – MSF).

Documentation recommended by the EBA-UEMS to be collated in the training portfolio (or e-portfolio) should include:

- Logbook (documenting all clinical procedures and cases)
- Record of workplace-based assessments (WBA)
- Self-reflections on learning experiences (e.g. individual cases, critical incidents) and clinical progress within the PDM
- Record of courses attended and other educational activities undertaken (including self-reflection)
- Personal development plans (PDPs) agreed with trainer
- Summaries of regular appraisal / meetings with trainer

Members of the educational faculty will assess progress of the learner at regular intervals throughout the module. Summative assessment towards the end of the module will involve:

- A review of the trainee portfolio
- A review of formal trainer feedback and MSF
- A review of progress towards suggested EPA milestones
- An assessment of the progress made and the breadth of the curriculum covered
- A judgement on whether the learning outcomes have been achieved

Further information on Teaching and Assessment can be found in the ETR in Anaesthesiology [1].

Completion of the PDM

The EBA-UEMS recommends that national regulatory authorities, chambers of physicians, and/or scientific societies document completed PDM specialist training as a certificate in advanced training within anaesthesiology.

In future the EBA-UEMS will propose European certification from UEMS for advanced training in a PDM to facilitate specialists' mobility throughout Europe.

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Section 2. PDM in Obstetric Anaesthesiology – Learning Objectives, Domains and Competencies

Learning objectives

On completion of the PDM, the learner should be:

- Able to provide safe analgesic and anaesthetic care for a wide variety of complex obstetric cases independently
- Capable of leading the delivery and organisation of education in obstetric anaesthesiology, including of the wider multidisciplinary team
- Capable of leading the obstetric anaesthesiology service, to the benefit of patients/service users and the organisation

Domains of learning

1. Obstetric anaesthesia in specific clinical circumstances

- 1.1 Cardiovascular disease in pregnancy
- 1.2 Neurological disease and spinal abnormalities
- 1.3 Patient blood management
  - 1.3.1 Bleeding disorders and anticoagulant drugs
  - 1.3.2 Major obstetric haemorrhage (MOH)
  - 1.3.3 Placenta accreta spectrum (PAS)
- 1.4 Pre-eclampsia & other hypertensive disorders
- 1.5 Severe obesity
- 1.6 Maternal collapse
- 1.7 Critically ill parturient
- 1.8 Point-of-care ultrasound (POCUS) in obstetrics
- 1.9 Neonatal resuscitation
- 1.10 Pain during surgery under regional anaesthesia
- 1.11 Postdural puncture headache (PDPH)
- 1.12 Neurological complications
- 1.13 Obstetric general anaesthesia (including difficult airway management)
- 1.14 Accidental awareness during general anaesthesia
- 1.15 Anaesthesia for non-obstetric surgery in pregnancy
- 1.16 Barriers to communication including language, culture, sensory impairment, neurodiversity and learning difficulties
- 1.17 Childbirth-related trauma
- 1.18 Parents who have experienced pregnancy and baby loss
- 1.19 Those who refuse medically recommended treatment
- 1.20 Obstetric anaesthesia in resource-poor settings

2. General core competencies in obstetric anaesthesiology

- 2.1 Teamworking, human factors and leadership
- 2.2 Teaching & education
- 2.3 Medical simulation
- 2.4 Organisation, quality and risk management
- 2.5 Innovation & research

Required levels of competence for the PDM

For each domain, learning objectives are described as knowledge, skills and attitudes that are deemed necessary to achieve the required level of competencies. For training in a PDM the EBA-UEMS uses different definitions for level of competencies compared to the definition used in the ETR:

A1	Basic concepts
A2	Knows generally
A3	Knows specifically and broadly

B1	Assists; direct observation
B2	Performs safely with reasonable fluency under direct supervision
B3	Performs safely from start to finish with assistance; knows all the steps and the reasons behind the methodology
B4	Performs safely and straightforwardly under indirect supervision; can adapt to well-known variations in the procedure encountered, recognises and is able to deal with most of the common problems, without direct input from the trainer; knows and demonstrates when help is needed, when to call for assistance/advice from the supervisor (knows personal limitations)

C	Performs safely and independently under distant advice; competent to do without assistance, including complications but may need help/advice

D	Performs safely and independently as an outstanding clinician and technician; can be trusted to carry out the procedure, independently, without need for help/advice; can deal straightforward and with difficult cases to a satisfactory level, without the requirement for external input

E	Instructs, supervises and teaches

Knowledge
The learner should be able to demonstrate specific and wide knowledge at the level of competence **A3** ('knows specifically and broadly') in all domains unless specified otherwise.

Clinical skills
The learner should achieve levels of competence **D** and **E** in the clinical and technical skills unless specified otherwise.

Attitudes and behaviours
In addition to the specific attitudes listed under each domain, the learner should demonstrate the following general attitudes and behaviours in all clinical settings in obstetric anaesthesiology:

- Aim to be a professional leader, academic scholar, and inspired humanitarian
- Treat service users, their birth partners and families with empathy, respect, courtesy and without discrimination
- Treat other health care professionals with empathy, respect, courtesy and without discrimination
- Fulfil duties and accepting responsibilities with integrity, honesty, confidentiality, probity and compassion

- Develop excellent communication skills, including rapport, listening skills, and inspiring confidence
- Always be willing to help even if personally inconvenient
- Be self-motivated, hard-working, keen to learn, full of energy, going beyond the call of duty
- Cope effectively with patients in acute distress, by prioritising calmness, empathy, active listening, and clear communication, while also respecting personal space and offering support and resources
- Manage conflicting demands and time-critical emergencies; seek help when needed; be proactive and think ahead
- Promote safety of patients and staff
- When choosing an anaesthetic technique, always consider the safest, most effective option most likely to achieve the desired outcome
- When advising on labour analgesia, always consider both neuraxial and non-neuraxial options and encourage mobile techniques
- Consider that patients have the right to be heard, believed, and informed regarding their obstetric and anaesthetic care; always include discussion of risks and alternatives
- Adopt a collaborative approach with other health care professionals to build on working relationships and ensure smooth patient care and safety
- Promote multidisciplinary team training in the management of obstetric and anaesthetic emergencies
- Have a positive, constructive attitude to critical incident reporting
- Maintain careful, systematic, traceable documentation
- Engage in the process of monitoring, recording and improving the quality of obstetric analgesia and anaesthesia care

Obstetric anaesthesiology content in the ETR

A candidate for the PDM in obstetric anaesthesiology needs as a prerequisite to have acquired the knowledge, skills, attitudes and behaviours required of a specialist anaesthesiologist. ETR competencies are not reproduced here in full – they comprehensively described in the 2nd update 2022 [1] (or more recent update). General competencies already gained during specialist training need to be refreshed and clinical skills increased throughout to PDM competence levels **D** and **E**.

The ETR domain descriptors (2nd update 2022) relevant to *obstetric* anaesthesiology are:

ETR domain 1: General core competencies

1.1 Perioperative medicine, patient assessment and risk reduction
1.2 General anaesthesia and sedation
1.3 Regional anaesthesia
1.4 Airway management
1.5 Point of care ultrasound
1.6 Postoperative care and pain management
1.7 Intensive care medicine
1.8 Critical emergency medicine
1.9 Anaesthesia non-technical skills
1.10 Professionalism and ethics
1.11 Patient safety and health economics
1.12 Research, education and self-directed learning

ETR domain 2.1: Specific core competencies: Obstetric anaesthesiology

PDM Domains and Competencies – knowledge, skills and specific attitudes

The following is a list of domains of expertise and competencies to be obtained or further developed during PDM training. (As previously alluded, this should be used as a guide for the self-directed learner rather than an assessment checklist.)

1. Obstetric anaesthesia in specific clinical circumstances

1.1. Cardiovascular disease in pregnancy

Knowledge

- Cardiovascular conditions in pregnancy (including congenital, ischaemic, and valvular heart disease; pulmonary embolism; dysrhythmias; heart failure, including peripartum cardiomyopathy and other cardiomyopathies; pulmonary arterial hypertension)
- Effects of the progress of pregnancy on cardiovascular conditions
- Echocardiography – indications in pregnancy; interpretation in the context of deciding optimum strategies for mode of delivery and anaesthesia
- Management of anticoagulants in pregnancy and at delivery
- Management of dysrhythmias in pregnancy
- Management of cardiac failure in pregnancy
- Prognostic indicators, in particular conditions which can be managed safely in a non-specialist centre, and those that require monitoring, intervention or delivery in a specialist centre
- The effects of labour, caesarean delivery and neuraxial analgesia/anaesthesia on cardiovascular conditions, and the optimum timing and mode of delivery
- Roles of specialist obstetricians and cardiologists in managing pregnant patients with cardiovascular conditions, and the organisation of services

Clinical skills

- Ability to manage acute, life-threatening complications of cardiac disease in pregnancy
- Ability to synthesise the patient's clinical condition and seek appropriate specialist help for pregnant patients with acute presentation of cardiovascular disease
- Ability to manage, as part of a multidisciplinary team in an appropriate clinical setting, analgesia and anaesthesia for a parturient with significant cardiovascular disease

Specific attitudes

- Awareness of the potential for significant cardiovascular disease in pregnancy to present with subtle or non-specific clinical features
- Maintaining an appropriate index of suspicion in unwell pregnant patients with symptoms and signs that could be attributable to cardiovascular disease

1.2. Neurological disease and spinal abnormalities

Knowledge

- Intracranial pathology in pregnancy (e.g. pre-eclampsia, head trauma, ischaemic or haemorrhagic stroke, intracranial venous thrombosis, tumours, arteriovenous malformations, Chiari malformations, etc)
- Other neurological and spinal conditions in pregnancy (e.g. multiple sclerosis, spina bifida, scoliosis and other spinal deformities, previous spinal surgery)
- Effects of labour, caesarean delivery, neuraxial techniques, general anaesthesia and non-neuraxial analgesic techniques on neurological outcomes in these conditions
- Peripartum neurological complications, including complications of neuraxial techniques, clinical diagnosis (in headache, back pain and other neurological symptoms), role of imaging, and acute management
- 'Red flag' neurological presentations requiring immediate investigation and management

- When and how to seek multidisciplinary opinion in pregnant patients with complex neurological or spinal conditions
- Postpartum headache – diagnosis and treatment (see also 'Postdural puncture headache')

Clinical skills

- Ability to make rational anaesthetic management plans in pregnant patients with a wide variety of neurological and spinal conditions
- Ability to counsel such patients regarding the risks and benefits of general and regional anaesthesia, as well as non-neuraxial techniques for peripartum pain relief
- Ability to make an informed list of differential diagnoses in cases of neurological presentation in the early postpartum period (e.g. headache, back pain, motor/sensory deficit)
- Ability to instigate and coordinate timely management of potential neurological/neurosurgical emergencies

Specific attitudes

- Understand and empathise with the wishes of the pregnant patient with a chronic neurological or spinal condition
- Act with appropriate urgency in cases potentially requiring immediate neurological or neurosurgical investigation and/or intervention
- Promote systems for early identification of postpartum 'red flag' neurological symptoms and signs

1.3. Patient blood management (PBM)

Knowledge

- PBM rationale and strategies in the obstetric population – best practices for managing anaemia, bleeding and coagulation, as well as alternatives to transfusion
- Detection and management of iron deficiency and other causes of antenatal anaemia

Clinical skills

- Ability to deliver and coordinate multidisciplinary PBM

Specific attitudes

- Patient-centred approach when a pregnant woman refuses blood transfusion

1.3.1 Bleeding disorders and anticoagulant drugs

Knowledge

- Causes of thrombocytopenia in pregnancy
- Implications of von Willebrand disease and haemophilia in the management of a pregnant patient
- Risks and benefits of central neuraxial block in a patient with a disorder of haemostasis
- Classes/types of and indications for anticoagulant medication during pregnancy
- National and international guidelines on anticoagulants and neuraxial block

Clinical skills

- Ability to manage and counsel a pregnant patient either with a disorder of haemostasis or who is taking anticoagulant medication; and to make informed and rational decisions regarding neuraxial block

Specific attitudes

- Patient-centred approach when weighing the benefits and risks of neuraxial block

1.3.2 Major obstetric haemorrhage (MOH)

Knowledge

- Epidemiology, pathophysiology, aetiology of MOH
- Systematic preparation of obstetric units for MOH (e.g. preparing units and staff for haemorrhage, risk stratification, matching of women to units that can meet their clinical needs, early identification and transfer, early mobilisation of resources)

- Clinical assessment of blood loss
- Interventions to control haemorrhage (i.e. surgical, radiological)
- Pharmacology of uterotonics
- Intraoperative cell salvage in obstetrics – evidence, rational use, process, technical aspects, safety
- Understanding of point-of-care viscoelastic testing (e.g. thromboelastography)
- Role of blood products in MOH

Clinical skills

- Skilfully interpret viscoelastic and other blood tests in the context of MOH
- Display practical and rational use of blood products
- Effectively lead and manage team resources in MOH
- Demonstrate empathic and compassionate communication with the patient and birth partner throughout MOH, including, if required, postnatal debrief

Specific attitudes

- Commitment to promote and embrace multidisciplinary team training, including in human factors

1.3.3 Placenta accreta spectrum (PAS)

Knowledge

- Pathophysiology, risk stratification and risk factors for PAS
- Rationale for timing of delivery in women with known or suspected PAS
- Mode of anaesthesia for caesarean delivery in suspected PAS, including evidence of pros and cons
- Surgical strategies to reduce haemorrhage in PAS
- Types of radiological intervention to reduce haemorrhage in PAS, including evidence of pros and cons and logistical challenges
- Indications for transfer to specialist unit in known or suspected PAS
- Role of anaesthesiologists in the multidisciplinary planning of operative delivery, including logistics
- Strategy to manage unanticipated postpartum haemorrhage (PPH)

Clinical skills

- Ability to plan the anaesthetic management of a patient with suspected PAS for caesarean delivery in conjunction with the multidisciplinary team (including the patient, their birth partner, obstetricians and theatre staff, as well as haematologists and/or radiologists where appropriate)
- Ability to contribute to discussions about potential antenatal transfer of mother with known or suspected PAS to a specialist centre
- Ability to manage unanticipated cases of PAS with prompt resuscitation and management of PPH and coagulopathy

Specific attitudes

- Willingness to use every case of PAS as an opportunity for self-reflection, multidisciplinary team learning, or for potential system change

1.4 Pre-eclampsia & other hypertensive disorders

Knowledge

- Hypertension in pregnancy (definition, aetiology)
- Pre-eclampsia (definition, risk factors, pathophysiology, diagnosis, surveillance, severe features)
- Interpretation of diagnostic tests in pre-eclampsia
- Obstetric management of pre-eclampsia, including tests of fetal wellbeing and timing of delivery

- Prevention and management of hypertensive emergencies, eclampsia, and HELLP syndrome (haemolysis, elevated liver enzymes, low platelets)
- Considerations for analgesia and anaesthesia in severe pre-eclampsia.

Clinical skills

- Contribute to multidisciplinary management of patient with severe pre-eclampsia

Specific attitudes

- An enquiring mindset with regard to pre-eclampsia and its varied presentations and potential complications

1.5 Severe obesity

Knowledge

- Strategies to manage labour analgesia and anaesthesia for caesarean delivery for the patient living with severe / class 3 / morbid / super-morbid obesity (including pre-operative assessment, logistics, staff, equipment, anaesthetic technique, post-operative care)
- National/international guidelines for management of anaesthesia in patients living with obesity

Clinical skills

- Ability to plan the management of analgesia/anaesthesia for delivery in a parturient living with severe obesity

Specific attitudes

- Communicate with the person living with obesity with empathy, compassion and honesty
- Attention to detail in preparing with the multidisciplinary team for all eventualities, whether anticipated or not

1.6 Maternal collapse

Knowledge

- National and international guidelines on cardiopulmonary resuscitation in the pregnant patient
- Role of advanced techniques including transthoracic echocardiography and extra corporeal membrane oxygenation (ECMO)
- Multidisciplinary team dynamics and human factors in resuscitation
- Post-resuscitation team debriefing strategies

Clinical skills

- Be confident in leading the resuscitation team following maternal collapse, including management of post-resuscitation anaesthetic and/or critical care
- Preparation for emergency perimortem caesarean delivery

Specific attitudes

- Proactive approach to ensuring team preparedness for maternal cardiac arrest and other obstetric emergency scenarios

1.7 Critically ill parturient

Knowledge

- Epidemiology of maternal critical care
- Lessons from national audits and enquiries into maternal critical care
- Local configuration of critical care services, including level 3 (e.g. ventilatory support, renal replacement therapy), level 4 (e.g. ECMO) and intra/inter-hospital transfer
- Presentations of critical illness in pregnant patients, including
    - massive obstetric haemorrhage
    - infection
    - pre-eclampsia and its severe manifestations
    - respiratory disorders
    - cardiovascular disorders
    - renal disorders
    - haematological disorders

- metabolic and electrolyte disorders

- Respiratory support in the pregnant population, including indications, challenges of tracheal intubation, management of artificial ventilation
- Circulatory support specific to maternal critical illness
- Sedation, analgesia and neuromuscular blocking agents in maternal critical care
- Obstetric management and imaging during critical care stay
- Psychological support for the critically ill mother, including prevention of birth trauma, minimisation of separation from baby, encouragement of early breastfeeding and skin-to-skin contact

Clinical skills

- Multidisciplinary input into decisions regarding timing and location of critical care (e.g. local configuration of critical care service provision, whether intrapartum or not, progression of organ failure)

Specific attitudes

- Early recognition of maternal deterioration and maternal critical illness
- Importance of multidisciplinary teamwork and communication in maternal critical care

1.8 Point-of-care ultrasound (POCUS) in obstetrics

Knowledge

- Applications of POCUS in obstetrics, e.g.: cardiac (maternal collapse, refractory low cardiac output and/or hypotension, cardiomyopathy, valve disease, pericardial effusion); respiratory (pneumonia, pulmonary oedema); abdominal (gastric cross-sectional area and aspiration risk); airway (assessment in pre-eclampsia)
- Interpretation of echocardiographic findings in the context of the obstetric patient

Clinical skills

- Cardiac POCUS, critical care echocardiography (CCE), transthoracic echocardiography (TTE) **C**
- Focussed assessment with sonography for trauma (FAST) **C**
- Airway ultrasound
- Gastric ultrasound
- Spinal ultrasound for neuraxial anaesthesia

Specific attitudes

- Awareness of utility of ultrasound in answering specific diagnostic questions

1.9 Neonatal resuscitation

Knowledge

- National/international neonatal resuscitation guidelines

Clinical skills

- Be able to distinguish normal physiological changes from pathological findings in a compromised newborn at the time of birth
- Be able to initiate resuscitation of a compromised newborn

Specific attitudes

- Willingness to contribute to initial neonatal resuscitation if required, whilst maintaining safe monitoring and care of the mother

1.10 Pain during surgery under regional anaesthesia

Knowledge

- Scientific basis of testing the adequacy of regional block using different modalities
- Risk factors associated with the failure of conversion of epidural analgesia in labour to anaesthesia for caesarean delivery; strategies to manage a failed ‘epidural top-up’
- Adverse maternal psychological consequences of inadequately managed pain during surgery

Clinical skills

- Holistic, pragmatic and evidence-based approach to testing the adequacy of regional block and managing the consequences before planned and time-critical surgery

Specific attitudes

- Proactive approach to managing suboptimal epidural analgesia during labour
- Prompt, patient-focused management of pain during surgery

1.11 Postdural puncture headache (PDPH)

Knowledge

- Causes of postpartum headache
- Differences between PDPH and other types of postpartum headache
- Management strategies for postpartum headache, including the role of computed tomography (CT) / magnetic resonance (MR) imaging
- Evidence supporting treatments for PDPH
- Management of PDPH refractory to conventional treatment

Clinical skills

- Make an informed differential diagnosis in postpartum headache and make rational decisions regarding management (e.g. conservative/expectant, imaging, epidural blood patch, other treatments, specialist referral)
- Counsel a mother with PDPH about the management options
- Perform an epidural blood patch
- Manage a patient with post-dural puncture headache including longer term follow-up

Specific attitudes

- Holistic, evidence-based approach to PDPH including both initial management and follow-up

1.12 Neurological complications

Knowledge

- Applied epidural anatomy and techniques to minimise risk of neurological injury during regional anaesthesia
- Aetiology and common presentations of postpartum neurological dysfunction

Clinical skills

- Ability to identify clinically those with postpartum neurological symptoms/signs who require urgent imaging/referral/intervention and those for whom reassurance and conservative management is appropriate
- Ability to differentiate neurological presentations potentially caused by anaesthetic intervention

Specific attitudes

- An inquisitive and learning mindset when approaching postpartum patients with neurological symptoms

1.13 Obstetric general anaesthesia (including difficult airway management)

Knowledge

- Assessment of the potentially difficult airway (e.g. obesity, pre-eclampsia)
- Decision-making algorithm for 'can't intubate, can't oxygenate' scenario in obstetrics

Clinical skills

- Deliver safe obstetric general anaesthesia using total intravenous or volatile-based techniques
- Use of the fibreoptic scope to facilitate diagnosis and/or awake intubation of the potentially difficult airway
- Manage a range of simulated failed intubation or 'can't intubate, can't oxygenate' scenarios with varying degrees of complexity

- Securing simulated emergency front of neck access to the airway in the anatomically normal and severely oedematous or obese neck

Specific attitudes

- Compassionate, shared decision-making approach to discussions around general vs regional anaesthesia for caesarean delivery

1.14 Accidental awareness during general anaesthesia

Knowledge

- Factors predisposing to accidental awareness in obstetrics
- National/international guidance on prevention of accidental awareness

Clinical skills

- Implement strategies to minimise the risk of accidental awareness, especially during emergency caesarean delivery and massive haemorrhage

Specific attitudes

- Attention to detail in general anaesthetic technique in spite of distractions (e.g. urgency, haemorrhage)

1.15 Anaesthesia for non-obstetric surgery in pregnancy

Knowledge

- Maternal physiological changes with implications for anaesthesia
- Fetal considerations in the first, second and third trimesters; fetal monitoring
- Type and conduct of anaesthesia; positioning; laparoscopic vs open surgery; drugs to avoid or use with caution
- Newly postpartum – breastfeeding considerations, changes in maternal physiology

Clinical skills

- Be able to counsel a patient on the implications for anaesthesia during and after pregnancy
- Be able to formulate a plan for anaesthesia for non-obstetric surgery during pregnancy

Specific attitudes

- Multidisciplinary approach and preparedness for the distinct challenges in each trimester

1.16 Barriers to communication including language, culture, sensory impairment, neurodiversity or learning difficulties

Knowledge

- Sources of written patient information in a translated format relating to obstetric anaesthesia and analgesia
- How to access translation and sign-language/intermediary services for obstetric patients
- Safety and ethical considerations in not using professional interpretation services, for example in a time-critical emergency, or in using friends or family members as interpreters

Clinical skills

- Shared decision-making with obstetric patients who require extra support
- Strategies to manage potential cultural barriers safely and compassionately
- Effective use of interpretation services (e.g. face-to-face or telephone language interpreter, sign-language/intermediary interpreter)
- Strategies to communicate effectively with those with neurodiversity or learning difficulties

Specific attitudes

- Proactive approach to overcoming barriers to communication
- Recognition of the paradox that the harder communication is, the more important it is for patient safety to do well

1.17 Childbirth-related trauma

Knowledge

- Basic principles of trauma-informed care as applied to obstetric anaesthesia

– Predisposing factors for birth-related trauma and recognition of the at-risk mother
– Practical strategies to respond to obstetric patients' needs
– The role of the obstetric anaesthesiologist in preventing (re)traumatisation

Clinical skills

– Implementing trauma-informed care strategies, especially in vulnerable obstetric patients

Specific attitudes

– Recognition of the importance of the anaesthesiologist's role in prevention of birth-related trauma

1.18 Parents who have experienced pregnancy and baby loss

Knowledge

– Understanding of the impact of pregnancy and baby loss for parents
– Role of the anaesthesiologist in the multidisciplinary team caring for women experiencing pregnancy and baby loss (including ectopic or molar pregnancies, or those undergoing surgical management of miscarriage in the operating theatre)

Clinical skills

– Compassionate communication with parents experiencing pregnancy and baby loss

Specific attitudes

– Promotion of a positive organisational culture regarding the impact of baby loss on both parents and staff

1.19 Those who refuse medically recommended treatment

Knowledge

– Legal and ethical frameworks regarding refusal of medically recommended treatment during pregnancy
– Recommendations for addressing the refusal of medical treatment during pregnancy
– Role of the anaesthesiologist in supporting the pregnant patient refusing treatment

Clinical skills

– Developing rapport and understanding regardless of a patient's background, attitudes or decisions regarding their medical care

Specific attitudes

– Supportive and empathetic attitude
– Recognition of one's own communication style, including its limitations, one's own cultural biases and preconceptions

1.20 Obstetric anaesthesia in resource-poor settings

Knowledge

– Global practice of obstetric anaesthesia – challenges of health system deficiencies in low- and middle-income countries (LMICs), including finance, transport, staff numbers, training, drugs, equipment, language/cultural barriers
– Impact of resource limitation on the practice of safe obstetric anaesthesia in LMICs – maternal outcomes, anaesthesia-related morbidity and mortality
– Preparedness for managing obstetric anaesthesia & analgesia services in disaster scenarios (e.g. earthquake, volcano, civil unrest, war, interruption of vital services, etc)

2 General core competencies in obstetric anaesthesiology

2.1 Teamworking, human factors and leadership

Knowledge

– Human factors and team dynamics in managing time-critical emergencies
– Managing clinical and/or organisational complexity

- Understanding of others’ roles - obstetrician, midwife, neonatologist, other clinicians, managers, educators, trainees and students
- Understanding various leadership styles and when they are best used in the delivery unit setting
- Communication strategies to ensure most effective use of time and resources
- Understanding what motivates different team members
- Strategies when managing a difficult conversation with patients or their families
- Strategies when managing a difficult conversation with colleagues

Skills

- Participate in and lead (when appropriate) the organisation of complex interventions, including liaison with midwives, theatre staff, obstetricians and other specialties
- Ability to demonstrate leadership in engaging other healthcare professionals; give weight to contributions of others; respect team decisions and engage constructively and moderately if registering dissent; understand that others may be experiencing strong emotions, which must be recognised
- Maintain high levels of individual and team situational awareness; ask for, or share, information and anticipate future problems to maximise safe practice
- Open when talking to patients about untoward events, apologising appropriately, providing clear explanations, acting with integrity and offering the necessary support
- Ability to engage all members of the team to enable time to be used most efficiently for the benefit of patients and staff
- Recognise own limitations and actively seek help when needed
- Adopt strategies to reduce risk and show a willingness to participate in improvement strategies; act to rectify any errors immediately
- Ability to lead effectively in a clinical crisis
- Ability to lead in managing elective caesarean delivery list

Specific attitudes

- Act as a role model in interactions with other team members
- Positive attitude towards teamworking and human factors; approachable and open to new ideas; flexibility in managing team members, encouraging autonomy and building trust
- Awareness of own leadership style

2.2 Teaching & education

Knowledge

- In depth knowledge of the ETR with relevance to obstetric anaesthesiology (or the national curriculum for anaesthetists in training)
- Workplace-based assessment for anaesthetists in training – theory, practical application, pitfalls; formative and summative assessment strategies (e.g. as specified in the ETR)
- Strategies for enhancing the effectiveness of one-to-one or small group teaching
- Understanding the obstacles to learning – practical, logistical, emotional
- How to raise concerns about a poorly performing doctor in training; strategies to manage a ‘difficult conversation’; principles of motivational interviewing
- Understanding patient education and empowerment

Skills

- Develop a personal learning network of individuals and organisations, including attending specialist educational meetings and reading specialist journals in obstetric anaesthesiology
- Teach and supervise anaesthetists in training (e.g. epidural analgesia, regional anaesthesia for caesarean) whilst maintaining both a high standard of care and the confidence of the mother and her birthing partner

- Deliver one-to-one or small group teaching on core obstetric anaesthesiology topics (e.g. obstetric haemorrhage, pre-eclampsia, pain during surgery under regional anaesthesia, obstetric general anaesthesia, failed intubation, maternal collapse) using simulation where appropriate
- Give effective, timely, constructive feedback
- Ability to engage and enthuse, facilitating a positive and open learning culture
- Develop and disseminate patient information material

Specific attitudes

- Good communication skills, mutual respect, patience, empathy, passion for learning

2.3 Medical simulation

Knowledge

- Methodology, design and delivery of inter-professional simulation focusing on core obstetric and obstetric anaesthetic practices, non-technical skills (human factors, teamwork, communication, decision-making) and critical incident management
- Low- and high-fidelity simulation – pros and cons

Clinical skills

- Ability to lead the organisation and facilitation of clinical, team and human factors training for individuals, small groups and multidisciplinary teams, including high- and low-fidelity simulation
- Use debriefing effectively to help learners reflect on their performance, identify learning opportunities and improve future practice
- Develop new simulation scenarios

Specific attitudes

- Willingness to engage in multidisciplinary simulation to improve teamwork and human factors skills

2.4 Organisation, quality and risk management

Knowledge

- Organisation of obstetric services – relationships within and between specialist teams (midwifery, obstetric, anaesthetic, neonatal and other medical specialties); antenatal, intrapartum and postnatal services; community-based, low-risk and high-risk peripartum services; hospital and wider maternity services management teams, and maternity lay representatives
- Measuring quality in obstetric anaesthesia – using quality metrics to improve individual and institutional practice; practicalities of collecting quality data; published consensus-driven quality metrics for obstetric anaesthesia (e.g. by the American Society of Anesthesiologists and the Royal College of Anaesthetists)
- Risk management in maternity – quality improvement (QI) processes, critical incidents reporting systems, main factors in analysing critical incidents (e.g. institutional, organisational, work environment, team, individual, task, patient), barriers to QI and learning from incidents
- Recommendations from published audits and reviews of national and local maternity services
- Principles of health care economics relating to maternity services, including cost-effectiveness analysis, resource allocation, and the financial implications of different management strategies
- Sustainability in healthcare, including strategies to minimise environmental impact (e.g. reducing impact of nitrous oxide, using reusable equipment, minimising the use of single-use items) while delivering high-quality care

Skills

- Ability to write, revise, promote and audit adherence to local clinical guidelines or policies in obstetric anaesthesiology

Specific attitudes

- Appreciation of wider context of anaesthesiology and maternity services within the healthcare system

2.5 Innovation & research

Knowledge

- Awareness of current and potential research areas in obstetric anaesthesiology and opportunities for personal or departmental involvement in research projects
- Basic principles of research design
- Specific barriers to research in obstetrics

Skills

- Critical evaluation of latest research/developments

Specific attitudes

- Enquiring mindset; openness to new ideas

Section 3. Entrustable Professional Activities (EPAs)

Definition and Implementation of EPAs in the Training of Medical Specialists

The **Entrustable Professional Activity (EPA)** is a unit of professional practice that can be fully entrusted to a trainee once they have demonstrated the necessary competence to perform the activity unsupervised. EPAs are tasks or responsibilities that a medical specialist must be able to perform proficiently and are used to assess and guide further training of medical specialists.

Key Characteristics of EPAs:

1. **Integration of Competencies:** EPAs require the integration of multiple competencies (knowledge, skills, attitudes) across different domains
2. **Observable and Measurable:** EPAs are specific activities that can be directly observed and measured
3. **Context-Specific:** EPAs are tailored to the specific context and requirements of the medical specialty
4. **Entrustability:** The ultimate goal is to determine whether the trainee can be trusted to perform the activity independently

Implementation in the Training of Medical Specialists:

1. Identification of EPAs:

- **Collaboration:** Develop EPAs through collaboration among educational leaders, clinicians, and stakeholders in the specialty
- **Alignment:** Ensure EPAs align with the core competencies required by accreditation bodies and professional organizations
- **Relevance:** Select EPAs that are essential to the practice of the specialty and reflect real-world clinical tasks

2. Structuring Training Programs around EPAs:

- **Curriculum Design:** Integrate EPAs into the curriculum, ensuring that training experiences provide opportunities to perform these activities
- **Learning Objectives:** Define clear learning objectives and milestones for each EPA
- **Educational Activities:** Design educational activities, such as simulations, clinical rotations, and workshops, to support the development of skills required for EPAs

3. Assessment of EPAs:

- **Direct Observation:** Utilise direct observation of clinical practice by supervisors to assess performance
- **Feedback:** Provide formative feedback based on performance, highlighting areas of strength and areas needing improvement
- **Multi-Source Feedback:** Incorporate feedback from peers, patients, and other healthcare professionals
- **Simulation-Based Assessment:** Use simulation-based assessments for complex or high-risk EPAs.
- **Milestone Tracking:** Track progress through defined milestones, documenting the trainee's development and readiness for unsupervised practice

4. Entrustment Decisions:

- **Mentors and Competency Committees:** A mentor following the trainee advancing through an educational module covering a specific domain uses the aforementioned assessment tools to

make entrustment decisions upon completion of the module Alternatively, competency committees can be established within the department/institution to review trainee performance data and make entrustment decisions

- **Entrustment Scales:** wherever possible use standardised entrustment scales to evaluate readiness for independent practice
- **Documentation:** Document entrustment decisions, ensuring transparency and accountability

5. Continuous Improvement:

- **Quality Improvement:** Regularly review and update EPAs based on feedback from trainees, supervisors, and evolving clinical practice standards
- **Research and Evaluation:** Conduct research to evaluate the effectiveness of EPA-based training and assessment in improving clinical competence and patient care outcomes

Suggestions for Implementation:

In the advanced training program in Obstetric Anaesthesiology the following steps might be taken:

- **Define EPAs:** Identify key activities such as planning anaesthetic care in the antenatal period; managing anaesthetic care for planned caesarean delivery in patients with significant comorbidities or specific additional/complex needs; management of complications of anaesthesia; taking a clinical leadership role in management of peripartum haemorrhage or other emergency clinical situations; teaching and training of trainee anaesthesiologists in obstetric regional analgesia/anaesthesia; organising and delivering multidisciplinary team simulation training; participating in delivery unit management activities
- **Integrate into Curriculum:** Ensure that clinical rotations, clinics, access to management and other educational activities provide opportunities to practice and develop these skills
- **Assessment:** Utilise direct observation, case discussions, simulation, and multi-source feedback to assess trainee performance in each EPA
- **Entrustment:** Mentors and/or competency committees review assessment data and make decisions about the trainee's readiness to perform activities independently
- **Ongoing Review:** Continuously review and refine EPAs and assessment methods to ensure they remain relevant and effective

By implementing EPAs in the training of medical specialists, programs can provide a structured and transparent pathway for trainees to achieve the competencies necessary for independent practice, ensuring high standards of patient care and professional development.

Proposed Entrustable Professional Activities (EPAs) for Specialists in Obstetric Anaesthesiology

These EPAs provide a comprehensive framework for anaesthesiologists specialising in Obstetric Anaesthesiology, covering key aspects of patient care, teaching and training, leadership, interdisciplinary teamwork and collaboration, and delivery unit management.

After completing a training program based on the PDM in Obstetric Anaesthesiology, specialists are expected to have reached milestones **4** and **5** of each EPA, depending on the setting of their practice.

EPA 1: Antenatal anaesthetic assessment and planning of peripartum anaesthetic care

- **Description**: Make a comprehensive plan in the antenatal period for analgesia and/or anaesthesia for delivery for a woman with significant comorbidity or specific complex needs, in conjunction with the woman and (where relevant) their birth partner, obstetricians and midwives

Domains of Competence:

- **Medical Knowledge:** Understand the interactions between pregnancy, pregnancy-related conditions, intercurrent disease and the implications for peripartum anaesthesia and regional analgesia
- **Patient Care:** Conduct a focussed assessment of the woman's condition; explore in detail their understanding, preferences, wishes and/or plans regarding potential analgesia and anaesthesia in the peripartum period; together make a provisional plan
- **Interpersonal and Communication Skills:** Show empathy and build rapport with the woman, their birth partner and/or family; communicate effectively to develop individualised care plans in conjunction with multidisciplinary teams
- **Professionalism:** Demonstrate empathy, respect, and ethical considerations in patient interactions
- **System-Based Practice:** Coordinate care with obstetricians, midwives and other healthcare professionals to ensure a clear plan for peripartum analgesia and/or anaesthesia
- **Practice-Based Learning and Improvement:** Engage in continuous learning to stay up-to-date with best practice in obstetric anaesthesiology

Specific Tasks:

- Consult with women referred to the antenatal anaesthetic clinic and discuss plans for peripartum anaesthetic care in consultation with the person, their birth partners and other healthcare professionals
- Pay specific attention to the woman's understanding and their wishes in formulating any plans for analgesia and anaesthesia
- Subject to the woman's wishes, use the opportunity to educate them about options for analgesia and anaesthesia for labour and delivery
- Consider and aim to mitigate or overcome any barriers to effective communication, for example linguistic or cultural differences, sensory or cognitive impairment, or learning disability
- Attend and observe practice in other specialty clinics, in particular the antenatal obstetric clinic, but also, if possible, peripartum medicine and cardiology clinics

Milestones:

- **Level 1:** Identifies the pregnant woman with comorbidities or complex needs that will influence the conduct of peripartum analgesia or anaesthesia
- **Level 2:** Performs comprehensive antenatal anaesthetic assessments with supervision
- **Level 3:** Independently conducts assessments and develops plans in consultation with other specialties/disciplines
- **Level 4:** Leads multidisciplinary antenatal anaesthetic planning
- **Level 5:** Serves as a consultant for complex antenatal anaesthetic assessments

Assessment Methods:

- Direct observation of clinical encounters
- Case-based discussions
- Multisource feedback from patients, families, and healthcare team members
- Review of documentation in medical records

Expected Outcomes:

- Demonstrate proficiency in assessment and decision-making, including in complex cases
- Demonstrate excellence in communication with the pregnant woman, especially where there are communication barriers
- Effectively communicate and collaborate with multidisciplinary teams
- Enhance birth outcomes including satisfaction with anaesthetic care through individualised care plans
- Exhibit professionalism and ethical behaviour in all patient interactions

EPA 2: Anaesthetic management for operative delivery in complex cases

- **Description:** Lead the anaesthetic management for operative delivery in complex cases; complexity may be due to significant comorbidity involving multispecialty input, or for additional logistical reasons, e.g. operative delivery outside the obstetric theatre suite

Domains of Competence:

- **Medical Knowledge:** Understand the impact of significant conditions affecting anaesthetic and surgical management of caesarean section; this includes but is not limited to: severe placenta accreta spectrum, massive postpartum haemorrhage, severe pre-eclampsia, maternal cardiac disease, respiratory disease, bleeding disorders, severe/extreme/super-morbid obesity, intra-operative pain (and its psychological sequelae), resuscitative caesarean following maternal collapse
- **Patient Care:** Provide anaesthetic care tailored to the patient's wishes, their clinical condition, the urgency of surgery, and the logistics of the environment
- **Interpersonal and Communication Skills:** Plan and coordinate effectively with the patient, their birth partner, the surgical and wider multidisciplinary/multispecialty team to ensure patient safety; involve the patient in important decisions; maintain patient confidence with excellent rapport and empathy
- **Professionalism:** Maintain a patient-centred approach in making decisions with other clinicians; act with honesty and integrity, especially when you don't know the answer, when there is clinical uncertainty, or when there has been any form of error, misunderstanding or miscommunication; be aware of your limitations and ask for help when needed or if in doubt
- **System-Based Practice:** Use available resources (people, technology) to optimise intraoperative care
- **Practice-Based Learning and Improvement:** Reflect on experiences to improve future practice, using self-reflection, routine team debriefing, or structured team debriefing or departmental case presentation as appropriate

Specific Tasks:

- Develop expertise in communicating with and managing the theatre team for caesarean deliveries, especially when there is a high degree of urgency and a dynamic clinical situation
- Develop expertise in spinal, epidural and combined spinal-epidural anaesthesia, and inhalational and intravenous general anaesthesia in the obstetric setting
- Develop expertise in prevention and management of relatively common intraoperative complications such as haemorrhage and intraoperative pain
- Practice, through discussion, low fidelity or high fidelity multidisciplinary simulation, management of planned or emergency operative delivery outside the obstetric theatre, e.g. in cardiac theatre, emergency department
- Maximise opportunities to be involved in or lead anaesthetic management of complex cases

- Be inquisitive about antenatal patients with complex medical conditions and their obstetric management; initiate case-based discussions around their potential anaesthetic and surgical management

Milestones:

- **Level 1:** Understands anaesthetic considerations for operative delivery in patients with significant comorbidities or in logistically complex cases
- **Level 2:** Assists in the management of complex anaesthetic cases
- **Level 3:** Leads the management of complex anaesthetic cases with supervision or assistance available nearby
- **Level 4:** Leads the management of complex anaesthetic cases without supervision
- **Level 5:** Provides guidance and supervision to colleagues in complex anaesthetic cases

Assessment Methods:

- Direct observation during surgical procedures
- Case-based discussion
- Simulation-based assessments
- Feedback from surgical and other team members
- Review of anaesthesia records
- Self-reflective practice logs

Expected Outcomes:

- Deliver safe and effective anaesthetic care in complex scenarios
- Anticipate and manage intraoperative challenges during operative delivery
- Collaborate seamlessly with the obstetric surgical team to enhance patient safety
- Be aware of own limitations and demonstrate a willingness to seek advice and/or help
- Communicate effectively with the patient and their birth partner to maximise patient satisfaction with the birth experience
- Demonstrate continuous improvement in clinical practice through reflection and learning

EPA 3: Prevention and management of complications of obstetric analgesia and anaesthesia

Description: Lead the management of complications of obstetric analgesia and anaesthesia

Domains of Competence:

- **Medical Knowledge**: Understand the causes, diagnosis and treatment of complications of special relevance to obstetric analgesia and anaesthesia, notably accidental dural puncture and post dural puncture headache, intraoperative pain during surgery under regional anaesthesia, and neurological complications following regional block; understand the role of appropriate imaging techniques including their limitations; understand when urgent diagnosis and/or treatment is indicated, and when conservative or expectant management is most appropriate; understand the consequences (including psychological sequelae) of a lack of timely diagnosis and management
- **Patient Care**: Practise anaesthesia in such a way to minimise the risk of complications occurring and to diagnose and manage them effectively if they do
- **Interpersonal and Communication Skills**: Prioritise establishing a rapport with patients and encourage them to report adverse symptoms at an early stage; show empathy with and take seriously patients who are telling you that something is wrong; respond promptly to requests to review patients in the postnatal period; liaise effectively with other specialties when necessary (e.g. neurology, radiology)
- **Professionalism**: Show leadership in prevention and management of complications
- **System-Based Practice**: Be aware of referral pathways and other communication networks to coordinate comprehensive management of anaesthesia-related complications
- **Practice-Based Learning and Improvement**: Monitor one's own and the institution's complications over time; maximise local learning opportunities from every significant complication; contribute to anonymised national reporting systems for rare or serious complications (where they exist and if ethically appropriate)

Specific Tasks:

- Identify and mitigate risk factors for obstetric anaesthetic complications
- Identify patients who have experienced complications and follow them up on the postnatal ward or clinic
- Liaise with colleagues in other specialties (e.g. radiology, neurology, neurosurgery) and discuss with them which clinical presentations they would typically expect to be referred, especially those which would need urgent investigation or treatment
- Maximise learning opportunities from complications of anaesthesia (or near misses); reflect on one's own complications and seek feedback from patients and colleagues; present complications to local colleagues and share experiences

Milestones:

- **Level 1**: Recognises common complications of obstetric analgesia and anaesthesia
- **Level 2**: Manages complications with assistance or supervision
- **Level 3**: Independently manages the complication in its initial stages, recognising when to seek assistance
- **Level 4**: Addresses complex complications with tailored interventions
- **Level 5**: Provides leadership in prevention, education and management of complications of obstetric analgesia and anaesthesia

Assessment Methods:

- Direct observation of patient care
- Case-based discussions and debriefings
- Patient and family feedback
- Quality metrics such as complication rates

Expected Outcomes:

- Reduce the incidence of complications of obstetric analgesia and anaesthesia
- Improve the management of and outcome from complications
- Enhance communication and satisfaction among patients, families, and the multidisciplinary team

EPA 4: Education of trainee obstetric anaesthesiologists

- **Description**: Plan and deliver an educational module for trainee anaesthesiologists from the novice stage of obstetric anaesthesiology to being resident on-call on the obstetric unit

Domains of Competence:

- **Medical Knowledge:** Have a good working knowledge of the obstetric anaesthesiology curriculum (for example in the European Training Requirements); theory and practice of how to teach skills, how to use simulation effectively, how to teach one-to-one or in small groups, and formative and summative workplace assessment
- **Patient Care:** Understand how to ensure high quality patient care and maintain patient confidence whilst teaching and supervising; emphasise the importance of holistic care of the pregnant person, including both the physical and psychological aspects of anaesthesia care
- **Interpersonal and Communication Skills:** Be able to provide effective education and training in the potential context of severe pain, distress and/or clinical urgency; give effective trainee feedback
- **Professionalism:** Know how to maintain the primacy of patient safety whilst allowing a trainee to develop increasing independence; act as a role model in regard to professional behaviour and multidisciplinary team working
- **System-Based Practice:** Understand how to integrate the education of trainee obstetric anaesthesiologists into normal working practice on the obstetric unit
- **Practice-Based Learning and Improvement:** Understand how to evaluate the quality of the educational module; seek ways to continually improve the education of trainees

Specific Tasks:

- Learn and practise how to teach skills, use simulation effectively, teach one-to-one or in small groups, give constructive feedback, and provide educational supervision
- Learn how to teach establishment of epidural analgesia for labour to a novice trainee with very little real-life practical experience of epidural insertion
- Design and deliver a small group teaching program covering the knowledge parts of the trainee curriculum
- Design and deliver a simulation teaching program covering practical parts of the trainee obstetric anaesthesiology curriculum
- Demonstrate the ability to work effectively with the multidisciplinary team to enhance trainee opportunities for learning
- Seek feedback from trainees themselves and other multidisciplinary team members regarding ways to improve the educational experience of obstetric anaesthesiology trainees

Milestones:

- **Level 1:** Understands the challenges of education and supervision in obstetric anaesthesiology

- **Level 2:** Teaches and supervises regional anaesthesia for planned non-urgent operative delivery
- **Level 3:** Teaches and supervises a novice obstetric anaesthesiology trainee in establishment of epidural analgesia in a parturient in active labour
- **Level 4:** Manages the education of an anaesthesiology trainee from novice to the stage of starting resident duties on the obstetric unit
- **Level 5:** Leads the obstetric anaesthesiology education program and is skilled in managing trainees with additional educational needs

Assessment Methods:

- Direct observation of supervision and teaching
- Feedback from patients, trainees, trainers and multidisciplinary team members
- Case-based discussion
- Review of trainees' educational progress

Expected Outcomes:

- Ensure a safe and effective program of education for novice obstetric anaesthesiologists
- Promote high quality holistic obstetric anaesthesia care at the same time as effective education of trainees
- By being an inspirational role model, promote obstetric anaesthesiology as an excellent career choice

EPA 5: Quality management in obstetric anaesthesia

Description: Provide leadership to the quality management agenda of the obstetric anaesthesia service

Domains of Competence:

- **Medical Knowledge**: Understand quality metrics relevant to obstetric anaesthesia; identify useful resources for measuring quality of care; understand the terminology used in measuring quality improvement (QI) and the methodologies used in QI data collection and analysis
- **Patient Care**: Actively seek feedback from patients and use their experiences as opportunities for case-based discussion and learning; advocate for optimal care pathways for obstetric anaesthesia patients
- **Interpersonal and Communication Skills**: Demonstrate leadership in the promotion of QI in the obstetric anaesthesia service; develop skills in delivering constructive feedback to colleagues
- **Professionalism**: Promote a culture of QI with the obstetric anaesthesia service
- **System-Based Practice**: Integrate quality measurement into routine practice in the obstetric anaesthesiology service, within the constraints of the healthcare setting and resources available; develop, review or update local guidelines and protocols; contribute positively to discussions about future service change
- **Practice-Based Learning and Improvement**: Use patient feedback and clinical incident reviews with multidisciplinary input to identify areas for learning; use quality data analysis to benchmark and improve individual and institutional practice

Specific Tasks:

- Participate in a multidisciplinary patient safety review in response to an adverse clinical incident
- Develop, review or update a local guideline or protocol
- Initiate, conduct or lead a QI project in obstetric anaesthesiology
- Perform a gap analysis of the local obstetric anaesthesia service's routine quality metrics data collection *processes* compared to published recommendations
- Present an audit of unit performance compared to published obstetric anaesthesia standards

Milestones:

- **Level 1**: Understands the purpose and components of obstetric anaesthesia quality management
- **Level 2**: Participates in obstetric anaesthesia quality processes
- **Level 3**: Independently applies quality processes to improve obstetric anaesthesia care
- **Level 4**: Shows the ability to lead a QI project in obstetric anaesthesiology
- **Level 5**: Advocates for the service and leads on implementation of improvements across a range of quality processes

Assessment Methods:

- Peer and supervisor feedback
- Case-based discussion
- Participation in multidisciplinary case reviews
- Presentation of a QI project

Expected Outcomes:

- Deliver patient-centred, risk-informed obstetric anaesthesia care
- Reduce adverse outcomes and enhance maternal satisfaction with the obstetric anaesthesia service
- Promote quality processes as routine practice in obstetric anaesthesiology