SITM: Fetal Care (FC)

SECTION 1: CAPABILITIES IN PRACTICE

FC CiP 1: Uses ultrasound skills to recognise, monitor and manage compromise to fetal wellbeing.	
Key skills	**Descriptors**
Uses ultrasound to screen, diagnose and manage fetal compromise	• Understands the principles of transabdominal and transvaginal scanning, using ultrasound safely. • Able to measure fetal biometry to monitor the fetus at risk of growth restriction. • Able to recognise and manage early and late severe fetal growth restriction (FGR), referring cases of early FGR to tertiary services. • Able to recognise disorders of amniotic fluid volume and plan accordingly.
Uses Doppler studies to screen, diagnose and manage fetal compromise	• Able to perform uterine artery Dopplers to assess the risk of placental dysfunction. • Able to perform umbilical artery Dopplers to assess fetal resilience. • Able to perform middle cerebral artery (MCA) Dopplers to evaluate fetal compromise. • Able to perform ductus venosus Dopplers to evaluate fetal compromise.
Uses ultrasound to assess placental location	• Able to use transvaginal scanning to diagnose and manage low-lying placenta.
Discusses their findings with the pregnant woman	• Demonstrates the ability to communicate their findings and the degree of risk effectively so that the woman can be involved in an informed decision-making process.
Assesses and plans the management and delivery of a fetus with severe growth restriction	• Provides ongoing assessment of fetal biometry over time when severe FGR is identified. • Able to use fetal Dopplers – umbilical, MCA and ductus venosus – to assess fetal wellbeing and plan the timing of delivery. • Able to discuss gestation-related risk of delivery versus continuation of pregnancy with the pregnant woman and facilitate informed decision-making.
Provides support and counselling post birth and for future pregnancies	• Provides follow up after the birth and accesses support services for the parents, where outcomes are complicated or poor. • Explains additional information learned after the birth e.g. placental histology.

	• Able to make a plan for future pregnancies, outlining recurrence risks and preventive strategies.

Evidence to inform decision	
• NOTSS • TO2 • CbD • Mini-CEX • OSATS	• Reflective practice • Attendance at appropriate courses e.g. ultrasound theory/practice • Log of cases with outcomes

Knowledge criteria

- The risks associated with the different ultrasound modalities and how to limit them – mechanical index (MI) and thermal index (TI)
- How to use machine controls to optimise the image, including: power, gain, focal length, magnification, sector width, frame rate, pulse repetition frequency, colour and power Doppler modes.
- The difference between small for gestational age (SGA) and fetal growth restriction (FGR)
- The differential diagnosis for fetal growth restriction
- How Doppler assessments are used to monitor growth restriction, timing of birth and detect fetal anaemia
- National guidance on monitoring for FGR, the timing of birth and signs that a referral need to be made to a subspecialist when managing FGR
- How fetal anomalies may influence the Doppler waveforms (e.g. cardiac arrhythmias, fetal anaemia, hydrops and twin-to-twin transfusion syndrome (TTTS))
- Definition of low-lying placenta and how to make the diagnosis using ultrasound
- Management of placenta praevia
- The risk factors for abnormal placental invasion (AIP) and vasa praevia and how to diagnose them using ultrasound, and/or when to refer to a regional AIP service
- Definition of oligohydramnios and polyhydramnios and the differential diagnosis, investigation and management

FC CiP 2: The doctor demonstrates the skills and attributes required to assess the fetus at risk of red cell alloimmunisation.	
Key skills	**Descriptors**
Safely manages the pregnancy where there is a risk of red cell immunisation	• Provides appropriate antenatal care to the woman with a pregnancy at risk. • Recognises when there is a risk of fetal anaemia. • Explains the potential fetal and maternal risks of red cell antibodies. • Liaises with blood transfusion and neonatal services. • Classifies the risks for any pregnancy complicated by red cell antibodies. • Performs and interprets the findings of a MCA Doppler.

	• Monitors the pregnancy at risk and understands the thresholds for referral to tertiary units with transfusion services.

Evidence to inform decision	
• NOTSS • TO2 • CbD • Mini-CEX • OSATs	• Reflective practice • Evidence of MDT working • RCOG e-learning: ○ observation of fetal blood transfusion

Knowledge criteria

- Differential diagnosis for fetal anaemia
- Ultrasound and cardiotocography (CTG) changes secondary to severe fetal anaemia
- Which red cell antibodies may cause haemolytic disease of the fetus and newborn, and threshold antibody levels that carry significant risk
- When and how surveillance for fetal anaemia should be instituted
- How MCA velocities are used to monitor signs of anaemia
- Triggers for referral to a tertiary level unit capable of performing intrauterine transfusion
- Treatment of fetal anaemia
- The role of intravenous immunoglobulin (IVIgG) in haemolytic disease of the fetus and newborn
- Management of the newborn risk of kernicterus

FC CiP 3: The doctor demonstrates the skills and attributes required to assess complications of twin pregnancies.

Key skills	**Descriptors**
Uses ultrasound to monitor twin pregnancies	• Able to determine the chorionicity of a twin pregnancy when scanning in first trimester. • Able to assess and monitor a twin pregnancy using biometry and Doppler scanning techniques.
Manages complicated twin pregnancies	• Able to diagnose and make an initial assessment of growth discordancy in twin pregnancies. • Able to discuss effectively the timing of delivery with parents and facilitate informed decision-making, considering the risk to both twins of delivery or continuing the pregnancy when there is growth discordancy. • Refers to tertiary services when early and severe growth discordancy occurs. • Able to assess and monitor the monochorionic twin pregnancy for presence and evolution of TTTS. • Refers to tertiary services when there is evidence of TTTS or selective FGR in monochorionic twins. • Assists with follow up after treatments for TTTS.

	• Recognises the possibility of other complications of monozygotic twinning, including selective FGR, discordant anomalies, twin reversed arterial perfusion sequence (TRAP) and single intrauterine death, and refers appropriately to fetal medicine tertiary services. • Is aware of the principles of management of higher multiples.

Evidence to inform decision	
• NOTSS • TO2 • CbD • Mini-CEX • OSATS	• Reflective practice • Attendance at specialist twin clinics • Log of cases with outcomes • Observation of advanced procedures in the management of complicated twin pregnancies e.g. fetal reduction and laser ablation

Knowledge criteria

- Definition of significant growth discordance in twin gestations and the importance of chorionicity
- Management of growth discordancy in twin pregnancies
- The clinical and ultrasound features of TTTS, and referral triggers for fetal medicine subspeciality input
- Short and long-term outcomes from TTTS
- The management of TTTS and follow up regimes, following treatment
- The ultrasound features of TRAP and conjoined twins
- Ongoing management of a pregnancy complicated by co-twin death
- Other complications of multiple gestations that necessitate discussion with, or referral to, a tertiary fetal medicine service, e.g. discordant anomaly

SECTION 2: PROCEDURES

Procedures marked with * require three summative competent OSATS.

Procedures	*Level by end of training*	*CiP 1*	*CiP 2*	*CiP 3*
Fetal biometry and liquor volume*	5	X		
Transvaginal placental localisation*	5	X		
Umbilical artery Doppler*	5	X		
Middle cerebral artery Doppler*	5	X	X	
Ductus venosus Doppler*	5	X		
Uterine artery Doppler*	5	X		
Multiple gestation chorionicity*	5			X
Twin pregnancy assessment*	5			X

Subspecialty trainees in Maternal and Fetal Medicine will be expected to acquire the procedural skills listed in this table as well as the subspecialty-specific procedures listed in the MFM subspecialty-specific procedure table.

SECTION 3: GMC GENERIC PROFESSIONAL CAPABILITIES (GPCs)

Mapping to GPCs
Domain 1: Professional values and behaviours Domain 2: Professional skills • Practical skills • Communication and interpersonal skills • Dealing with complexity and uncertainty • Clinical skills *(history taking, diagnosis and management; consent; humane interventions; prescribing medicines safely; using medical devices safely; infection control; and communicable diseases)* Domain 3: Professional knowledge • Professional requirements • National legislative requirements • The health service and healthcare systems in the four countries Domain 4: Capabilities in health promotion and illness prevention Domain 5: Capabilities in leadership and teamworking Domain 6: Capabilities in patient safety and quality improvement • Patient safety • Quality improvement Domain 7: Capabilities in safeguarding vulnerable groups

SECTION 4: MAPPING OF ASSESSMENTS TO FC CiPs

FC CiP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
1: Uses ultrasound skills to recognise, monitor and manage compromise to fetal wellbeing	X	X	X	X	X	X
2: The doctor demonstrates the skills and attributes required to assess the fetus at risk of red cell alloimmunisation	X	X	X	X	X	X

FC CiP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
3: The doctor demonstrates the skills and attributes required to assess complications of twin pregnancies	X	X	X	X	X	X