

SST: Maternal and Fetal Medicine (MFM)

Subspecialty training in Maternal and Fetal Medicine consists of the Special Interest Training Module (SITM) in Pregnancy Care Capabilities in Practice (CiPs), SITM in Maternal Medicine CiPs, SITM in Fetal Care CiPs, SITM in Prenatal Diagnosis CiPs and the MFM subspecialty specific CiPs. There are two Pregnancy Care SITM CiPs (PC CiPs 1-2), two Maternal Medicine SITM CiPs (MM CiPs 1-2), three Fetal Care SITM CiPs (FC CiPs 1-3), three Prenatal Diagnosis SITM CiPs (PD CiPs 1-3), three MFM subspecialty specific CiPs (SST MFM CiPs 1-3) and one subspecialty specific research CiP. The subspecialty trainee will need to complete all 14 CiPs to achieve subspecialty accreditation. The subspecialty specific CiPs can only be completed as part of an accredited subspecialty training programme in Maternal and Fetal Medicine. A doctor who has completed part or all of the SITMs (PC CiPs 1-2, MM CiPs 1-2, FC CiPs 1-3 and PD CiPs 1-3) prior to commencing subspecialty training in MFM does not need to repeat any part of the SITM CiPs already completed.

SITM: Pregnancy Care (PC)

SECTION 1: CAPABILITIES IN PRACTICE

PC CiP 1: The doctor demonstrates the skill and can apply knowledge in the management of the woman whose antenatal care is complicated by commonly encountered medical problems.	
Key Skills	Descriptors
Able to take a thorough medical history	<ul style="list-style-type: none"> • Demonstrates the ability to take a thorough medical history, considering how pregnancy may have affected the presentation and how the presentation may have affected the pregnancy. • Demonstrates the ability to record significant family history, drug history (including interactions and pregnancy safety), past medical history and systemic enquiry, including red flags.
Risk assesses the woman with co-existing medical conditions and plans for her pregnancy in conjunction with specialist services	<ul style="list-style-type: none"> • Is able to risk stratify women with medical problems into those who can be managed using local expertise (category A), those who require clinical review and ongoing advice and guidance by the Maternal Medicine Centre (category B), and those where care in pregnancy is best led by the Maternal Medicine Centre (category C). • Knows the limits of their knowledge and is able to communicate effectively with other specialties locally, and with the Maternal Medicine Network, to optimise pregnancy management.

	<ul style="list-style-type: none"> • Working within guidance and thresholds determined by the local Maternal Medicine Network, is able to: <ul style="list-style-type: none"> ○ assess a woman with a pre-existing medical condition preparing for pregnancy, and construct with her an appropriate plan ○ evaluate and advise on drug therapy for medical conditions and tailor treatment when this would otherwise have a detrimental effect on pregnancy ○ assess conditions that will have a significant impact on the outcome of pregnancy for mother and fetus ○ assess conditions were pregnancy will cause deterioration in a the health of a woman with a pre-existing medical condition and what surveillance is required to limit risk ○ access additional information needed to optimise the management of complex medical conditions ○ formulate a delivery plan that minimises the risk to the mother and her fetus ○ work in partnership with the woman to plan her care and delivery • Refers to other medical and maternal medicine specialists in line with local guidance.
<p>Diagnoses and provides initial management for common acute medical presentations in pregnancy</p>	<ul style="list-style-type: none"> • Understand the investigative enquiry needed to explore common medical presentations including shortness of breath, chest pain, headache, collapse, abdominal pain and fever/sepsis. • Construct a differential diagnosis and request appropriate investigations. • Initiate appropriate emergency management and liaise with allied specialities for an ongoing plan of care. • Understands the impact of and interplay between mental health conditions and maternal medicine conditions and addresses this in management plans.
<p>Diagnoses and manages hypertensive disorders in pregnancy</p>	<ul style="list-style-type: none"> • Is able to assess and counsel the woman with hypertensive disorders, or at risk of pregnancy-induced hypertensive disorders pre-conceptually. • Understands and recognises the diverse aetiology of hypertension in pregnancy, whether pre-existing or arising in pregnancy. • Understands the risks that hypertensive disorders pose to the mother, planning safe surveillance and management in the antenatal period. • Understands the risks that hypertensive disorders pose to the fetus, planning safe surveillance management in the antenatal period.

	<ul style="list-style-type: none"> • Safely manages the hypertensive disorders in the woman in labour. • Understands and can formulate a safe management plan for the woman with severe preeclampsia and the complications of preeclampsia. • Liaises with the multidisciplinary team, including the tertiary centre where appropriate, to optimise the care of the woman with hypertensive disorders. • Works in partnership with the woman to plan her care and delivery.
<p>Diagnoses and manages disorders of glucose metabolism in pregnancy</p>	<ul style="list-style-type: none"> • Assesses and agrees a plan preparing for pregnancy with the woman with pre-existing diabetes demonstrating a knowledge of the additional risk that pre-existing diabetes brings to the mother and her fetus. • Works effectively in the multi-disciplinary team to optimise the care of the pregnant woman with pre-existing diabetes during pregnancy and in labour. • Refers to the tertiary centre in more complex cases. • Diagnoses and counsels the woman in whom diabetes arises in pregnancy. • Devises a safe plan for maternal and fetal surveillance during pregnancy. • Can recognise and manage the acute complications of diabetes in pregnancy eg diabetic ketoacidosis. • Plans for safe delivery of the woman with diabetes and is able to adapt the plan to changing circumstances. • Safely manages the delivery of a woman with diabetes. • Works in partnership with the woman to plan her care and delivery.
<p>Diagnoses and manages common endocrine disorders in pregnancy</p>	<ul style="list-style-type: none"> • Assesses and agrees a plan for the woman with hypothyroidism. • Assesses and agrees a plan for the woman with hyperthyroidism. • Manages the woman with micro- and macroprolactinoma safely through pregnancy.
<p>Supports the health and wellbeing of the morbidly obese pregnant woman</p>	<ul style="list-style-type: none"> • Is able to risk assess and plan for pregnancy and delivery, including women who have undergone bariatric surgery. • Is able to work with the woman to manage weight gain and formulate a plan that is suitable for her whilst encouraging healthy nutrition. • Discusses and negotiates the optimal mode of delivery incorporating patient choice and safest delivery option. • Advises on modifications to delivery that can enhance safety and patient experience of the woman with morbid obesity.

- Liaises with midwifery and anaesthetic colleagues to optimise care.

Evidence to inform decision

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| <ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • Cbd • Mini-CEX | <ul style="list-style-type: none"> • RCOG Learning • Local and Deanery teaching • Attendance at appropriate courses and conferences • Attendance at specialist diabetes antenatal clinics • Attendance at maternal medicine clinics • Log of cases and outcomes |
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Knowledge criteria

- Awareness and understanding of local maternal medicine networks and regional thresholds for referral and MDT involvement
- The pathophysiology, definition, diagnosis, associated acute and longer term maternal and fetal complications, and best practice for management, of pre-eclampsia and its variants
- The pathogenesis and classification, prevalence and complications of pre-existing diabetes (metabolic, retinopathy, nephropathy, neuropathy, vascular disease)
- Monitoring and optimisation of glucose control during labour
- Management of hypoglycaemia and ketoacidosis in pregnancy and labour
- The pathophysiology, presentation and implications for maternal and/or fetal health of common maternal conditions present at booking or that occur during pregnancy
- The aetiology, incidence, diagnosis, management, the obstetric, medical and neonatal complications, and recurrence chance of each condition
- The interpretation of ECGs, chest x-rays and blood gases analysis and how they are influenced by pregnancy
- How pregnancy alters physiology and what impact this has on how medical conditions present, and how results of investigations should be interpreted during pregnancy
- The impact of drug treatment on mother and fetus
- The incidence, associated obstetric, medical and neonatal complications of the pregnant obese woman
- The endocrinology of obesity
- The place of weight reduction strategies and appropriate nutrition in managing the pregnant obese woman
- The risks associated with increased BMI in pregnancy and postpartum and how these may be minimised
- The steps that can be taken pre-pregnancy to reduce the risks of morbid obesity during pregnancy

PC CiP 2: The doctor demonstrates the skill and can apply knowledge in the management of the woman whose care is complicated by infections commonly encountered in pregnancy.

Key Skills	Descriptors
Manages the care of a pregnant woman with obstetrically relevant infections	<ul style="list-style-type: none"> • Demonstrates a knowledge of the implications for pregnancy of variety of infections: HIV, syphilis, CMV, toxoplasmosis, hepatitis B and C, HSV, parvovirus, varicella. • Is able to interpret laboratory results for each infection in liaison with virology. • Explains the potential fetal, newborn and long-term effects of fetal infections. • Recognises when to refer and how best to share care and monitoring. • Liaises appropriately with the tertiary centre and the multidisciplinary team. • Works with the MDT to formulate an intrapartum plan for medications for the mother and postnatally for the baby. • Gives appropriate advice to minimise risk of vertical transmission.
Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • Cbd • Mini-CEX 	<ul style="list-style-type: none"> • RCOG Learning • Local and Deanery teaching • Attendance at appropriate courses and conferences • Log of cases and outcomes
Knowledge criteria	
<ul style="list-style-type: none"> • The clinical features, prevention, vertical transmission risk, ultrasound features, short- and longer-term implications for the fetus and newborn, laboratory investigation and pregnancy management of CMV, toxoplasmosis, parvovirus and varicella • The role of the clinical virologist and the limitations of any antenatal treatment options 	

PC CiP 3: The doctor demonstrates the skill and can apply knowledge in the management of the woman whose postnatal care is complicated by commonly encountered medical problems.	
Key Skills	Descriptors
Manages the woman with medical conditions in the postnatal period – evidence for a variety of conditions but most include diabetes	<ul style="list-style-type: none"> • Ensures that plans for contraception, tailored to the woman's needs, are discussed and facilitated. • Ensures that the woman is followed-up in an appropriate setting. • Is able to discuss the long-term implications of medical conditions on the woman's health and well-being. • Empowers the woman to limit the effect of her medical conditions on future pregnancies.
Evidence to inform decision	

<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • CbD • Mini-CEX 	<ul style="list-style-type: none"> • RCOG Learning • Local and Deanery teaching • Attendance at specialist diabetes antenatal clinics • Attendance at maternal medicine clinics • Log of cases and outcomes
Knowledge criteria	
<ul style="list-style-type: none"> • Contraception in the postnatal period • Provision of long-acting contraceptives • Implications of medical conditions on the wellbeing of mother and baby, and impact of further pregnancies 	

PC CiP 4: The doctor demonstrates holistic care	
Key Skills	Descriptors
Is able to apply legal and ethical principles in pregnancy care where this is needed	<ul style="list-style-type: none"> • Is able to screen for and facilitate safeguarding of the woman at risk of domestic violence. • Is able to screen for and facilitate safeguarding of the neonate at risk of harm. • Is able to counsel and complete an advance directive for the woman who declines blood products.
Optimises pregnancy outcomes for the socially vulnerable woman	<ul style="list-style-type: none"> • Is aware of the effect of social deprivation on pregnancy outcomes. • Understands the prevalence of domestic violence, the need to screen all women and the need to agree a plan to safeguard the pregnant person and their children.
Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • CbD • Mini-CEX 	<ul style="list-style-type: none"> • Attendance at pre-birth planning meetings safeguarding team
Knowledge criteria	
<ul style="list-style-type: none"> • The medical and neonatal complications, and legal consequences, of social disadvantage with respect to: domestic violence, teenage pregnancy and asylum seekers • The influence of ethnic and religious background on obstetric expectations and outcome • The law in relation to seeking asylum • When and how to use different agencies involved in processing claims for asylum seekers and meeting their practical needs 	

- The role of different agencies (Social Services, Police, Voluntary groups) in the investigation of suspected domestic violence and the protection of vulnerable women and children
- The law in relation to physical and sexual assault, bodily harm and rape
- FGM procedures and their consequences, including for pregnancy and birth
- Child protection issues associated with FGM
- Religious beliefs and customs that may affect healthcare or consent for medical interventions

SECTION 2: PROCEDURES

There are no procedures in this SITM.

SECTION 3: GMC GENERIC PROFESSIONAL CAPABILITIES

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 PC CiPs

PC CIP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
1: The doctor demonstrates the skill and can apply		X	X	X	X	X

PC CIP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
knowledge in the management of the woman whose antenatal care is complicated by commonly encountered medical problems						
2: The doctor demonstrates the skill and can apply knowledge in the management of the woman whose care is complicated by infections commonly encountered in pregnancy.		X	X	X	X	X
3: The doctor demonstrates the skill and can apply knowledge in the management of the woman whose postnatal care is complicated by commonly encountered medical problems		X	X	X	X	X
4: The doctor demonstrates holistic care		X	X	X	X	X

SITM: Maternal Medicine (MM)

SECTION 1: CAPABILITIES IN PRACTICE

MM CIP 1: The doctor is able to work with others to provide high quality care to the woman with medical conditions in pregnancy or planning a pregnancy.

Key Skills

Descriptors



<p>Effectively communicates with the team providing care</p>	<ul style="list-style-type: none">• Builds on the key skills of the Pregnancy Care SITM, extending them into the full range of medical problems which may complicate pregnancy.• Works with the Maternal Medicine Network through MDT meetings to construct pre-pregnancy, antepartum, intrapartum and postpartum management plans to ensure that high quality care is available locally to women with complex medical problems (category B).• Refers women with highly complex medical problems (category C) for ongoing care in a Maternal Medicine Centre.• Is aware of a possible genetic diagnosis that may not have been diagnosed to date and refer to clinical genetics as appropriate.
<p>Provides tailored pre-pregnancy counselling</p>	<ul style="list-style-type: none">• Is able to advise the woman with complex medical conditions on the impact of pregnancy on her condition.• Is able to advise the woman with complex medical conditions on the impact of the condition on pregnancy.• Is able to advise on modifications that will optimise her health before embarking on pregnancy.• Is able to adjust medication to the safest regime for pregnancy.• Is able to formulate a plan so the woman knows what to expect once she becomes pregnant.• Is able to advise on the timing of pregnancy.• Is able to advise a woman against conception in circumstances where the risk of pregnancy is too great.
<p>Is able to consider the anaesthetic implications of maternal conditions, liaise with anaesthetic colleagues and plan according to the woman's needs</p>	<ul style="list-style-type: none">• Is familiar with the anaesthetic considerations for the women with a variety of medical conditions.• Is able to work with anaesthetic colleagues to assess the medically complicated pregnant woman and formulate a plan optimising the safety of the woman and her fetus during pregnancy, delivery and the postnatal period.• Demonstrates familiarity with the effect of different choices for intrapartum analgesia to ensure that the labouring woman with complex medical conditions is safe in labour.• Participates in obstetric anaesthesia clinics.
<p>Can perform a risk benefit analysis for the use of investigations and treatments during pregnancy</p>	<ul style="list-style-type: none">• Knows which investigations and medications are appropriate and can discuss the safety of these for the mother and fetus.• Is able to interpret tests e.g. chest x-ray, ABG and ECG, lung function tests, echocardiogram.• Demonstrates understanding of the effects of drugs used for maternal indications on the fetus.• Understands and accommodates the physiological effects of pregnancy on interpreting laboratory results and the pharmacokinetics of any drugs used.

Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • Cbd • Mini-CEX 	<ul style="list-style-type: none"> • RCOG Learning • local and deanery teaching • Attendance at obstetric anaesthesia clinics • Attendance at maternal medicine network meetings
Knowledge criteria	
<ul style="list-style-type: none"> • Local team structures, networks and guidelines for the management of medical conditions in pregnancy and outside of pregnancy • Awareness and understanding of local maternal medicine networks and regional thresholds for referral and MDT involvement, when it is appropriate to manage locally, to manage locally with Maternal Medicine Centre support and when referral to centres is advised • Criteria for referral to Maternal Medicine Centres • Structure of the Maternal Medicine Networks • Categories for level of care within the Maternal Medicine Networks ie category A, B & C • When to seek specialist input • The structure and organisation of high dependency, intensive care and outreach teams • Indications for high dependency and intensive care • Methods of invasive monitoring for oxygenation, acid base balance, intra-arterial pressure, cardiac output, preload and contractility • The principles and practice of palliative care 	

MM CiP 2: The doctor has a high level of understanding of the impact that medical conditions have on pregnancy and is able to optimise care for the affected woman.	
Key Skills	Descriptors
Is able to manage the woman with renal problems in pregnancy	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period to minimise the risks associated with the woman's medical condition. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Is able to recognise the presentation of renal disorders in pregnancy, can construct a differential diagnosis and work with the MDT to construct a suitable management plan for pre-existing or new onset conditions. • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman.

	<ul style="list-style-type: none"> • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high. • Has a good working knowledge of medical treatments for renal conditions that are safe in pregnancy, is able to modify treatment when they are not and how to access advice on safety.
<p>Is able to manage the woman with haematological problems in pregnancy</p>	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period to minimise the risks associated with the woman's medical condition. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Is able to recognise the presentation of haematological disorders in pregnancy, can construct a differential diagnosis and work with the MDT to construct a suitable management plan for pre-existing or new onset conditions. • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman. • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high. • Has a good working knowledge of medical treatments for haematological conditions that are safe in pregnancy, is able to modify treatment when they are not and how to access advice on safety.
<p>Is able to manage the woman with congenital and acquired cardiac conditions in pregnancy</p>	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period to minimise the risks associated with the woman's medical condition. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Is able to recognise the presentation of cardiac disorders in pregnancy, can construct a differential diagnosis and work with the MDT to construct a suitable management plan for pre-existing or new onset conditions. • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman. • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high. • Has a good working knowledge of medical treatments for cardiac conditions that are safe in pregnancy, is able to modify treatment when they are not and how to access advice on safety.

<p>Is able to manage the woman with inflammatory conditions - connective tissue disorders, inflammatory bowel disease and dermatological problems in pregnancy</p>	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period to minimise the risks associated with the woman's medical condition. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Is able to recognise the presentation of inflammatory or dermatological conditions in pregnancy, can construct a differential diagnosis and work with the MDT to construct a suitable management plan for pre-existing or new onset conditions. • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman. • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high. • Has a good working knowledge of medical treatments for inflammatory disorders that are safe in pregnancy, including biologics, is able to modify treatment when they are not and how to access advice on safety.
<p>Is able to manage the woman with epilepsy and other common neurological problems in pregnancy</p>	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period for women with epilepsy, multiple sclerosis, idiopathic intracranial hypertension and chronic headache. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Is able to recognise the presentation of neurological disorders in pregnancy, can construct a differential diagnosis and work with the MDT to construct a suitable management plan for pre-existing or new onset conditions. • Counsels the woman with epilepsy in the safeguarding of her baby.
<p>Is able to manage the woman with liver disorders in pregnancy</p>	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period to minimise the risks associated with the woman's medical condition. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Is able to recognise the presentation of liver disorders in pregnancy, can construct a differential diagnosis and work with the MDT to construct a suitable management plan for pre-existing or new onset conditions.

	<ul style="list-style-type: none"> • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman. • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high. • Has a good working knowledge of medical treatments for liver conditions that are safe in pregnancy, is able to modify treatment when they are not and how to access advice on safety.
<p>Is able to manage the woman with HIV in pregnancy</p>	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period to minimise the risks associated with the HIV in pregnancy. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman. • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high. • Has a good working knowledge of medical treatments for HIV conditions that are safe in pregnancy, is able to modify treatment when they are not, how to access advice on safety and the criteria for commencing treatment during pregnancy.
<p>Is able to manage the woman with respiratory compromise in pregnancy</p>	<ul style="list-style-type: none"> • Can construct an appropriate plan for pregnancy, delivery and the postnatal period to minimise the risks associated with the woman's medical condition. • Can construct a plan for pregnancy, delivery and neonatal period to minimise the risk to the fetus/baby. • Is able to recognise the presentation of respiratory disorders in pregnancy, can construct a differential diagnosis and work with the MDT to construct a suitable management plan for pre-existing or new onset conditions. • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman. • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high. • Has a good working knowledge of medical treatments for respiratory conditions that are safe in pregnancy, is able to modify treatment when they are not and how to access advice on safety.

<p>Is able to manage the woman with current or past malignancy in pregnancy</p>	<ul style="list-style-type: none"> • When malignancy is diagnosed in pregnancy, is able to support the woman through a tailored plan for treatment during pregnancy and provide reassurance of the suitability of this plan during pregnancy. • Is able to weigh the timing of delivery around the treatment needs. • When malignancy has been treated prior to pregnancy, is aware of the implications for maternal health during pregnancy and is able to mitigate against these. • Is mindful of the fetal considerations when managing malignancy in pregnancy. • Understands which tests are appropriate in pregnancy for diagnosis and monitoring, and which are not valid or have different reference ranges in the pregnant woman. • Understands when tests pose an additional risk to the mother or fetus, and is able to discuss the relative risk/benefits of this, supporting the women who deems the risk too high.
<p>Evidence to inform decision</p>	
<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • Cbd • Mini-CEX 	<ul style="list-style-type: none"> • RCOG Learning • Local and deanery teaching • Attendance at appropriate courses and conferences (eg BMFMS, MOMS) • Log of cases with outcomes • Attendance at non-obstetric specialist medical clinics • Attendance at maternal medicine MDTs
<p>Knowledge criteria</p>	
<ul style="list-style-type: none"> • The normal functional and anatomical changes of the various body systems during pregnancy (cardiovascular, respiratory, gastrointestinal, endocrine, haematological) • The pathological changes in the function of these body systems in pregnancy • Renal - Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of renal conditions predating and arising de novo in pregnancy and the effect of labour and birth • Acute renal impairment • Hydronephrosis • Renal disease and hypertension • Glomerulonephritis • Reflux nephromathy • Renal transplant • Haematological- Understand the risk factors, presentation, investigation, differential diagnosis 	

management and outcomes of renal conditions predating and arising de novo in pregnancy and the effect of labour and birth

- Sickle disease and crisis
- Thalassaemia
- Thromboembolic disease
- Bleeding disorders
- Disorders of platelets
- Cardiac - Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of cardiac conditions predating and arising de novo in pregnancy and the effect of labour and birth
 - Congenital cardiac disease
 - Ischaemic cardiac disease
 - Mechanical and tissue valve replacements
 - Peripartum cardiomyopathy
- Connective tissue disorders- Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of connective tissue disorders predating and arising de novo in pregnancy and the effect of labour and birth
 - SLE
 - Rheumatoid arthritis
 - APLS
- Gastrointestinal- Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of gastrointestinal conditions predating and arising de novo in pregnancy and the effect of labour and birth
 - Acute fatty liver
 - Crohn's disease
 - Ulcerative colitis
 - Obstetric cholestasis
 - Hyperemesis gravidarum
 - Immune and infective hepatitis
 - Liver transplant
- Dermatological conditions- Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of dermatological conditions predating and arising de novo in pregnancy and the effect of labour and birth
 - Psoriasis
 - eczema
 - Pemphigoid
 - Polymorphic eruption of pregnancy
 - Prurigo
 - Pruritic folliculitis
- Neurology- Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of neurological conditions predating and arising de novo in pregnancy and the effect of labour and birth
 - Multiple sclerosis
 - Epilepsy
 - Bell's palsy

- Migraine
- Stroke
- Cerebral palsy
- HIV infection - Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of HIV predating and arising de novo in pregnancy
- Current pharmacological management of HIV, and drug side effects
- Respiratory disease- Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of respiratory conditions predating and arising de novo in pregnancy and the effect of labour and birth
 - Asthma
 - Cystic fibrosis
- Malignancy - Understand the risk factors, presentation, investigation, differential diagnosis management and outcomes of malignancy predating and arising de novo in pregnancy and the effect of labour and birth
 - Breast cancer
 - Leukaemia
 - Lymphoma
- Genetics and disease inheritance of medical disorder – the risk to the mother and the risk to the fetus and screening options eg haemoglobinopathy
- How pregnancy can influence the findings of investigations and may alter treatment effects
- How the medical problem may deteriorate during pregnancy, how this might present, and how it would be managed
- Paediatric network guidelines for the management of newborn problems, including frameworks around extreme prematurity and antenatal parallel planning
- The pharmacology of drugs used to manage these conditions
- The pregnancy and breastfeeding safety profile of drugs, chemotherapy and radiotherapy used to manage these medical conditions
- Recurrence risks for future pregnancies
- The optimal forms of contraception for women with these specific medical disorders

SECTION 2: PROCEDURES

There are no procedures in this SITM

SECTION 3: GMC GENERIC PROFESSIONAL CAPABILITIES

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 MM CiPs

MM CIP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
1: The doctor is able to work with others to provide high quality care to the woman with medical conditions in pregnancy or planning a pregnancy		X	X	X	X	X
2: The has a high level of understanding of the impact that medical conditions have on pregnancy and is able to optimise care for the affected woman		X	X	X	X	X

SITM: Fetal Care (FC)

SECTION 1: CAPABILITIES IN PRACTICE

FC CiP 1: Uses ultrasound skills to recognise, monitor and manage compromise to fetal well-being.	
Key Skills	Descriptors
Uses ultrasound to screen, diagnose and manage fetal compromise	<ul style="list-style-type: none"> • Understands the principles of transabdominal and transvaginal scanning, using ultrasound safely. • Is able to measure fetal biometry to monitor the fetus at risk of growth restriction. • Is able to recognise and manage early and late severe fetal growth restriction, referring cases of early FGR to tertiary services. • Is able to recognise and plan appropriately, disorders of amniotic fluid volume.
Uses Doppler studies to screen, diagnose and manage fetal compromise	<ul style="list-style-type: none"> • Is able to perform uterine artery Dopplers to assess risk of placental dysfunction. • Is able to perform umbilical artery Dopplers to assess fetal resilience. • Is able to perform middle cerebral artery Dopplers to evaluate fetal compromise. • Is able to perform ductus venosus Dopplers to evaluate fetal compromise.
Uses ultrasound to assess placental location	<ul style="list-style-type: none"> • Is able to diagnose, using transvaginal scanning, and manage, low lying placenta.
Discusses their findings with the parents	<ul style="list-style-type: none"> • Demonstrates that they can communicate their findings and the degree of risk effectively so that the woman can be involved in the decision making process.
Assesses and plans the management and delivery of the fetus with severe growth restriction	<ul style="list-style-type: none"> • Provides ongoing assessment of fetal biometry over time when severe fetal growth restriction is identified. • Is able to use fetal Dopplers – umbilical, MCA and ductus venous – to assess fetal wellbeing and plan timing of delivery. • Is able to discuss effectively gestation related risk of delivery versus continuation of pregnancy with parents and facilitate shared decision making.
Provides support and counselling post birth and pre-pregnancy	<ul style="list-style-type: none"> • Provides follow up after the birth and accesses support services on behalf of the parents where outcomes are complicated or poor.

	<ul style="list-style-type: none"> • Explains additional information learned after the birth eg placental histology. • Is able to make a plan for future pregnancies, detailing recurrence risks and preventive strategies.
Evidence to inform decision	
<ul style="list-style-type: none"> • NOTSS • TO2 • CBD • Mini-Cex • OSATs (see below) 	<ul style="list-style-type: none"> • Reflective Practice • Attendance at appropriate courses e.g ultrasound theory/practice • Log of cases with outcomes
Knowledge criteria	
<ul style="list-style-type: none"> • 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 SGA (small for gestational age) and FGR (fetal growth restriction) • The differential diagnosis for fetal growth restriction • How Doppler assessments are used to monitor growth restriction, time birth and detect fetal anaemia • National guidance on monitoring for fetal growth restriction, timing of birth and triggers for referral to a subspecialist when managing fetal growth restriction • How fetal anomalies may influence the Doppler waveforms (for example cardiac arrhythmias, fetal anaemia, hydrops, and twin-twin transfusion syndrome) • Definition of low lying placenta and how to make the diagnosis using ultrasound. • Management of placenta praevia • The risk factors for abnormal placental invasion 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 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	<ul style="list-style-type: none"> • 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.

	<ul style="list-style-type: none"> • Classifies the risks for any pregnancy complicated by red cell antibodies. • Performs and interprets MCA Doppler. • Monitors the pregnancy at risk and understands the thresholds for referral to tertiary units with transfusion services.
Evidence to inform decision	
<ul style="list-style-type: none"> • NOTSS • TO2 • CBD • Mini-Cex • OSATs (see below) 	<ul style="list-style-type: none"> • Reflective Practice • Evidence of MDT working • RCOG e-learning • Observation of fetal transfusion
Knowledge criteria	
<ul style="list-style-type: none"> • Differential diagnosis for fetal anaemia • Ultrasound and 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 IVIG in haemolytic disease of the fetus and newborn • Management of the neonate at 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	<ul style="list-style-type: none"> • Is able to determine the chorionicity of a twin pregnancy when scanning in first trimester. • Is able to assess and monitor a twin pregnancy using biometry and Doppler scanning techniques.
Manages complicated twin pregnancies	<ul style="list-style-type: none"> • Is able to diagnose and make an initial assessment of growth discordancy in twin pregnancies. • Is able to discuss effectively the timing of delivery with parents and facilitate shared 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. • Is able to assess and monitor the mono-chorionic twin pregnancy for presence and evolution of twin-twin transfusion.

- Knows when to refer 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 fetal growth restriction, discordant anomalies, 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

- | | |
|--|---|
| <ul style="list-style-type: none"> • NOTSS • TO2 • CBD • Mini-Cex • OSATs (see below) | <ul style="list-style-type: none"> • Reflective Practice • Attendance at specialist twin clinics • Log of cases with outcomes • Observation of advanced procedures in the management of complicated twin pregnancies eg fetal reduction, 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 subspecialty input
- Short and long term outcomes from TTTS
- The management of TTTS and follow up regimes following treatment
- The ultrasound features of TRAP (Twin reverse arterial perfusion sequence) 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 eg discordant anomaly

SECTION 2: PROCEDURES

Procedures marked with * require three summative competent OSATS

<i>Procedures</i>	<i>Level by end of training</i>	<i>CIP 1</i>	<i>CIP 2</i>	<i>CIP 3</i>
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

SECTION 3: GMC GENERIC PROFESSIONAL CAPABILITIES

Mapping to GPCs
Domain 1: Professional values and behaviours
Domain 2: Professional skills <ul style="list-style-type: none"> • Practical skills • Communication and interpersonal skills • Dealing with complexity and uncertainty • Clinical skills (<i>history taking, diagnosis and management, consent; humane interventions; prescribing medicines safely; using medical devices safely; infection control and communicable diseases</i>)
Domain 3: Professional knowledge <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 well-being		X	X	X	X	X
2: The doctor demonstrates the skills and attributes required assess the fetus at risk of red cell alloimmunisation	X	X	X	X	X	X
3: The doctor demonstrates the skills and attributes required to assess	X	X	X	X	X	X

FC CIP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
complications of twin pregnancies						

SITM: Prenatal Diagnosis (PD)

SECTION 1: CAPABILITIES IN PRACTICE

PD CIP 1: The doctor can use ultrasound to recognise where fetal anatomy is not normal.	
Key Skills	Descriptors
Demonstrates normal structural findings in all trimesters and recognises if normality cannot be demonstrated	<ul style="list-style-type: none"> • Performs and records a detailed, systematic ultrasound of the fetus as per FASP guidance. • Understands the strengths and limitations of ultrasound for each system within each trimester. • Explains normal anatomical views to the woman. • Documents and records normal anatomical views. • Recognises when image quality is technically poor. • Is able to explain next steps if normal views cannot be obtained.
Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • CbD • Mini-CEX • OSATs (see below) 	<ul style="list-style-type: none"> • RCOG Learning • FASP on-line training • Local and Deanery teaching • Attendance at relevant courses and conferences • Log of cases and outcomes • Attendance at fetal medicine clinics • Attendance at MDTs • Attendance at specialist neonatal and paediatric clinics • Examples of anonymised birth plans
Knowledge criteria	
<ul style="list-style-type: none"> • The normal appearances on ultrasound scan in all trimesters of the fetal CNS, face and neck, thorax, cardiovascular system, abdominal wall and gastrointestinal tract, urogenital system and the fetal skeleton and extremities • Local protocols for follow up, if any, after an incomplete anatomy scan 	

- Normal embryology of all body systems, and how errors in these processes result in the more common fetal abnormalities targeted by FASP.
- Normal fetal behaviour and activity, and abnormalities of this
- Fetal circulation, and how it adapts at birth
- Diagnostic features of each condition targeted by FASP, their differential diagnosis and chance of structural, chromosomal and syndromic associations. These conditions are Trisomy 21, 18 and 13, anencephaly, spina bifida, congenital diaphragmatic hernia, gastroschisis, exomphalos, renal agenesis, facial cleft, hypoplastic right or left heart, lethal skeletal dysplasia
- The thresholds for diagnosing mild, moderate and severe ventriculomegaly measurements, and the potential implications of the different severities of ventriculomegaly
- The role of MRI for CNS lesions.
- The difference between Dandy Walker malformation, DW Variant and Mega cisterna magna, the implications of each and the pitfalls in prenatal diagnosis
- The common fetal tachy- and brady – arrhythmias and the role of the paediatric cardiologist in their management
- The different types of VSD and their association with cardiac, extracardiac and chromosomal anomalies. Understand the role of the paediatric cardiologist in their management
- The ultrasound features of transposition of the great arteries, atresia of either outflow tract, stenosis of either outflow tract, double outlet right ventricle or a common outflow tract (truncus arteriosus)
- The association of these conditions with further cardiac, extracardiac and chromosomal anomalies
- The role of the paediatric cardiologist in the management of fetal cardiac problems
- The ultrasound features of GI atresia, associations and surgical options following birth
- The spectrum of ultrasound findings of echogenic bowel and its association with chromosomal anomalies, cystic fibrosis, growth restriction and viral infections
- Urinary tract obstruction and MCDK: aetiology, spectrum of severity postnatal investigation and the likely short- and long-term impact of these conditions
- The local pathway for postnatal referral for talipes and the Ponsetti approach to treatment
- Limb reduction defects: associations and aetiology
- Findings suggestive of lethal skeletal dysplasia and the features of the more common non-lethal dysplasias, particularly certain types of osteogenesis imperfecta and achondroplasia
- A differential diagnosis for non-immune hydrops, the need for tertiary referral and the range of investigations likely to be offered

PD CiP 2: The doctor can assess and investigate a pregnancy where there are concerns regarding the fetus

Key Skills	Descriptors
Is able to provide genetic counselling in common prenatal situations	<ul style="list-style-type: none"> • Takes an appropriate history and constructs, where appropriate, a family tree in women with, or chance of, genetic conditions. • Explains common modes of Mendelian and multifactorial inheritance, and recurrence risks.

	<ul style="list-style-type: none"> • Counsels for previous trisomy and monosomy X. • Counsels for previous neural tube defect.
<p>Provides initial counselling with regard to common fetal structural abnormalities and ongoing management in conjunction with tertiary FM services</p>	<ul style="list-style-type: none"> • Experienced in the ultrasound diagnosis and management of pregnancies complicated by fetal abnormalities covered by the Fetal Anomaly Screening Programme. • Discusses other potential prenatal tests appropriately. • Recognises when to refer to tertiary centre and how best to share care and monitoring. • Liaises appropriately with the tertiary centre and the multidisciplinary team. • In collaboration with subspecialists, formulates, implements and where appropriate modifies management plan. • Counsels individuals and their partners regarding the fetal risks, implications for the pregnancy and the long-term outcome. • Signposts to external sources of information and support. • Constructs a follow-up plan for the pregnancy. • Plans birth and appropriate neonatal support in collaboration with fetal medicine specialist.
<p>Counsels and manages pregnancies at risk of fetal infection</p>	<ul style="list-style-type: none"> • Investigates appropriately for common fetal infections. • Is able to interpret laboratory results for each infection in liaison with virology. • Explains the potential fetal, newborn and long-term effects of fetal infections. • Recognises when to refer and how best to share care and monitoring. • Liaises appropriately with the tertiary centre and the multidisciplinary team.
<p>Counsels and manages severe early fetal growth restriction</p>	<ul style="list-style-type: none"> • Is able to produce a differential diagnosis. • Knows when and which further investigations should be offered. • Liaises with the fetal medicine tertiary referral centre regarding diagnosis and ongoing management.
<p>Counsels regarding prenatal investigations</p>	<ul style="list-style-type: none"> • Understands both the non-invasive and invasive options and is able to discuss the risks and benefits, facilitating choice. • Understands the importance of the different levels of resolution of genetic testing and is able to communicate the importance of this to the parents. • Explains the risks and benefits of each procedure and any alternatives. • Communicates the scope and the limitations of these tests.

	<ul style="list-style-type: none"> • Describes how prenatal samples are processed and when, and how, the results are given. • Offers genetic counselling where appropriate.
Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • CbD • Mini-CEX 	<ul style="list-style-type: none"> • RCOG Learning • Local and Deanery teaching • Attendance at relevant courses and conferences • Attendance at Clinical Genetics clinics • Log of cases and outcomes • Attendance at fetal medicine clinics • Attendance at MDTs • Attendance at specialist neonatal and paediatric clinics • Examples of anonymised birth plans
Knowledge criteria	
<ul style="list-style-type: none"> • The genetic basis for trisomy 21, 18 and 13 and the ultrasound features associated with them • The range of tests available for screening and testing for the common trisomies and the organisation and quality control of the screening service • Other aneuploidies: the implications of Turner syndrome (45XO), Klinefelter syndrome (47 XXY) and 47 XXX and appreciate the approach to managing pregnancies complicated by much rarer/unique chromosomal abnormalities • The underlying genetic inheritance patterns and prenatal testing for cystic fibrosis, muscular dystrophy and fragile X, and the need for liaison with clinical genetics • When it is appropriate to offer invasive testing, and when not to • The role of non-invasive testing • The implications for the current pregnancy and the long-term prognosis for each condition, and recurrence risks for future pregnancies • The limitations of ultrasound in detecting and diagnosing congenital abnormalities (e.g. cleft palate) or predicting prognosis (e.g. diaphragmatic hernia) • Triggers and diagnoses necessitating tertiary referral • Diagnostic features of each condition, their differential diagnosis and the chance of associated structural, chromosomal and syndromic associations • The role of DNA analysis from maternal plasma 	

PD CiP 3: The doctor demonstrates the skills and attributes required to provide ongoing support and care to parents for whom a problem with their pregnancy has been identified	
Key Skills	Descriptors
Counsels on and organises or refers onwards for	<ul style="list-style-type: none"> • Raises the option of termination of pregnancy for fetal anomaly appropriately.

termination of pregnancy for fetal anomaly	<ul style="list-style-type: none"> • Counsels regarding the different methods of termination, when termination is offered and when fetocide is legally mandated. • Organises termination of pregnancy for fetal anomaly (or refers appropriately where there is conscientious objection or the need for tertiary involvement). • Supports the parents' journey from diagnosis to follow up with planning for future pregnancies. • Adjusts care around termination of pregnancy in high risk situations. • Manages complications of termination of pregnancy. • Is aware of and can signpost to appropriate organisations providing support.
Supports the woman who wishes to continue with the pregnancy where the baby will not survive to birth and the pregnancy where the baby is expected to die in the neonatal period	<ul style="list-style-type: none"> • Supports and empowers the parents in their decision. • Plans for delivery with the family and paediatric team to give the parents the best experience possible in the circumstances, with clarity on intervention/non-intervention in labour. • Plans an appropriate end of life pathway with the family and paediatric team.
Provides follow up and counselling after a pregnancy complicated by fetal anomaly	<ul style="list-style-type: none"> • Explains the role of the post-mortem and any other relevant postbirth tests (eg genetic testing, post-mortem MRI). • Explains the findings and implications of any additional post-birth investigations. • Refers, where appropriate, to the wider multi-disciplinary team, including clinical genetics. • Counsels regarding chance of recurrence across the range of conditions targeted by FASP, and arranges genetic counselling where appropriate. • Proposes a plan for future pregnancy management. • Recognises when tertiary service involvement is appropriate for more complex cases.
Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective Practice • NOTSS • TO2 • Cbd • Mini-CEX 	<ul style="list-style-type: none"> • RCOG Learning • Local and Deanery teaching • Attendance at relevant courses and conferences • Attendance at neonatal unit ward rounds • Log of cases and outcomes • Attendance at fetal medicine clinics • Attendance at MDTs • Attendance at specialist neonatal and paediatric clinics • Examples of anonymised birth plans

Knowledge criteria

- The antenatal management, intrapartum care and immediate postnatal management of each condition
- The impact of the diagnosis and individual circumstances on the timing, location and mode of birth
- The local prenatal, birth and post-birth pathways for care of the fetus and newborn with these conditions
- The legal framework under which termination of pregnancy by feticide may be offered
- Recognise which conditions are amenable to prenatal treatment (e.g. diaphragmatic hernia, spina bifida)
- The recurrence risk and management plan for future pregnancies for each condition

SECTION 2: PROCEDURES

The trainee will provide evidence through OSATs of their competency to perform fetal anomaly scans i.e. they may choose to have an OSAT demonstrating their assessment of a single system, but should be able to demonstrate all the fetal systems to the standard of FASP. Procedures marked with * require three summative competent OSATS

Procedures	Level by end of training	CIP 1	CIP 2	CIP 3
Fetal anomaly scan*	4	X		
Fetal echo*	4	X		
Amniocentesis	1		X	
CVS	1		X	
Feticide	1			X

SECTION 3: GMC GENERIC PROFESSIONAL CAPABILITIES

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 PD CiPs

PD CIP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
1: The doctor can use ultrasound to recognise where fetal anatomy is not normal	X	X	X	X	X	X
2: The doctor can use ultrasound to recognise where fetal anatomy is not normal		X	X	X	X	X
3: The doctor demonstrates the skills and attributes required to provide ongoing support and care to parents for whom a problem with their pregnancy has been identified		X	X	X	X	X

MFM SST specific CiPs

SECTION 1: CAPABILITIES IN PRACTICE

SST MFM CiP1: The doctor is able to lead in providing care to women with pregnancies complicated by the full range of fetal concerns.	
Key Skills	Descriptors
Manages rare fetal structural abnormalities	<ul style="list-style-type: none"> • Diagnoses, provides a differential diagnosis for, and manages the full range of rare fetal structural abnormalities. • Demonstrates how these ultrasound findings are researched and managed. • Counsels women and their partners regarding the fetal risks, implications for the pregnancy and the long term outcome. • Offers other prenatal tests appropriately, and appropriately involve Clinical Genetics team. • Liaises appropriately with the referring centre and the multidisciplinary team. • In collaboration with paediatric specialists (Eg: Paediatric cardiology, urology, neurology, surgery specialists), formulates, implements and where appropriate modifies management plan. • Signposts to external sources of information and support. • Constructs a follow-up plan for the pregnancy. • Plans birth and appropriate neonatal support. • Formulates a management plan for future pregnancies.
Manages fetal hydrops	<ul style="list-style-type: none"> • Constructs a differential diagnosis and targets appropriate investigations. • Treats reversible causes. • Manages pregnancies where the cause of the hydrops remains unclear. • Pursues the diagnosis post-birth and provides counselling for future pregnancies.
Manages rare complications of multiple gestations	<ul style="list-style-type: none"> • Diagnoses and manages TTTS, and provides follow-up care. • Manages discordant anomaly, including counselling on the selective termination of pregnancy. • Recognises and manages TRAP sequence.

	<ul style="list-style-type: none"> • Refers to quaternary services for high level procedures where indicated. • Manages monoamniotic twin pregnancies. • Manages triplet and higher order multiple gestations, including the provision of counselling, without judgement, on multifetal pregnancy reduction. • Diagnoses and manages severe early onset selective fetal growth restriction in monochorionic and dichorionic multiple pregnancies.
Manages pregnancies at high chance of fetal alloimmune disorders	<ul style="list-style-type: none"> • Explains the potential fetal and maternal risks of red cell antibodies. • Provides surveillance for pregnancies complicated by Parvovirus infections. • Liaises with blood transfusion and neonatal services. • Classifies risks for any pregnancy complicated by red cell antibodies and provides appropriate surveillance for fetal anaemia. • Prepares women and their partners for the neonatal care necessary in cases of HDFN. • Explains the risks of maternal antiplatelet antibodies and knows when they should be tested for. • Manages a pregnancy complicated by maternal antiplatelet antibodies, including birth and neonatal care, and offers antenatal treatment where appropriate.
Offers and provides termination of pregnancy at all gestations appropriately	<ul style="list-style-type: none"> • Raises the option of termination of pregnancy for fetal abnormality appropriately. • Counsels regarding the different methods of termination. • Organises termination of pregnancy for fetal abnormality. • Adjusts care around termination of pregnancy in high risk situations. • Manages complications of termination of pregnancy.
Manages high level procedural skills	<ul style="list-style-type: none"> • Counsels on and takes consent for high level interventional procedures.
Is able to support non-subspecialist colleagues in the management of pregnancies complicated by fetal problems	<ul style="list-style-type: none"> • Provides subspecialist advice to non-subspecialist colleagues. • Works in partnership with referring clinicians to provide joint care.
Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective practice 	<ul style="list-style-type: none"> • RCOG and other Learning

<ul style="list-style-type: none"> • TO2 (includes SO) • OSATs: <ul style="list-style-type: none"> ○ CVS ○ Amniocentesis ○ Fetal ECHO • Mini-CEX (to include fetocide). • Procedural log • CbD 	<ul style="list-style-type: none"> • Attendance at regional national meetings and training courses • Observation of, and reflection on high level fetal procedures • Observation of neonatal surgery • Attendance at local/regional MDT meetings • Clinical attachments on tertiary level NNU and/or paediatric ITU • Attendance at paediatric follow up clinics • Relevant audit/ quality improvement project
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Knowledge criteria

- Embryology of all key fetal anatomical systems.
- Pathology and epidemiology of all major anomalies affecting each fetal system in addition to those covered in CiP 2 and 3, including as a minimum:
 - encephalocoele, holoprosencephaly, microcephaly, intracranial mass
 - cardiac tumours
 - renal cystic disease, duplex kidney, bladder/cloacal exstrophy
 - laryngeal/tracheal atresia, pulmonary sequestration, pleural effusion
 - meconium ileus, hepatic calcification/mass, abdominal cyst, ascites
 - cystic hygroma, micrognathia, macroglossia, anophthalmia, neck mass
 - skeletal dysplasias (early or late onset), polydactyly, sirenomelia, sacral agenesis, hemivertebra
 - fetal akinesia/hypokinesia sequence
 - sacrococcygeal teratoma
- Diagnostic features of each condition their differential diagnosis and the chance of associated structural, chromosomal and syndromic associations.
- Outcomes, prognoses and recurrence risks associated with each of these conditions/abnormalities.
- Antenatal management, intrapartum care and immediate postnatal management of each condition.
- Conditions amenable to prenatal therapy, e.g. fetal arrhythmias, spina bifida, CDH, and how these treatments are administered and the complications of them.
- The additional information which might be gained by use of 3D imaging and/or fetal MRI.
- The differential diagnosis for fetal hydrops, and how to address this systematically.
- The differential diagnosis for fetal anaemia.
- Which red cell antibodies carry the greatest chance of haemolytic disease of the fetus and newborn, what thresholds there are for commencing surveillance for fetal anaemia, when to refer for fetal blood sampling and transfusion, how this is performed, and how the newborn is managed when chance of haemolytic disease.
- How platelet antibody-antigen combinations commonly cause neonatal alloimmune thrombocytopenia and what the outcomes can be, and how the chance of harm can be reduced.
- The embryology of normal twinning and the incidence and pathogenesis of abnormal twinning, resulting in TTTS, s-FGR, TRAP sequence, and conjoined twins.

- When treatment is indicated for these conditions, and the pros and cons of treatment options
- A differential diagnosis for selective fetal growth restriction and the classification of selective fetal growth restriction in monochorionic gestations, and the impact that chorionicity has on outcomes and interpretation of surveillance.
- The differential risks associated with co-twin death in monochorionic and dichorionic multifetal gestations.
- The outcomes of higher order pregnancies, and the impact on these of multifetal pregnancy reduction.
- The techniques used for selective termination of pregnancy for discordant anomalies in multiple gestations, and the risks involved.
- UK law on termination of pregnancy, including justifying criteria, gestational limits and when to perform fetocide, and ethical issues around late amniocentesis / late termination of pregnancy.
- The significance of signs of life following a termination.
- The various methods of termination of pregnancy, and the pros and cons of each method.
- The indications, methods, potential benefits and complications of the following high-level fetal medicine procedures; vesicocentesis, pleural and vesical shunt placement, placental laser, radiofrequency ablation, cord occlusion, fetal blood transfusion
- The structure of the local paediatric network, including surgical services.
- Paediatric network guidelines for the management of newborn problems, including frameworks around extreme prematurity, and antenatal parallel planning.

SST MFM CiP 2: The doctor can independently manage, in conjunction with specialists from other disciplines, pregnancies complicated by the widest range and most complex of maternal medical conditions, and contributes to the design and leadership of a Maternal Medicine Network.

Key Skills	Descriptors
Manages the care of the pregnant woman presenting with any co-existing medical problem, including those with rare disorders and those with severe manifestations or complications of more common problems	<ul style="list-style-type: none"> • Extends further the key skills described in the APC and MM ATMs to provide pre-pregnancy counselling, antenatal, intrapartum and postnatal care to women with highly complex medical problems (category C). • Can lead on the care provision of pregnant women receiving joint care from the non-subspecialist and the tertiary level team. • Provides constructive advice to the non-subspecialist obstetrician and physician.
Lead multidisciplinary meetings	<ul style="list-style-type: none"> • Demonstrate the ability to liaise with other disciplines to ensure women receive optimum care for their medical conditions despite their pregnancy status. • Understand and advise the MDT on the risks and benefits of different methodologies of imaging and therapeutics.

	<ul style="list-style-type: none"> • Understand, advise and signpost the MDT on prescribing in pregnancy.
Provides regional clinical leadership	<ul style="list-style-type: none"> • Leads on the coproduction of guidelines and standards which aim to optimise the identification, referral and management of pregnant women, or those who wish to become pregnant, with co-existing medical conditions, and those who develop medical illness during their pregnancy. • Designs and contributes to the monitoring of these standards. • Co-ordinates and contributes to education and training of the multi-disciplinary team working within the Maternal Medicine Network. • Ensures equal access to specialised care for all women • Recognises the increased vulnerability of women from ethnic minorities and socially deprived groups in the design of systems.
Engages with other stakeholders	<ul style="list-style-type: none"> • Works with relevant networks (eg maternity and perinatal mental health networks, fetal medicine services, neonatal operational delivery networks). • Works with high level management organisations and bodies such as Local Maternity Services, Integrated Care Systems, NHSE/I and maternity strategic clinical networks. • Liaises and works in partnership with other contributors to the care pathway eg ambulance trusts, GPs and health visitors.
Evidence to inform decision	
<ul style="list-style-type: none"> • CbD • Mini-CEX • Reflective practice • TO2 (includes SO) 	<ul style="list-style-type: none"> • RCOG Learning • Anonymised examples of pregnancy care plans for women with medical disorders • Attendance at specialist courses and conferences • Attendance at adult medical clinics • Attendance at obstetric anaesthetic clinics • Local and Deanery Teaching • Attendance and leading of Maternal Medicine MDTs
Knowledge criteria	
<ul style="list-style-type: none"> • Structure of local maternal medicine networks and regional thresholds for referral and MDT involvement. 	

- The pathology, prevalence, presentation, diagnosis, risks and best practice management for women who have significant medical problems (pre-pregnancy, antenatal and postnatal) that predate or arise in pregnancy or in the puerperium examples of category C of medical problems outlined in the National Maternal Medicine Service Specification:
 - Heart: Pulmonary hypertension, severe left ventricular ejection fraction <45%, complex congenital heart disease (uni-ventricular system including Fontan, severe aortic and mitral valve stenosis, mechanical valve), aortic dilation, ventricular arrhythmias, new ischaemic heart disease and heart transplant.
 - Lung: Sickle chest crisis, restrictive lung disease with FVC <50%, neuromuscular disorder with respiratory muscle involvement e.g. Myasthenia gravis, Guillain Barre syndrome, lung transplant and pulmonary vasculitis.
 - GI and liver: portal hypertension, complex pancreatitis, active malignancy, cirrhosis, decompensated liver disease and liver transplant.
 - Endocrine: primary and secondary hyperaldosteronism, phaeochromocytoma, Cushing's, acromegaly, metabolic disorder (e.g. glycogen storage disorder), hypo- and hyperparathyroidism.
 - Kidney: active lupus nephritis, new renal vasculitis, pre-pregnancy CKD stage 4 and 5, renal dialysis, simultaneous renal and pancreatic transplant.
 - Rheumatological: large and medium vasculitis, vascular Ehlers-Danlos.
 - Neurological: All epilepsy without local access to a combined clinic including specialist neurology and obstetrics, symptomatic raised intracranial pressure, unstable CVM/AVM, recent intracerebral bleed (<2 years), acute stroke, new onset Guillain-Barre syndrome, new diagnosis or recent exacerbation of myasthenia gravis, active CNS malignancy and myotonic dystrophy.
 - Haematological: complex thalassaemia, current extensive VTE, active haematological malignancy, clotting deficiency (Factor II, X and combined deficiency), Von Willebrand disease type II and III, Carriers of haemophilia with male or unknown gender of fetus (including knowledge of when to offer late amniocentesis, and intrapartum management of such cases), transfusion dependent disease, Antiphospholipid syndrome with extensive arterial events, Antithrombin deficiency, Moderate/severe platelet function disorder or with platelet count <100.
- Findings of relevant national reports including MBRRACE report and recommendations.
- How pregnancy induces significant changes in all aspects of physiology in pregnancy and the postpartum period and the further effect of additional medical conditions.
- How the medical problem may deteriorate acutely during pregnancy, how this might present, and how it would be managed.

SST MFM CiP3: The doctor can apply knowledge of clinical and molecular genetics to the management of complex pregnancy.

Key Skills	Descriptors
Manages a pregnancy at elevated chance of, or affected by, aneuploidy	<ul style="list-style-type: none"> • Takes an appropriate history and arranges appropriate parental investigations.

	<ul style="list-style-type: none"> • Communicates effectively with women and their partners/families, regarding risk, screening and testing options. • Manages the care of a woman with a personal or family history of a chromosomal abnormality, including assessment of risk, prenatal diagnostic options, and further management options after testing. • Manages an ongoing aneuploid pregnancy, including plans for birth and a multidisciplinary approach to the care of the newborn. • Recognises when advice from, and referral to, clinical genetics services is needed.
<p>Manages a pregnancy with a chance of a single gene disorder in a structurally normal fetus</p>	<ul style="list-style-type: none"> • Takes an appropriate history, constructs a family tree and arranges appropriate parental investigations. • Communicates effectively with women and their partners/families, regarding risk, screening and testing options. • Manages the care of a woman with a personal or family history of a single gene disorder including assessment of risk, prenatal diagnostic options, and further management options after testing. • Manages an ongoing pregnancy affected by a single gene disorder, including communication and planning with paediatric services. • Recognises when advice from, and referral to, clinical genetics services is needed.
<p>Diagnoses and manages genetic and syndromic disorders in the structurally abnormal fetus</p>	<ul style="list-style-type: none"> • Carries out appropriate counselling and management in families with a previous child with multiple anomalies or syndromic disorder. • Accesses online highest quality information regarding very rare syndromic and genetic problems. • Manages the care of a woman with a personal or family history of syndromic anomaly, providing information, screening and prenatal testing options. • Uses a dysmorphology database to reach a differential diagnosis. • Recognises when referral is indicated for more specialised counselling and genetic advice. • Provides options for management in an affected pregnancy, including termination of pregnancy, without judgement. • Manages an ongoing pregnancy, including planning for birth and a multidisciplinary approach to the care of the

	newborn.
Requests and uses a wide range of molecular, cytogenetic and biochemical tests for prenatal diagnosis	<ul style="list-style-type: none"> • Is able to take non-directive informed consent for performing these tests. • Is able to interpret and communicate the results of these tests and know when a multidisciplinary approach is required. • Identifies the role of genomic testing in both maternal and fetal medicine, in pregnancy or ideally in pre-conception counselling <ul style="list-style-type: none"> ○ Maternal Medicine – Expanding research towards of genetic prediction tests of obstetric disease processes such as pre-eclampsia, gestational diabetes, obstetric cholestasis ○ Role of genomics in preconception care for women with rare genetic disease and pregnancy care for women with rare genetic disease, especially in affected families seeking IVF, planning surrogacy, or carrier screening. ○ Role of whole genome testing vs whole exome sequencing.
Evidence to inform decision	
<ul style="list-style-type: none"> • Reflective practice • Local and Deanery Teaching • TO2 (includes SO) • Mini-CEX • CbD 	<ul style="list-style-type: none"> • NOTSS • RCOG Learning
Knowledge criteria	
<ul style="list-style-type: none"> • Normal chromosome structure and function. • Gene structure and function, including gene control, mechanisms and effects of mutation, genetic heterogeneity. • Patterns of genetic inheritance and susceptibility, expression and penetrance, multifactorial and mitochondrial inheritance. • Cell division (meiosis and mitosis), and abnormalities arising from these processes. • Types of aneuploidy, including structural rearrangements, deletions and common. microdeletions, trisomies, sex chromosome anomalies (including Monosomy X, Klinefelter syndrome and Triple X), extra markers, mosaicism (fetal and placental), uniparental disomy, triploidy. • The underlying genetic aetiology of the single gene disorders mentioned in CiP 2 and 3, AND the following conditions: <ul style="list-style-type: none"> ○ myotonic dystrophy ○ Huntington’s disease 	

- Haemoglobinopathies, haemophilia and other common bleeding disorders
- Inborn errors of metabolism
- Detailed knowledge of the following syndromes and associations:
 - DiGeorge
 - Fryn's
 - Beckwith-Wiedemann
 - Meckel Gruber
 - Smith-Lemli-Opitz
 - VATER/VACTERL
- The pre- and postnatal phenotypes of these common aneuploidies, single gene disorders, and syndromes, including prognosis.
- Methods of screening for aneuploidy, including ultrasound, biochemical and non-invasive DNA based techniques.
- The statistical terms relevant to screening, including sensitivity, specificity, false positive rates, positive predictive rates, and how these are inter-dependent.
- The meaning of likelihood ratios in risk calculations.
- Current screening programmes, including national implementation, audit, quality control, the National Screening Committee and regional screening co-ordinators.
- How recurrence risks for chromosomal and single gene disorders are derived.
- Prenatal testing options, both invasive and non-invasive, including ultrasound, MRI, NIPT, amniocentesis, chorionic villus sampling, fetal blood sampling.
- Laboratory techniques for analysing parental and fetal samples, including quantitative PCR, FISH, karyotyping, microarray, mutational analysis, sequencing (exome, or whole genome), enzymatic analysis, analyte assessment.

SECTION 2: PROCEDURES

Procedures marked with * require three summative competent OSATS

<i>Procedures</i>	<i>Level by end of training</i>	<i>CIP 1</i>
CVS*	5	X
Amniocentesis*	5	X
Fetal ECHO*	5	X

SECTION 3: GMC GENERIC PROFESSIONAL CAPABILITIES

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 SST MFM CiPs

SST MFM CIP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
1: The doctor is able to lead in providing care to women with pregnancies complicated by the full range of fetal concerns.	X	X	X		X	X
2: The doctor can independently manage, in conjunction with specialists from other disciplines, pregnancies complicated by the widest range and most complex of maternal medical conditions, and contributes to the design and leadership of a Maternal Medicine Network		X	X		X	X
3: The doctor can apply knowledge of clinical and molecular		X	X	X	X	X

SST MFM CIP	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
genetics to the management of complex pregnancy.						

Research - Subspecialty Training

SECTION 1: CAPABILITIES IN PRACTICE

CIP 4: The doctor is able to engage with research and promote innovation within their subspecialty.	
Key Skills	Descriptors
Demonstrates research skills	<ul style="list-style-type: none"> • Is able to demonstrate practice in healthcare research and the different methodologies within their subspecialty. • Shows continued engagement in GCP and R&D processes • Engages in ethics and governance processes within research, demonstrating they are able to follow guidelines on ethical conduct and consent for research. • Demonstrates involvement in informatics, statistical analysis and emerging research areas within their subspecialty. • Shows engagement with national trials within their subspecialty, including patient recruitment, trial monitoring and adverse event reporting • Shows understanding of the role of Public and Patient involvement within clinical trials • Is able to discuss clinical trials with, and facilitate recruitment of patients within their subspecialty • Has the ability to translate research into clinical practice within their subspecialty
Demonstrates critical thinking	<ul style="list-style-type: none"> • Is able to develop and critically appraise a research protocol • Is able to critically evaluate clinical trial data to establish the clinically significant outcomes and relevance for clinical practice within their subspecialty • Is able to interpret research findings, reflect on the potential impact on their clinical practice and share this with colleagues and patients • Can develop and critically appraise a Patient Information Leaflet • Is able to interpret research findings within their subspecialty and discuss these when taking informed treatment consent

Innovates	<ul style="list-style-type: none"> Demonstrates how their clinical practice has developed from innovative research within their subspecialty Is able demonstrate engagement with the introduction of any innovations within their subspecialty, including governance and costs
Evidence to inform decision	
<ul style="list-style-type: none"> National Teaching / Courses Critical appraisal of protocols/papers Subspecialty journal club presentations GCP re-certification Participation, including recruitment for national multicentre trials Preparation research protocol / grant applications Oral, and/or poster presentations at national /international subspecialty meetings 	<ul style="list-style-type: none"> SIPM in Clinical Research Peer reviewed original research publications relevant to their subspecialty A higher degree such as a PhD or research MD

SECTION 2: PROCEDURES

There are no procedures in this SST Research CiP.

SECTION 3: GMC GENERIC PROFESSIONAL CAPABILITIES

Mapping to GPCs
<p>Domain 1: Professional values and behaviours</p> <p>Domain 2: Professional skills</p> <ul style="list-style-type: none"> Practical skills Communication and interpersonal skills Dealing with complexity and uncertainty <p>Domain 3: Professional knowledge</p> <ul style="list-style-type: none"> Professional requirements National legislative structure The health service and healthcare system in the four countries <p>Domain 5: Capabilities in leadership and team working</p> <ul style="list-style-type: none"> Promoting a culture of learning and academic and professional critical enquiry <p>Domain 6: Capabilities in patient safety and quality improvement</p> <ul style="list-style-type: none"> Quality improvement <p>Domain 8: Capabilities in education and training</p> <p>Domain 9: Capabilities in research and scholarship</p>