

## **ANTENATAL CARE**

# Module 8 : Antenatal Care

## Learning outcomes:

- To understand and demonstrate appropriate knowledge, skills and attitudes in relation to antenatal care.

Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/assessment
<ul style="list-style-type: none"> <li>■ Preconception care</li> <li>■ Purposes and practice of antenatal care</li> <li>■ Recognition of domestic violence</li> <li>■ Problems of teenage pregnancy</li> <li>■ Awareness of drug and alcohol misuse</li> <li>■ Management of normal pregnancy, birth and puerperium</li> <li>■ Placental abnormalities and diseases</li> <li>■ Genetic modes of inheritance, common genetic conditions and the diagnosis thereof</li> <li>■ Epidemiology, aetiology, pathogenesis, diagnosis, prevention, management, delivery, complications of:               <ul style="list-style-type: none"> <li>■ pregnancy-induced hypertension</li> <li>■ haemorrhage</li> <li>■ preterm prelabour rupture of membranes</li> <li>■ multiple pregnancy</li> <li>■ malpresentation</li> <li>■ fetal growth restriction:</li> <li>■ fetal haemolysis</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Undertake pregnant and nonpregnant abdominal examination</li> <li>■ Take obstetric history and make relevant referral in cases of domestic violence</li> <li>■ Conduct booking visit</li> <li>■ Conduct follow-up visits</li> <li>■ Arrange appropriate investigations</li> <li>■ Manage:               <ul style="list-style-type: none"> <li>■ growth restriction</li> <li>■ mode of delivery after caesarean section</li> <li>■ multiple pregnancy</li> <li>■ antepartum haemorrhage</li> <li>■ malpresentation</li> <li>■ preterm prelabour rupture of the fetal membranes</li> <li>■ reduced fetal movements</li> <li>■ prolonged pregnancy</li> <li>■ drug and alcohol abuse in pregnancy</li> </ul> </li> <li>■ Observe:               <ul style="list-style-type: none"> <li>■ external cephalic version</li> <li>■ cervical cerclage</li> </ul> </li> <li>■ Counsel about:               <ul style="list-style-type: none"> <li>■ screening for Down syndrome</li> <li>■ genetic disease</li> <li>■ fetal abnormality</li> <li>■ haemolytic disease</li> <li>■ infection</li> <li>■ mode of delivery</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Have the skills to liaise with midwives and other health professionals to optimise care of the woman</li> <li>■ Demonstrate the skills to empower and inform woman to make appropriate choices for herself and her family in pregnancy and childbirth</li> <li>■ Demonstrate an ability to explain correctly and place in context for the woman:               <ul style="list-style-type: none"> <li>■ detection rates and limitations of anomaly screening</li> <li>■ principles of screening for neural tube defects, Down syndrome and haemoglobinopathies</li> <li>■ genetic disorders and their inheritance, with examples such as Tay-Sachs disease, cystic fibrosis and thalassaemia</li> <li>■ effects upon fetus and neonate of infections during pregnancy, including HIV, measles, chickenpox, rubella, cytomegalovirus, parvovirus and toxoplasmosis</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Appropriate postgraduate educational courses, including CTG interpretation courses</li> <li>■ Perinatal morbidity and mortality meetings</li> <li>■ Risk assessment meetings</li> <li>■ StratOG.net: Antenatal Care e-tutorials</li> <li>■ Useful websites and postoperative care e-tutorials:               <ul style="list-style-type: none"> <li>■ <a href="http://www.nice.org.uk">www.nice.org.uk</a></li> <li>■ <a href="http://www.rcog.org.uk">www.rcog.org.uk</a></li> <li>■ <a href="http://www.sign.ac.uk">www.sign.ac.uk</a></li> <li>■ <a href="http://www.show.scot.nhs.uk/spcerh">www.show.scot.nhs.uk/spcerh</a></li> <li>■ <a href="http://www.hkcg.org.hk/">www.hkcg.org.hk/</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ MRCOG Part 2</li> <li>■ Logbook</li> <li>■ Local meetings attended</li> <li>■ Case book</li> <li>■ Audit project</li> </ul>

Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/assessment
<ul style="list-style-type: none"> <li>■ prolonged pregnancy</li> <li>■ congenital malformation</li> <li>■ social and cultural factors</li> <li>■ Immunology and immunological disorders affecting pregnancy</li> <li>■ Basic obstetric ultrasound</li> <li>■ Basic fetal and placental anatomy to define fetal orientation</li> <li>■ Identify features: head, chest, abdomen</li> <li>■ Transvaginal confirmation viability &lt; 14 weeks</li> <li>■ Assessment of liquor volume</li> </ul>		<ul style="list-style-type: none"> <li>■ Show awareness of the need to identify and deal with domestic violence and have a working knowledge of child protection issues as they relate to the practice of obstetrics and gynaecology</li> </ul>		
<b>ULTRASOUND</b>				
<ul style="list-style-type: none"> <li>■ Role and use of ultrasound in antenatal care (refer to Module 16 for principles of ultrasound examination)</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Assess fetal wellbeing by interpretation of CTG and ultrasound</b></li> <li>■ Determine fetal viability by transabdominal ultrasound, if less than 14 weeks refer for transvaginal scanning to confirm absent fetal heart beat</li> <li>■ Perform a transabdominal scan after 14 weeks of gestation</li> <li>■ Identify features of the head, chest, abdomen</li> <li>■ Determine fetal lie and presentation</li> <li>■ Determine placental site</li> <li>■ Assess liquor volume by deepest pool</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Demonstrate the use of appropriate referral pathways</b> and local protocols if abnormal ultrasound findings are suspected</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Mandatory education and training sessions</b></li> <li>■ Theoretical accredited course (local or RCOG)</li> <li>■ Supervised structured clinical learning sessions</li> <li>■ Observation by attendance at sessions in an obstetric ultrasound department, including anomaly and fetal assessment scans</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>HA ultrasound training course</b></li> <li>■ MRCOG Part 2</li> </ul>

## Appendix to Curriculum Module 8: details of knowledge criteria

### Preconception care:

- Sources of detailed information accessed by patients
- Effect of pregnancy upon disease
- Effect of disease upon pregnancy
- Principles of inheritance of disease
- Teratogenesis
- Drugs and pregnancy

### Purposes and practice of antenatal care:

- Arrangements for and conduct of booking visit
- Arrangements for and conduct of follow-up visits
- Use of imaging techniques
- Screening for abnormality
- Health education
- Liaison between health professionals
- Recognition of domestic violence

### Physiology and management of normal:

- Pregnancy
- Childbirth, including delivery outside specialist unit
- Puerperium, including lactation
- Neonate, including feeding

### Placental:

- Abnormalities (shape, size, implantation)
- Chorioamnionitis
- Infarction
- Chorioangioma
- Multiple pregnancy
- Intrauterine growth restriction
- Cord abnormalities
- Trophoblastic disease

### Immunology:

- Immunological pregnancy tests
- Rhesus and other isoimmunisation
- Autoimmune diseases

### Preterm prelabour rupture of membranes:

- Fetal pulmonary maturity
- Therapy (steroids, antibiotics, tocolytics)
- Infection (risks, management)
- Delivery (induction of labour, timing, mode)

### Haemorrhage:

- Placental abruption
- Placenta praevia
- Vasa praevia
- Placenta accreta
- Trauma

### Multiple pregnancy:

- Zygosity
- Impact of assisted reproduction techniques
- Placentation
- Diagnosis
- Management (antenatal, intrapartum, postnatal)
- Special procedures (prenatal diagnosis, monitoring)
- Feeding
- Higher order multiple pregnancies (counselling, community care)

## Appendix to Curriculum Module 8: details of knowledge criteria

### Malpresentation:

- Types (breech, brow, face, shoulder, variable lie)
- Diagnosis
- Management (antenatal, intrapartum)
- Mode of delivery

### Fetal growth restriction:

- Aetiology (maternal, placental, fetal)
- Diagnosis (clinical, imaging, biochemical, genetic)
- Monitoring (ultrasound, cardiotocography)
- Delivery (timing, method)
- Prognosis (fetal, neonatal)

### Genetic:

- Modes of inheritance (Mendelian, multifactorial)
- Cytogenetics
- Phenotypes of common aneuploidies (Down syndrome, Edward syndrome, Patau syndrome, Turner syndrome, Klinefelter syndrome, triple X, multiple Y)
- Translocation
- Miscarriage
- Molecular genetics (DNA transcription, DNA translation, DNA blotting techniques, gene amplification techniques, principles of gene tracking)
- Counselling (history taking, pedigree analysis)
- Population screening (genetic disease, congenital malformations)
- Antenatal diagnosis (chromosomal defects, inborn errors of metabolism, neural tube defects, other major structural abnormalities)
- Management: referral to specialist team, antenatal intervention, delivery, neonatal investigation, neonatal care (medical, surgical)

### Epidemiology, aetiology, pathogenesis, diagnosis, prevention, management, delivery, complications, prognosis with regard to the following:

#### Pregnancy-induced hypertension:

- Definitions
- Aetiological theories
- Prophylaxis
- Assessment of severity
- Consultation
- Therapy
- Delivery (timing, method)
- Complications (eclampsia, renal, haemorrhagic, hepatic, fetal)

#### Hypotensive disorders:

- Hypovolaemia
- Sepsis
- Neurogenic shock
- Cardiogenic shock
- Anaphylaxis
- Trauma
- Amniotic fluid embolism
- Thromboembolism
- Uterine inversion

#### Fetal haemolysis:

- Relevant antigen–antibody systems
- Prevention
- Fetal pathology
- Diagnosis
- Assessment of severity
- Intrauterine transfusion (indications, techniques, referral)
- Delivery (timing, method)
- Counselling

## Appendix to Curriculum Module 8: details of knowledge criteria

### Prolonged pregnancy:

- Risks
- Fetal monitoring
- Delivery (indications, methods)

### Congenital malformation:

- Screening
- Amniotic fluid volume (polyhydramnios, oligohydramnios)
- Management: diagnosis, consultation, viability, delivery (time, place, method), counselling
- Specific abnormalities:
  - head (anencephaly, microcephaly, encephalocele, hydrocephalus, hydranencephaly, holoprosencephaly)
  - skeleton (spina bifida, phocomelia, chondrodysplasia, intrauterine amputation)
  - heart (major defects, other defects)
  - lungs (pulmonary hypoplasia)
  - urinary (renal agenesis, polycystic kidneys, urinary tract obstruction)
  - genital (intersex, genital tract abnormalities, ovarian cyst)
  - gastrointestinal (abdominal wall defects, oesophageal atresia, duodenal atresia, diaphragmatic hernia, bowel obstruction)
  - other (cystic hygroma)
- Other fetal disorders:
  - non-haemolytic hydrops fetalis
  - tumours
  - pleural effusion
  - fetal bleeding

### Social and cultural factors:

- Effect upon pregnancy outcome
- Single parenthood
- Teenage motherhood
- Parent–baby relationships (factors promoting, factors interfering)
- Bereavement counselling

## Appendix to Curriculum Module 8: details of knowledge criteria

### Principles of ultrasound:

- Basic physics
- Safety
- Relationship between two dimensional screen image and three dimensional object

### Ultrasound assessment of fetal wellbeing:

- Fetal biometry (pregnancy dating, gestational age, fetal growth)
- Biophysical profile
- Use of Doppler to assess blood flow (fetus, uterus)
- Indications and limitations of scanning in late pregnancy
- Ultrasound surveillance in twin pregnancy

### Techniques of fetal anomaly scanning and non-invasive fetal diagnosis:

- Use of nuchal translucency measurements to identify fetuses at high risk of Down syndrome
- Combination of ultrasound and other risk markers to create an individual risk profile for each woman

### Invasive procedures:

- Amniocentesis
- Chorionic villus sampling
- Placentesis
- Cordocentesis

### Identify fetal position and fetal heart in later pregnancy and to create a three-dimensional image of the fetus in the mind:

- Identify the fetus
- Determine the lie of the fetus
- Be familiar with manoeuvres to identify position of fetal heart
- Identify fetal heart pulsations (use of transvaginal ultrasound at less than 14 weeks)
- Demonstrate fetal heart pulsations to mother

### Orientate ultrasound findings in the second and third trimesters and orientate the fetus correctly in the uterus:

- Determine lie and position of fetus
- Identify features of the head
- Identify features of the chest
- Identify features of the abdomen
- Locate best position to measure abdominal circumference
- Identify the spine
- Identify the limbs
- Perform basic fetal measurements (e.g. those of biparietal diameter, head circumference, abdominal circumference, femur length, estimation of fetal weight)

Localise the placenta in the third trimester:

- Find the placenta
- Describe its features:
  - texture
  - echolucent areas
  - chorionic plate
  - echogenicity
- Define its upper and lower borders
- Relate it to other features such as bladder and cervix

## Module 8 : Antenatal Care

Fill in as a record of experience.

Skills	Competence level							
	<input type="checkbox"/> Basic training		<input type="checkbox"/> Intermediate training		<input type="checkbox"/> Advanced training		<input type="checkbox"/> Not required	
	Observation		Direct supervision		Independent practice			
	Date	Signature of trainer	Date	Signature of trainer	Date	Signature of trainer		
Conduct a booking visit								
Conduct a follow up visit								
Arrange appropriate investigations								
<b>Assess fetal wellbeing by interpretation of:</b>								
Maternal history								
CTG								
Ultrasound assessment								
<b>Manage:</b>								
Oligohydramnios/polyhydramnios								
Growth restriction								
Multiple pregnancy								
Malpresentation								
Reduced fetal movements								
Prolonged pregnancy								
Drug and alcohol problems in pregnancy								
Infections in pregnancy								
Preterm premature rupture of the membranes								
Antepartum haemorrhage								

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Skills	Competence level					
			<input type="checkbox"/> Basic training	<input type="checkbox"/> Intermediate training	<input type="checkbox"/> Advanced training	<input type="checkbox"/> Not required
	Observation		Direct supervision		Independent practice	
	Date	Signature of trainer	Date	Signature of trainer	Date	Signature of trainer
External cephalic version						
Insertion of cervical cerclage						
<b>Counsel about:</b>						
Screening for Down syndrome						
Screening for other fetal abnormalities						
Haemolytic disease						
Mode of delivery after caesarean section						
Cervical cerclage						
<b>Basic obstetric ultrasound:</b>						
Identify features head, chest, abdomen						
Transvaginal confirmation viability <14 weeks						
<b>Third-trimester scanning:</b>						
Viability						
Fetal presentation						
Assess liquor volume by deepest pool						
Placental localisation						

**Training courses or sessions**

Title	Signature of educational supervisor	Date
CTG Interpretation		
Basic obstetric ultrasound theoretical course		

**Authorisation of signatures (to be completed by the clinical trainers)**

Name of clinical trainer (please print)	Signature of clinical trainer

**COMPLETION OF MODULE 8**

**I confirm that all components of the module have been successfully completed:**

Date	Name of educational supervisor	Signature of educational supervisor