



## Module 3: Ultrasound assessment of fetal size, fetal wellbeing and the placenta

### Learning outcomes

To be able to carry out appropriate:

- ultrasound assessment of fetal size and growth/lie/presentation
- ultrasound assessment of fetal wellbeing
- counselling and management of a small and/or growth restricted fetus
- referral, where appropriate, of cases of preterm fetal compromise
- assessment, counselling and management of placenta praevia

Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/ Assessment
<p><b>Principles of ultrasound examination</b></p> <ol style="list-style-type: none"> <li>1. Physics</li> <li>2. Safety</li> <li>3. Machine set-up and operation</li> <li>4. Patient care</li> <li>5. Principles of report writing</li> <li>6. Consent</li> <li>7. Cultural Diversity</li> </ol>	<p>Understand the principles of conducting a safe and appropriate ultrasound examination</p> <p>Use an ultrasound machine competently and independently</p>	<p>Safe use of the ultrasound machine</p> <p>Appropriate care of the patient during examination</p>	<p>Course including both:</p> <p>Theory</p> <p>Practical demonstration of machine use and reporting</p>	<p>Certificate of attendance at course</p> <p>Case discussion in clinic</p>



Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/ Assessment
<p><b>Documentation of scan</b></p> <p>Understand need for accurate documentation of scan</p> <p>Record appropriate images</p>	<p>Record scan findings clearly and accurately and keep appropriate hard copy or video records of anomalies.</p>	<p>Communicate scan findings to other health professionals</p>	<p>Supervised structured clinical learning sessions</p>	<p><b>OSATS:</b></p> <p>Fetal biometry</p> <p>Anomaly scan including recording images of fetus</p> <p>Counselling of normal scan findings with parents</p> <p>Counselling of abnormal scan findings with parents</p>



Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/ Assessment
<p><b>Biometry</b></p> <p>8. Fetal growth</p> <ul style="list-style-type: none"> <li>• Physiology</li> <li>• Pathology               <ul style="list-style-type: none"> <li>- Maternal</li> <li>- Placental</li> <li>- Fetal</li> </ul> </li> </ul> <p>9. Fetal biometry</p> <ul style="list-style-type: none"> <li>• Anatomical landmarks</li> <li>• Reference charts</li> <li>• Interpretation (including variability)</li> <li>• Calculation and value of;               <ul style="list-style-type: none"> <li>- Ratios</li> <li>- Estimated fetal weight</li> </ul> </li> </ul> <p><b>10. SGA vs FGR</b></p> <ul style="list-style-type: none"> <li>• Definition (fetal &amp; neonatal)</li> <li>• Outcome – impact on mortality and morbidity</li> </ul>	<p>Be able to perform and interpret standard fetal measurements:</p> <ul style="list-style-type: none"> <li>• HC (BPD)</li> <li>• AC</li> <li>• FL</li> <li>• EFW</li> </ul> <p>Manage a healthy SGA fetus including:</p> <ul style="list-style-type: none"> <li>• Appropriate follow up</li> <li>• Referral for further assessment</li> <li>• Plan delivery</li> </ul> <p>Manage a compromised SGA fetus including:</p> <ul style="list-style-type: none"> <li>• Appropriate follow up</li> <li>• Referral for further assessment</li> <li>• Plan delivery</li> </ul>	<p>Conduct scan to assess fetal size / growth to appropriate standard</p> <p>Communicate scan findings to patient and other professionals</p>	<p>Mandatory education and training sessions</p> <p>Supervised structured clinical learning sessions</p> <p>Personal study – Textbooks of obstetric ultrasound and relevant reviews/papers</p> <p>Green top guideline 'Investigation and management of the SGA fetus'.</p> <p>The investigation and Management of the Small-for-Gestational-Age Fetus (31) – Nov 2002</p>	<p>Log of experience</p> <p>Fetal biometry</p> <p>Case discussion in clinic</p> <p><b>OSATS:</b></p> <p>Anomaly scan including recording images of fetus</p> <p>Counselling of scan findings with parents</p>



Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/ Assessment
<p><b>Amniotic fluid</b></p> <ol style="list-style-type: none"> <li>1. Amniotic fluid volume <ul style="list-style-type: none"> <li>• Physiology</li> <li>• Change with gestation</li> <li>• Pathology</li> </ul> </li> <li>2. Ultrasound measurement <ul style="list-style-type: none"> <li>• Subjective vs objective</li> <li>• Max vertical pocket / AFI</li> <li>• Reference charts</li> <li>• Interpretation (including variability)</li> </ul> </li> <li>3. Oligohydramnios <ul style="list-style-type: none"> <li>• Definition</li> <li>• Outcome</li> </ul> </li> <li>4. Polyhydramnios</li> <li>5. Outcome</li> </ol>	<p>Be able to perform and interpret assessment of AFV using ultrasound</p> <p>Be able to incorporate assessment of AFV into global assessment of fetal wellbeing and manage accordingly including:</p> <ul style="list-style-type: none"> <li>• Appropriate follow up</li> <li>• Referral for further assessment</li> <li>• Plan delivery</li> </ul>	<p>Conduct scan to assess amniotic fluid volume to appropriate standard</p> <p>Communicate scan findings to patient and other professionals</p>	<p>Mandatory education and training sessions</p> <p>Supervised structured clinical learning sessions</p> <p>Personal study – Textbooks of obstetric ultrasound and relevant reviews/papers</p> <p>Green top guideline 'Investigation and management of the SGA fetus'.</p>	<p>Log of experience</p> <p>Case discussion in clinic</p> <p><b>OSATS:</b> Ultrasound assessment of maternal and fetal wellbeing</p>



Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/ Assessment
<p><b>Umbilical artery Doppler</b></p> <p><b>1. Fetoplacental circulation</b></p> <ul style="list-style-type: none"> <li>• Anatomy</li> <li>• Pathology in SGA and FGR</li> </ul> <p><b>2. Ultrasound assessment</b></p> <ul style="list-style-type: none"> <li>• Indices</li> <li>• Reference charts</li> <li>• Interpretation (including variability)</li> </ul> <p><b>3. Abnormal UA Doppler</b></p> <ul style="list-style-type: none"> <li>• Classification</li> <li>• Outcome</li> </ul>	<p>Be able to perform and interpret UA Doppler</p> <p>Be able to incorporate UA Doppler into global assessment of fetal wellbeing and manage accordingly including:</p> <ul style="list-style-type: none"> <li>• Appropriate follow up</li> <li>• Referral for further assessment</li> <li>• Plan delivery</li> </ul>	<p>Conduct scan to assess UA Doppler to appropriate standard</p> <p>Communicate UA Doppler result to patient and other professionals</p>	<p>Mandatory education and training sessions</p> <p>Supervised structured clinical learning sessions</p> <p>Personal study – Textbooks of obstetric ultrasound and relevant reviews/papers</p> <p>Green top guideline 'Investigation and management of the SGA fetus'.</p>	<p>Log of experience</p> <p>Case discussion in clinic</p> <p><b>OSATS:</b> Ultrasound assessment of maternal and fetal wellbeing</p>

Knowledge criteria	Clinical competency	Professional skills and attitudes	Training support	Evidence/ Assessment
<p><b>Placenta and cervix</b></p> <p><b>1. Ultrasound assessment of site</b></p> <ul style="list-style-type: none"> <li>• Transabdominal ultrasound</li> <li>• Transvaginal ultrasound</li> <li>- Indication</li> <li>- Interpretation</li> </ul> <p><b>2. Placenta praevia</b></p> <ul style="list-style-type: none"> <li>• Classification</li> <li>• Management</li> <li>• Outcome</li> </ul> <p><b>3. Transvaginal assessment of the cervix</b></p>	<p>Be able to perform and interpret ultrasound assessment of placental site</p> <ul style="list-style-type: none"> <li>- transabdominally</li> <li>- transvaginally</li> </ul> <p>Be able to manage placenta praevia including:</p> <ul style="list-style-type: none"> <li>• Appropriate follow up</li> <li>• Referral for further assessment (e.g. anterior PP with previous CS)</li> <li>• Plan delivery</li> </ul> <p>Be able to assess the cervix in relation to pre-term labour</p>	<p>Conduct transabdominal and, where appropriate, transvaginal scan to assess placental position.</p> <p>Communicate result to patient and other professionals</p> <p>Communicate results to patient and other professional(s)</p>	<p>Mandatory education and training sessions</p> <p>Supervised structured clinical learning sessions</p> <p>Personal study – Textbooks of obstetric ultrasound and relevant reviews/papers</p> <p>Green top guideline 'Placenta praevia: diagnosis and management'.</p>	<p>Log of experience</p> <p>Case discussion in clinic</p> <p><b>OSATS:</b> Ultrasound assessment of placenta</p>

**Ultrasound assessment of fetal size, fetal wellbeing and placenta logbook**

Skill	Competence level					
	Observation		Direct Supervision		Independent Practice	
	Date	Signature	Date	Signature	Date	Signature
Safe use of US machine and use of correct settings						
Accurate measurement of BPD/HC, FAC, FL, EFW						
Accurate documentation of measurements and observations, including chart plotting						
Assessment of liquor volume Accurate measurement of AFI						
Assessment of placental position using the transabdominal and the transvaginal route						
Assessment of the cervix using the transvaginal route						
Accurate acquisition and analysis of Doppler trace and indices.						
Producing written summary and interpretation of results						
Communicating normal results to parents						
Communicating abnormal results to parents						
Arranging appropriate follow up or intervention.						

<b>Training courses or sessions</b>		
<b>Title</b>	<b>Signature of educational supervisor</b>	<b>Date</b>

<b>Authorisation of signatures</b>	
<b>Name (please print)</b>	<b>Signature</b>



## OSATS: Fetal biometry

Trainee Name:		Assessor Name:		Date:
Level of training: Grade/ Year		Post:		

<b>Clinical details of complexity/ difficulty of case</b>	
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	Item under observation	Needs help	Done independently
1	Counsel patient about procedure		
2	Appropriate machine setup/probe selection		
3	Confirm fetal heartbeat		
4	Measure BPD, HC, TCD, AC, FL transabdominally		
5	Demonstrate normal anatomy		
6	Demonstrate Biometric anomalies detected on scan and note differences from normal		
7	Communicate results to patient and uncertainties		
8	Identify placental site or position in relation to the cervical canal if appropriate		
9	Assess liquor volume		
10	Discuss appropriate referral to other specialities, if indicated		
11	Ensure images and video are recorded according to local protocol		
	<b>Comments</b>		

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## OSATS: Ultrasound assessment of maternal and fetal wellbeing

Trainee Name:		Assessor Name:		Date:
Level of training: Grade/ Year		Post:		

<b>Clinical details of complexity/ difficulty of case</b>	
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	Item under observation	Needs help	Done independently
1	Counsel patient about procedure		
2	Appropriate machine setup / probe selection		
3	Assess fetal movement and fetal lie		
4	Measure BPD, HC, AC and FL transabdominally		
5	Measure amniotic fluid volume		
6	Record umbilical artery Doppler waveform		
7	Measure umbilical artery indices		
8	Interpret amniotic fluid volume AND umbilical artery Doppler		
9	Communicate results to patient		
10	Complete ultrasound report		
11	Arrange appropriate follow up		
	<b>Comments</b>		

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_



## OSATS: Ultrasound assessment of placenta

Trainee Name:		Assessor Name:		Date:	
Level of training: Grade/ Year		Post:			

<i>Clinical details of complexity/ difficulty of case</i>	
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	Item under observation	Needs help	Done independently
1	Counsel patient about procedure		
2	Appropriate machine setup / probe selection		
3	Determine placental position - transabdominally		
4	- transvaginally		
5	Determine cervical length and appearance (transvaginal)		
6	Communicate results to patient		
7	Complete ultrasound report		
8	Arrange appropriate follow up		
	<b>Comments</b>		

Signature: \_\_\_\_\_

Date: \_\_\_\_\_