

Certificate in PoCUS Ultrasound

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1. Course Outline

Purpose

The purpose of this course is to help practicing clinicians to deepen their theoretical knowledge and practical skills in Point of Care Ultrasound (PoCUS) whilst continuing with their normal daily work.

Accreditation

This course is *not* accredited by the Consortium for Accreditation of Sonographic Education (CASE). This is a new course and has yet to be submitted for accreditation. However, the course is designed to the highest professional standards by leaders in this area.

Cost

£1800

Time Commitment

The course runs from September to April. Most of the course will be undertaken in the candidates' own time and with scanning experience being obtained in the workplace. However, seven days of face-to-face attendance at the training centre are required, with some flexibility over the choice of days.

In order to complete the course successfully, candidates will need to complete two assessments and put together a logbook of ultrasound experience. The first assessment is in ultrasound physics, which will take place early in the course. A foundation in physics is required in order to develop beyond a basic level in ultrasound. The final, major, assessment is in image acquisition and takes place towards the end of the course. This is standardised to ensure that assessments are reliable. The candidate's logbook needs to record a substantial number of ultrasound examinations undertaken by the candidate on a range of patients. It may also include normal subjects.

Modular Content

Candidates need to choose three out of five possible elements, 1) vascular (including deep vein thrombosis), 2) abdomen (trauma), 3) abdomen (medical), 4) Basic ECHO, 5) Lung. Only one of the two abdominal elements should be chosen.

2. Course Timings

This diagram illustrates the timings of the course. The different columns indicate the separate components.

Approximate Date	Location	Physics	Chosen Practical Skill Areas (three elements chosen from five options)	Logbook
September Two days	BETAR (SE16)	Ultrasound Physics Teaching	Choose practical study area. Introductory training in each area	Development of Clinical Competences within the Workplace (logbook) Submit logbook of cases
October One day (choice of two dates)	BETAR	Further Physics Teaching	Further practical training	
November Three date options	BETAR		Skill development	
January	BETAR	Physics assessment	Formative assessment of skills	
February Three date options	BETAR		Formative assessment of skills	
March	BETAR	Physics assessment resit	Summative assessments Competency signed-off	
April or May	BETAR		Summative reassessments Competency signed-off	

3. Course Content

Element One – Ultrasound Physics

Students will be expected to obtain a strong grasp of ultrasound physics. This will be assessed in a written examination in January. Learning will come from a combination of reading, online materials and face-to-face teaching. An online formative assessment will be undertaken in November or December to help the candidate to understand the expected standard.

The summative assessment will be designed at Masters level. It will be marked by experienced ultrasound faculty from Bromley Emergency Training and Research Ltd (BETAR) with significant experience of clinical ultrasound use in the NHS. It will be moderated by Canterbury Christ Church University (CCCU). Any candidates not achieving an adequate level at this written assessment will have the opportunity of a reassessment opportunity two months later.

The summative assessment will be undertaken in a secure way using CCCU software or in a classroom setting (if preferred) at BETAR premises.

Element Two - Skill Development

Students will be expected to develop ultrasound skills up to the level expected of a competent user of point-of-care ultrasound in the workplace. The expected standards are moderated by a reference group of experienced PoCUS clinicians.

The course is designed to be relevant to clinicians from a wide range of acute specialties as well as to junior clinicians who have not yet chosen a career path, clinicians in emergency services and clinicians working in remote, refugee and hostile environments. Clinicians need to choose at least three skill areas from five options.

1. Lung

Normal lung ultrasound
Interstitial syndrome
Consolidation and pneumonia
Pleural effusion and its drainage, haemothorax
Pneumothorax

2. Cardiac

Standard cardiac imaging
Pericardial effusion and tamponade
Knowledge of the technique of pericardial drainage in emergencies
Right ventricular enlargement
Qualitative assessment of cardiac contractility
Inferior vena cava (IVC) measurement and its use in diagnosis and management

Qualitative assessment of gross wall motion abnormality
Understanding the safe application of PoCUS cardiac imaging in clinical practice

3. Abdominal (Trauma)

Ultrasound anatomy
Standard FAST image acquisition
Interpretation of FAST images
Understanding of the limitations of FAST
Using FAST views in decision-making

4. Abdominal (Medical)

Ultrasound Anatomy
Ultrasound features of cholecystitis
Recognition of degrees of hydronephrosis
Bladder assessment
Recognition of free fluid in the abdomen (eg ascites)

5. Vascular

Vascular ultrasound anatomy
Use of ultrasound for vascular access, including central veins, peripheral veins and arteries
Diagnosis of lower limb proximal deep venous thrombosis using compression
Abdominal aortic aneurysm assessment

Candidates should only choose one of the two abdominal scanning options.

Teaching in each skill area will be given at face-to-face sessions and through online materials. There will also be a series of dates available between October and January, with some choice of dates when candidates should come to the BETAR premises and have supported sessions with faculty developing their ultrasound image acquisition skills. Attendance to at least two sessions is required. Formative assessments will be undertaken at these sessions at which candidates will need to obtain and save a series of 'best achievable' images as requested relating to their practical skill areas.

The final summative assessment will be undertaken at the BETAR premises. Dates will be available in March and April. At this assessment candidates will need to obtain and save a series of 'best achievable' images as requested relating to their practical skill areas, which will be reviewed by the faculty. Further details of the practical assessments are given in appendix A below. Candidates will

also need to complete a written assessment. This will be marked by BETAR with moderation by CCCU.

Element Three – Logbook

Each candidate will need to keep a logbook in which all scans undertaken by the candidate are recorded. This can include any scans undertaken on human subjects (not on simulators). The logbook can include scans undertaken for other purposes, such as Royal College certification, FAMUS, RCEM Level 1, etc. The logbook needs to include at least twenty scans in each of the three practical skill training areas chosen (at least sixty scans in total). Images should be saved on as many of these scans as possible, within any restrictions imposed by the clinical environment on image recording. These images need to be anonymised. They should be made available along with the logbook. The logbook should indicate, for each scan undertaken, the date, age, gender and purpose of the scan. The candidate should also have supervision by a more experienced practitioner on as many scans as possible. The purpose of supervision is formative, that is to guide the candidate in developing their skills. The candidate should indicate in the logbook whenever the scan was supervised. An example logbook is shown in Appendix B. These scans should not be used for clinical decision making unless the candidate is already authorised to use scans in this way through another route or has supervision from a clinician who is.

The candidate will need to obtain a statement from a senior staff member of their department or unit confirming that the scans recorded in the logbook were likely to have been obtained in that department or unit. A copy of the statement is shown in Appendix C.

4. Eligibility

Entry to this course is open to all clinicians for whom it may be relevant. It is designed for the needs of doctors working in acute specialties and doctors at Foundation Level 2 and beyond who might find these skills valuable. It is also relevant to other clinicians in acute contexts including Acute Care Practitioners and others.

Some background in ultrasound is required for entry into the programme. The minimum requirement is attendance at an ultrasound training course, such as RCEM Core Ultrasound (level 1), FAMUS or FUSIC course and evidence of some experience scanning in a clinical context. The application form is in Appendix D.

Appendix A

Image acquisition assessments. In order to complete the course successfully it is important that candidates are able to demonstrate skill in obtaining images relevant to the three practical skill areas chosen. This will be assessed in a standardised way. Candidates will need to obtain images on a simulator with simulated pathology and save the images for assessment later. The images need to be optimised with the correct probe positioning and angulation. M-mode recordings may also be required. The images obtained will be compared with images obtained by experienced faculty. The candidate will be expected to recognise simulated pathology relevant to their skill areas.

The candidate will also be required to obtain high quality images on normal subjects. These images will also need to demonstrate high quality image acquisition skills and the images will need to be saved for grading afterwards. They will be compared with images obtained by experienced faculty.

Appendix B

Logbook example

Date	Age and gender	Reason for scan	Category (eg lung, abdominal trauma)	Indicate if images obtained and link to images	Indicate if supervised	Notes

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Appendix C

Supervision Statement

I can confirm that I have personal knowledge that (insert name) has obtained experience in undertaking ultrasound scans in this unit or department during the period

I have seen their logbook on..... (insert date) and note that scanning was undertaken on a total of (insert number of patients and other human subjects listed as rows). I believe that the experience described in the logbook is likely to be accurate to the best of my knowledge and belief.

Signed.....

Governance statement. These scans should have been obtained in a training capacity and the learner must follow the GMC Duties of a Doctor in their use of clinical ultrasound. Specifically for this purpose we would emphasise those parts of Domain 1, which relate to recognising and working within the limits of their competence and providing a good standard of practice and care.

Appendix D**Application Form**

Name	
Reasons for wanting to undertake this PoCUS ultrasound certificate	
Clinical working environment	
Eligibility: what previous experience of PoCUS have you had?	
Supervisor(s). (You are required to have a named supervisor who has sufficient knowledge of your practical ultrasound experience to be able to sign the supervisor statement).	
I can confirm that I have met the eligibility requirements, that I will use ultrasound safely within the workplace, that I will be able to attend the necessary training and that the course fee will be paid before the start of the course.	
Signature	