



# Ultrasound Logbook

-AAA

-EFAST

-Procedural Ultrasound  
(Vascular Access)

Name: \_\_\_\_\_

Logbook Compiled by  
**Dr Kyle Kophamel**  
Emergency Registrar  
March 2015



# Ultrasound Logbook

This is the Western Australian Emergency Medicine Ultrasound Education logbook.

It has been developed to comply with (and exceed) the training guidelines suggested by the Australasian College for Emergency Medicine (ACEM) and the Australasian Society for Ultrasound in Medicine (ASUM).

## **Modules within this logbook include:**

EFAST

AAA

Procedural Ultrasound (Vascular Access)

## **Steps in training and gaining competence are:**

Ultrasound Course

Supervised Scans

Images should be recorded and maintained as part of this logbook

Formative Assessments

Summative Assessment / Test

These records should be maintained by the trainee.

Candidates should not use ultrasound to guide their clinical decision making until they have completed their training.

It is essential both patient and doctors caring for the patient are aware scans done by the trainee are for training purposes only and are not to be used to determine the presence or absence of any pathology.

James Rippey MBBS DCH DDU FACEM



## For Each Reviewer who has accredited Scans:

	Reviewer's Name	Reviewer's Initial	Reviewer's Title and Qualification
1	_____	_____	_____
2	_____	_____	_____
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11	_____	_____	_____
12	_____	_____	_____



# AAA Accreditation

## Abdominal Aortic Aneurysm Ultrasound Assessment

### Accreditation requires (as a minimum)

#### 1. Completion of Introductory US course

Physics, artefacts, how to use the machine and perform a scan

#### 2. Completion of a scan of the abdominal aorta

With theoretical and hands on components

#### 3. Completion of an ultrasound logbook

15 scans with recording of images (ideally 25 scans)

Half indicated

5 positive

Scans all checked by a supervisor (may simply view images retrospectively)

Ideally scans compared to a gold standard (CT / Serial clinical exam / Formal ultrasound / Operative findings / Post mortem)

#### 4. Completion of 3 Formative Assessments

Detailed and directed AAA examinations with a supervisor, going through the attached work sheet.

#### 5. Summative Assessment

A formative assessment with no help / feedback, where the competence of the sonographer is completely assessed by a supervisor.

#### 6. Testing of Knowledge

Ideally a test of image interpretation and clinical decision making ability to test knowledge rather than ultrasound ability.

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Sketch findings on this image

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## Formative Assessment **E-Aorta**

**Trainee:** \_\_\_\_\_

**Tutor:** \_\_\_\_\_

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

A Formative Assessment is a structured teaching process. The student is led through a complete ultrasound examination by their tutor. The tutor may direct, prompt and teach as they see appropriate. At least 3 Formative Assessments are required before attempting the final Summative Assessment.

The Summative Assessment is a structured assessment process where the candidate may be prompted through the ultrasound examination process, is asked questions but should not be instructed.

**Competent**      **Required Instruction**

### **Preparation**

#### **Prepare patient**

Position


Consent / Explanation

#### **Prepare environment**

Lights dimmed if possible

--	--

#### **Prepare machine**

Correct position

--	--

#### **Turn machine on**

--	--

#### **Probe selection**

Can change transducer


Selects appropriate transducer for indication

#### **Preset selection**

Select correct prese

--	--

#### **Data entry**

Enter patient / study details

--	--

		Competent	Required Instruction
<b>Image acquisition</b>			
<b>Aorta TS</b>			
	Optimisation		
	Adjusts depth		
	Understands frequency adjustment		
	Adjusts focus if on machine		
	Adjusts gain & TGC		
	Firm constant pressure		
	Identifies		
	Vertebral body		
	Aorta		
	Iliac vessels		
	IVC		
	Coeliac Axis		
	SMA		
	Splenic vein		
	Left renal vein (if seen)		
	Bowel		
	Liver		
	Measures aorta accurately		
	Outer wall to outer wall		
<b>Aorta LS</b>			
	Optimises image		
	Identifies		
	Aorta and fans across it		
	Differentiates aorta from IVC		
	Describes		
	Appearance of AAA (size)		
	>3cm = aneurysm		
	Appearance of thrombus		
	Appearance of retroperitoneal haematoma		
	Usually can't tell if leaking but may see haematoma / free fluid		
<b>Alternative Views</b>			
	Aware of imaging the aorta through the left kidney		
<b>Essential Clinical Knowledge</b>			
	Acts on ultrasound findings appropriately		
	AAA stable patient		
	AAA unstable patient		
	Normal sized aorta		
	Indeterminate findings		

**Competent**      **Required  
Instruction**

### Record Keeping

Stores appropriate images

--	--

Writes appropriate report

--	--

### Machine Maintenance

Cleans ultrasound probe

Can replace printer paper (if printer attached)

Stores machine and probes safely and correctly


Trainee Signature

\_\_\_\_\_

Trainee's Name

\_\_\_\_\_

Tutor Signature

\_\_\_\_\_

Tutor's Name

\_\_\_\_\_

A copy of this completed formative assessment form should be kept by the trainee.



## Formative Assessment **E-Aorta**

**Trainee:** \_\_\_\_\_

**Tutor:** \_\_\_\_\_

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

A Formative Assessment is a structured teaching process. The student is led through a complete ultrasound examination by their tutor. The tutor may direct, prompt and teach as they see appropriate. At least 3 Formative Assessments are required before attempting the final Summative Assessment.

The Summative Assessment is a structured assessment process where the candidate may be prompted through the ultrasound examination process, is asked questions but should not be instructed.

**Competent**      **Required Instruction**

### **Preparation**

#### **Prepare patient**

Position


Consent / Explanation

#### **Prepare environment**

Lights dimmed if possible

--	--

#### **Prepare machine**

Correct position

--	--

#### **Turn machine on**

--	--

#### **Probe selection**

Can change transducer


Selects appropriate transducer for indication

#### **Preset selection**

Select correct prese

--	--

#### **Data entry**

Enter patient / study details

--	--

		Competent	Required Instruction
<b>Image acquisition</b>			
<b>Aorta TS</b>			
	Optimisation		
	Adjusts depth		
	Understands frequency adjustment		
	Adjusts focus if on machine		
	Adjusts gain & TGC		
	Firm constant pressure		
	Identifies		
	Vertebral body		
	Aorta		
	Iliac vessels		
	IVC		
	Coeliac Axis		
	SMA		
	Splenic vein		
	Left renal vein (if seen)		
	Bowel		
	Liver		
	Measures aorta accurately		
	Outer wall to outer wall		
<b>Aorta LS</b>			
	Optimises image		
	Identifies		
	Aorta and fans across it		
	Differentiates aorta from IVC		
	Describes		
	Appearance of AAA (size)		
	>3cm = aneurysm		
	Appearance of thrombus		
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	Usually can't tell if leaking but may see haematoma / free fluid		
<b>Alternative Views</b>			
	Aware of imaging the aorta through the left kidney		
<b>Essential Clinical Knowledge</b>			
	Acts on ultrasound findings appropriately		
	AAA stable patient		
	AAA unstable patient		
	Normal sized aorta		
	Indeterminate findings		

**Competent**      **Required  
Instruction**

### Record Keeping

Stores appropriate images

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Writes appropriate report

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### Machine Maintenance

Cleans ultrasound probe

Can replace printer paper (if printer attached)

Stores machine and probes safely and correctly


Trainee Signature

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Trainee's Name

\_\_\_\_\_

Tutor Signature

\_\_\_\_\_

Tutor's Name

\_\_\_\_\_

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## Formative Assessment **E-Aorta**

**Trainee:** \_\_\_\_\_

**Tutor:** \_\_\_\_\_

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

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The Summative Assessment is a structured assessment process where the candidate may be prompted through the ultrasound examination process, is asked questions but should not be instructed.

**Competent**      **Required Instruction**

### **Preparation**

#### **Prepare patient**

Position


Consent / Explanation

#### **Prepare environment**

Lights dimmed if possible

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#### **Prepare machine**

Correct position

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#### **Turn machine on**

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#### **Probe selection**

Can change transducer


Selects appropriate transducer for indication

#### **Preset selection**

Select correct prese

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#### **Data entry**

Enter patient / study details

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<b>Aorta TS</b>			
	Optimisation		
	Adjusts depth		
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<b>Alternative Views</b>			
	Aware of imaging the aorta through the left kidney		
<b>Essential Clinical Knowledge</b>			
	Acts on ultrasound findings appropriately		
	AAA stable patient		
	AAA unstable patient		
	Normal sized aorta		
	Indeterminate findings		

Competent	Required Instruction
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### Record Keeping

Stores appropriate images

--	--

Writes appropriate report

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### Machine Maintenance

Cleans ultrasound probe

Can replace printer paper (if printer attached)

Stores machine and probes safely and correctly


Trainee Signature

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Trainee's Name

---

Tutor Signature

---

Tutor's Name

---

A copy of this completed formative assessment form should be kept by the trainee.



## Summative Assessment **E-Aorta**

**Candidate:** \_\_\_\_\_

**Examiner:** \_\_\_\_\_

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

A Summative Assessment is a structured assessment process. The student is led through a complete ultrasound examination by their examiner.

At least 3 Formative Assessments are required before attempting the final Summative Assessment. The candidate may be prompted through the ultrasound examination process and is asked questions but should not be instructed.

Failure to complete any one element changes the Summative Assessment into a Formative Assessment and the examination is completed as a teaching exercise, not a final assessment. A further Summative Assessment is required prior to accreditation.

	Competent	Fail
<b>Preparation</b>		
<b>Prepare patient</b>		
Position		
Consent / Explanation		
<b>Prepare environment</b>		
Lights dimmed if possible		
<b>Prepare machine</b>		
Correct position		
<b>Turn machine on</b>		
<b>Probe selection</b>		
Can change transducer		
Selects appropriate transducer for indication		
<b>Preset selection</b>		
Select correct preset		
<b>Data entry</b>		
Enter patient / study details		

## Image acquisition

### Aorta TS

#### Optimisation

- Adjusts depth
- Understands frequency adjustment
- Adjusts focus if on machine
- Adjusts gain & TGC
- Firm constant pressure

#### Identifies

- Vertebral body
- Aorta
- Iliac vessels
- IVC
- Coeliac Axis
- SMA
- Splenic vein
- Left renal vein (if seen)
- Bowel
- Liver

#### Traces Aorta down to bifurcation

#### Measures aorta accurately

- Outer wall to outer wall

### Aorta LS

#### Optimises image

#### Identifies

- Aorta and fans across it
- Differentiates aorta from IVC

#### Describes

- Appearance of AAA (size)  
>3cm = aneurysm
- Appearance of thrombus
- Appearance of retroperitoneal haematoma

Usually can't tell if leaking but may see haematoma / free fluid

### Alternative Views

#### Aware of imaging the aorta through the left kidney

## Essential Clinical Knowledge

#### Acts on ultrasound findings appropriate

- AAA stable patient
- AAA unstable patient
- Normal sized aorta
- Indeterminate findings

**Competent      Fail**



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--	--


**Competent      Fail**

**Record Keeping**

Stores appropriate images

--	--

Writes appropriate report

--	--

**Machine Maintenance**

Cleans ultrasound probe

Can replace printer paper (if printer attached)

Stores machine and probes safely and correctly


Candidate's Signature

\_\_\_\_\_

Candidate's Name

\_\_\_\_\_

Examiner's Signature

\_\_\_\_\_

Examiner's Name

\_\_\_\_\_

A copy of this completed summative assessment form should be kept by the trainee.  
If the department has a Director of Emergency Ultrasound they should keep a copy of this document.

# E-FAST Accreditation

## Extended Focussed Assessment with Sonography for Trauma

### Accreditation requires (as a minimum)

#### 1. Completion of Introductory US course

Physics, artefacts, how to use the machine and perform a scan

#### 2. Completion of a FAST or E-FAST course

With theoretical and hands on components

#### 3. Completion of an ultrasound logbook

25 scans with recording of images

Half indicated

5 positive for free fluid

Scans all checked by a supervisor (may simply view images retrospectively)

Ideally scans compared to a gold standard (CT / Serial clinical exam / Formal ultrasound / Operative findings / Post mortem)

#### 4. Completion of 3 Formative Assessments

Detailed and directed E-FAST examinations with a supervisor, going through the attached work sheet.

#### 5. Summative Assessment

A formative assessment with no help / feedback, where the competence of the sonographer is completely assessed by a supervisor.

#### 6. Testing of Knowledge

Ideally a test of image interpretation and clinical decision making ability to test knowledge rather than ultrasound ability.

ultrasound VILLAGE		E-FAST		E-FAST is a limited trauma ultrasound that only aims to detect: 1. Intra abdominal free fluid 2. Pericardial effusion 3. Major haemothorax 4. Pneumothorax A normal E-FAST does not exclude significant intra abdominal injury				Patient details		
Mechanism of Trauma				Pulse	BP	RR	Sats			
Examination Findings										
Probe Position	Views	Notes	Findings				Optional Information			
	1 RUQ	 RUQ Fluid collects in Morrison's Pouch Look above diaphragm for HTX 5° head down tilt will increase RUQ fluid	Right Upper Quadrant	Normal	Inadequate	Positive	< 2mm maximal depth 2 - 10mm maximal depth > 10 mm maximal depth			
	2 LUQ	 LUQ Fluid can collect around the entire spleen Look above the diaphragm for HTX	Right Haemothorax	Normal	Inadequate	Positive				
	3 Subcostal	 Subcostal Temporade is a clinical diagnosis Look for fluid in the pericardial space Intra-abdominal fluid above the liver can simulate fluid in front of the right ventricle - although it is on the other side of the diaphragm Pericardial fat pads may give the appearance of pericardial fluid Fluid must have a depth of >5mm; traces of pericardial fluid are normal	Left Upper Quadrant	Normal	Inadequate	Positive	< 2mm maximal depth 2 - 10mm maximal depth > 10 mm maximal depth			
	4 Female Pelvis LS	 Pelvis Look for free fluid behind and above the bladder In the female, fluid collects initially in the Pouch of Douglas A small amount of pelvic free fluid is normal in women	Left Haemothorax	Normal	Inadequate	Positive				
	5 Male Pelvis TS		Subcostal	Normal	Inadequate	Positive	Maximal depth ____mm			
	6 & 7 Lung LS	 Lung Sliding sign and comet tail artefact are normal; loss of these indicate PTX Pneumothorax, large bullae, COPD and non-ventilation (eg endobronchial intubation) can simulate PTX	Pelvis	Normal	Inadequate	Positive	< 2mm maximal depth 2-10mm maximal depth > 10 mm maximal depth			
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	Copyright Rippey and Ercole 2009									
	<b>Conclusions</b> (Note: E-FAST findings must be consistent with clinical suspicion; integrate history, examination, investigations and EFAST findings to reach a conclusion)									
Clinician	Signature	Date	Time	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100						

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Probe Position	Views	Notes	Findings				Optional Information			
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ultrasound VILLAGE		E-FAST		E-FAST is a limited trauma ultrasound that only aims to detect: 1. Intra abdominal free fluid 2. Pericardial effusion 3. Major haemothorax 4. Pneumothorax A normal E-FAST does not exclude significant intra abdominal injury				Patient details		
Mechanism of Trauma				Pulse	BP	RR	Sats			
Examination Findings										
Probe Position	Views	Notes	Findings				Optional Information			
	1 RUQ	 RUQ Fluid collects in Morrison's Pouch Look above diaphragm for HTX 5° head down tilt will increase RUQ fluid	Right Upper Quadrant	Normal	Inadequate	Positive	< 2mm maximal depth 2 - 10mm maximal depth > 10 mm maximal depth			
	2 LUQ	 LUQ Fluid can collect around the entire spleen Look above the diaphragm for HTX	Right Haemothorax	Normal	Inadequate	Positive				
	3 Subcostal	 Subcostal Temporade is a clinical diagnosis Look for fluid in the pericardial space Intra-abdominal fluid above the liver can simulate fluid in front of the right ventricle - although it is on the other side of the diaphragm Pericardial fat pads may give the appearance of pericardial fluid Fluid must have a depth of >5mm, traces of pericardial fluid are normal	Left Upper Quadrant	Normal	Inadequate	Positive	< 2mm maximal depth 2 - 10mm maximal depth > 10 mm maximal depth			
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	5 Male Pelvis TS		Subcostal	Normal	Inadequate	Positive	Maximal depth ____mm			
	6 & 7 Lung LS	 Lung Sliding sign and comet tail artefact are normal, loss of these indicate PTX Pleuradheses, large bullae, COPD and non-ventilation (eg endobronchial intubation) can simulate PTX	Pelvis	Normal	Inadequate	Positive	< 2mm maximal depth 2-10mm maximal depth > 10 mm maximal depth			
			Right Lung Pneumothorax	Normal	Inadequate	Positive	Detected anteriorly Anteriorly and laterally			
			Left Lung Pneumothorax	Normal	Inadequate	Positive	Detected anteriorly Anteriorly and laterally			
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Clinician	Signature	Date	Time	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100						

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## Formative Assessment **E-FAST**

**Trainee:**

**Tutor:**

**Date:**

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	Competent	Required Instruction
<b>Preparation</b>		
<b>Prepare patient</b>		
Position		
Consent / Explanation		
<b>Prepare environment</b>		
Lights dimmed if possible		
<b>Prepare machine</b>		
Correct position		
<b>Turn machine on</b>		
<b>Probe selection</b>		
Can change transducer		
Selects appropriate transducer for indication		
<b>Preset selection</b>		
Select correct preset		
<b>Data entry</b>		
Enter patient / study details		

			Competent	Required Instruction
<b>Image acquisition</b>				
<b>RUQ</b>	Optimisation	Adjusts depth		
		Understands frequency adjustment		
		Adjusts focus if on machine		
		Adjusts gain & TGC		
	Identifies	Liver		
		Morrisons pouch		
		Kidney		
		Diaphragm		
		Lung		
		Gallbladder (if seen)		
		IVC (if seen)		
		Bowel		
		Duodenum (if seen)		
	Describes	Where intraabdominal blood collects		
		Appearance of this		
		Where pleural blood collects		
		Appearance of this		
<b>LUQ</b>	Optimises image			
	Identifies	Spleen		
		Kidney		
		Diaphragm		
		Can identify bowel / stomach		
	Describes	Where intraabdominal blood collects		
		Appearance of this		
		Where pleural blood collects		
		Appearance of this		
<b>Pelvis</b>	Optimises image			
	Identifies	Adjusts gain appropriately		
		Bladder		
		Iliac vessels		
		Prostate / Uterus & Vagina		
		Rectum		
	Scans through in TS / LS appropriately			
	Describes	Where free fluid collects		

		Competent	Required Instruction
Pericardium			
Subcostal view			
Optimises image			
	Adjusts depth appropriately		
Identifies			
	Liver		
	Lung		
	Heart		
	R Ventricle		
	L Ventricle		
	Septum		
	Atria		
	Pericardium		
Describes			
	Where pericardial fluid collects		
	Appearance of this		
Long axis parasternal view (optional)			
Optimises image			
Identifies			
	Heart		
	RV		
	LV		
	LA		
	MV		
	AV		
Pericardium			
Describes			
	Where pericardial fluid collects		
	Appearance of this		
Lung (optional)			
Optimises image			
	High resolution (abdo or linear probe)		
	Shallow depth		
Identifies			
	Rib		
	Pleura		
	Comet tail artifact		
	Sliding sign		
Describes			
	Appearance of pneumothorax		
	Assessment of pneumothorax size		
Other (optional)			
Sternum fracture assessment			
IVC size and variation assessment			

**Competent**      **Required  
Instruction**

### Essential Clinical Knowledge

Acts on ultrasound findings appropriate  
 Free fluid  
 Normal scan  
 Indeterminate  
 Incidental findings


### Record Keeping

Stores / prints appropriate images

--	--

Writes appropriate report

--	--

### Machine Maintenance

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly


Trainee Signature \_\_\_\_\_

Trainee's Name \_\_\_\_\_

Tutor Signature \_\_\_\_\_

Tutor's Name \_\_\_\_\_

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Consent / Explanation		
<b>Prepare environment</b>		
Lights dimmed if possible		
<b>Prepare machine</b>		
Correct position		
<b>Turn machine on</b>		
<b>Probe selection</b>		
Can change transducer		
Selects appropriate transducer for indication		
<b>Preset selection</b>		
Select correct preset		
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Enter patient / study details		

			Competent	Required Instruction
<b>Image acquisition</b>				
<b>RUQ</b>	Optimisation	Adjusts depth		
		Understands frequency adjustment		
		Adjusts focus if on machine		
		Adjusts gain & TGC		
	Identifies	Liver		
		Morrisons pouch		
		Kidney		
		Diaphragm		
		Lung		
		Gallbladder (if seen)		
		IVC (if seen)		
		Bowel		
		Duodenum (if seen)		
	Describes	Where intraabdominal blood collects		
		Appearance of this		
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<b>LUQ</b>	Optimises image			
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		Kidney		
		Diaphragm		
		Can identify bowel / stomach		
	Describes	Where intraabdominal blood collects		
		Appearance of this		
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		Appearance of this		
<b>Pelvis</b>	Optimises image			
	Identifies	Adjusts gain appropriately		
		Bladder		
		Iliac vessels		
		Prostate / Uterus & Vagina		
		Rectum		
	Scans through in TS / LS appropriately			
	Describes	Where free fluid collects		

		Competent	Required Instruction
Pericardium			
Subcostal view			
Optimises image			
	Adjusts depth appropriately		
Identifies			
	Liver		
	Lung		
	Heart		
	R Ventricle		
	L Ventricle		
	Septum		
	Atria		
Describes	Pericardium		
	Where pericardial fluid collects		
	Appearance of this		
Long axis parasternal view (optional)			
Optimises image			
Identifies			
	Heart		
	RV		
	LV		
	LA		
	MV		
	AV		
Describes	Pericardium		
	Where pericardial fluid collects		
	Appearance of this		
Lung (optional)			
Optimises image			
	High resolution (abdo or linear probe)		
	Shallow depth		
Identifies			
	Rib		
	Pleura		
	Comet tail artifact		
Describes	Sliding sign		
	Appearance of pneumothorax		
	Assessment of pneumothorax size		
Other (optional)			
Sternum fracture assessment			
IVC size and variation assessment			

**Competent**      **Required  
Instruction**

### Essential Clinical Knowledge

Acts on ultrasound findings appropriate  
 Free fluid  
 Normal scan  
 Indeterminate  
 Incidental findings


### Record Keeping

Stores / prints appropriate images

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Writes appropriate report

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### Machine Maintenance

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly


Trainee Signature \_\_\_\_\_

Trainee's Name \_\_\_\_\_

Tutor Signature \_\_\_\_\_

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<b>Prepare machine</b>		
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<b>RUQ</b>	Optimisation	Adjusts depth		
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Pericardium			
Subcostal view			
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 Incidental findings


### Record Keeping

Stores / prints appropriate images

--	--

Writes appropriate report

--	--

### Machine Maintenance

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly


Trainee Signature \_\_\_\_\_

Trainee's Name \_\_\_\_\_

Tutor Signature \_\_\_\_\_

Tutor's Name \_\_\_\_\_

A copy of this completed formative assessment form should be kept by the trainee.



## Summative Assessment **E-FAST**

**Candidate:** \_\_\_\_\_

**Examiner:** \_\_\_\_\_

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

A Summative Assessment is a structured assessment process. The student is led through a complete ultrasound examination by their examiner.

At least 3 Formative Assessments are required before attempting the final Summative Assessment.

The candidate may be prompted through the ultrasound examination process and is asked questions but should not be instructed.

Failure to complete any one element changes the Summative Assessment into a Formative Assessment and the examination is completed as a teaching exercise, not a final assessment.

A further Summative Assessment is required prior to accreditation.

**Competent      Fail**

### **Preparation**

#### **Prepare patient**

Position

--	--

Consent / Explanation

--	--

#### **Prepare environment**

Lights dimmed if possible

--	--

#### **Prepare machine**

Correct position

--	--

#### **Turn machine on**

--	--

#### **Probe selection**

Can change transducer

--	--

Selects appropriate transducer for indication

--	--

#### **Preset selection**

Select correct preset

--	--

#### **Data entry**

Enter patient / study details

--	--

## Image acquisition

### RUQ

#### Optimisation

- Adjusts depth
- Understands frequency adjustment
- Adjusts focus if on machine
- Adjusts gain & TGC

**Competent      Fail**


#### Identifies

- Liver
- Morrisons pouch
- Kidney
- Diaphragm
- Lung
- Gallbladder (if seen)
- IVC (if seen)
- Bowel
- Duodenum (if seen)


#### Describes

- Where intraabdominal blood collects
- Appearance of this
- Where pleural blood collects
- Appearance of this


### LUQ

#### Optimises image

--	--

#### Identifies

- Spleen
- Kidney
- Diaphragm
- Can identify bowel / stomach


#### Describes

- Where intraabdominal blood collects
- Appearance of this
- Where pleural blood collects
- Appearance of this


### Pelvis

#### Optimises image

- Adjusts gain appropriately

--	--

#### Identifies

- Bladder
- Iliac vessels
- Prostate / Uterus & Vagina
- Rectum


#### Scans through in TS / LS appropriately

--	--

#### Describes

- Where free fluid collects

--	--

		Competent	Fail
Pericardium			
Subcostal view			
Optimises image			
	Adjusts depth appropriately		
Identifies			
	Liver		
	Lung		
	Heart		
	R Ventricle		
	L Ventricle		
	Septum		
	Atria		
Describes	Pericardium		
	Where pericardial fluid collects		
	Appearance of this		
Long axis parasternal view (optional)			
Optimises image			
Identifies			
	Heart		
	RV		
	LV		
	LA		
	MV		
	AV		
	Pericardium		
Describes			
	Where pericardial fluid collects		
	Appearance of this		
Lung (optional)			
Optimises image			
High resolution (abdo or linear probe)			
	Shallow depth		
Identifies			
	Rib		
	Pleura		
	Comet tail artifact		
Sliding sign			
Describes			
	Appearance of pneumothorax		
	Assessment of pneumothorax size		
Other (optional)			
Sternum fracture assessment			
IVC size and variation assessment			

**Competent      Fail**

### Essential Clinical Knowledge

Acts on ultrasound findings appropriately  
 Free fluid  
 Normal scan  
 Indeterminate  
 Incidental findings


### Record Keeping

Stores / prints appropriate images  
 Writes appropriate report


### Machine Maintenance

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly


Candidate's Signature \_\_\_\_\_

Candidate's Name \_\_\_\_\_

Examiner's Signature \_\_\_\_\_

Examiner's Name \_\_\_\_\_

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# Procedural Ultrasound Accreditation

## Vascular Access

### Accreditation requires (as a minimum)

#### 1. Completion of Introductory US course

Physics, artefacts, how to use the machine and perform a scan

#### 2. Completion of a Vascular Access US course or Training Day

With theoretical and hands on components

#### 3. Completion of an ultrasound logbook

In those competent at peripheral cannulation, 3 successful directly supervised scans should be completed prior to independent practice.

In those new to cannulation, at least 5 successful directly supervised procedures should be performed

For those undertaking central venous cannulation, 5 successful, directly supervised procedures are required

For those undertaking arterial cannulation, 5 successful, directly supervised procedures are required

#### 4. Completion of 2 Formative Assessments

Detailed and directed examinations with a supervisor, going through the attached work sheet.

#### 5. Summative Assessment

A formative assessment with no help / feedback, where the competence of the sonographer is completely assessed by a supervisor.

#### 6. Testing of Knowledge

Ideally a test of image interpretation and clinical decision making ability to test knowledge rather than ultrasound ability.



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name





# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name





# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name





# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

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Supervisor's Name





# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

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Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name





# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

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Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name





# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name



# Procedural Ultrasound

## Record Of Training Procedure

Procedure Type

Date:

Indication

Comments

Any Important Learning Points

Supervisor's Comments

Candidate's Signature

Candidate's Name

Supervisor's Signature

Supervisor's Name





# Procedural Ultrasound

## Formative Assessment

### Procedural Module: Vascular Access

**Candidate:** \_\_\_\_\_

**Examiner:** \_\_\_\_\_

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

A Formative Assessment is a structured teaching process.

The student is lead through the ultrasound examination process and is asked questions by their tutor.

They should have completed a course and 5 supervised procedures.

	Competent	Required Instruction
<b>Prepare patient</b>		
Consent / Explanation		
<b>Prepare environment</b>		
Lights dimmed if possible		
<b>Prepare machine</b>		
Correct position		
Ensure probe, patient and machine all in one visual line		
<b>Turn machine on</b>		
<b>Probe selection</b>		
Can change transducer		
Selects appropriate transducer for indication		
<b>Preset selection</b>		
Select correct preset		
<b>Data entry</b>		
Enter patient / study details		
<b>Knowledge of Technique</b>		
Asceptic technique		
Hat, gown, gloves		
Chlorhexidine and drape		
Probe in sterile cover		
Discuss which technique - longitudinal vs transverse		
Longitudinal		
See needle entire way		
Can slip to other vessel		
Transverse		
Watch surrounding structures		
Only see transverse cut of needle		
Easy to go in too deep		

With a Patient Simulate CVC Placement		Competent	Required Instruction
Preparation and positioning correct			
Patient			
Equipment			
Optimisation			
Adjusts depth			
Understands frequency adjustment			
Adjusts focus if on machine			
Adjusts gain & TGC			
Anatomical Knowledge			
Identifies			
Vein			
Artery			
Explains how to differentiate vein and artery			
Anatomical site			
Compressibility			
Respiratory variation			
Pulsatility			
Shape			
Neck			
Identifies all relevant anatomy			
IJV			
Carotid			
Trachea			
Sternomastoid			
Thyroid			
Other			
Using IJ for CVC Approach			
Ensure patient in best position			
For comfort			
To ensure veins distended			
Ensure carotid is not directly deep to IJ			
Identify best point to approach			
Measure depth from skin			
Determine best angle to approach			
Describes technique competently			
Maximal safety assured through operator technique			
With a Patient Simulate Peripheral Vascular Access			
Preparation and positioning correct			
Patient			
Equipment			
Optimisation			
Adjusts depth			
Understands frequency adjustment			
Adjusts focus if on machine			
Adjusts gain & TGC			
Peripheral Vascular Access			
Identifies all relevant anatomy			
Vessels			
Nerves			
Other			
Ensure patient in best position			
For comfort			
Tourniquette on			
Identify best approach point / position			
Measure depth from skin			
Determine best angle to approach			
Ensures needle avoids important structures			
Describes technique competently			
Maximal safety assured through operator technique			

	Competent	Required Instruction
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### Practical demonstration

Demonstrates on a phantom  
 Transverse approach  
 Longitudinal approach


### Record Keeping

Writes appropriate report

--	--

### Machine Maintenance

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly  
 Knows where probe covers are stored


Candidate's Signature \_\_\_\_\_

Candidate's Name \_\_\_\_\_

Examiner's Signature \_\_\_\_\_

Examiner's Name \_\_\_\_\_

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# Procedural Ultrasound

## Formative Assessment

### Procedural Module: Vascular Access

**Candidate:** \_\_\_\_\_

**Examiner:** \_\_\_\_\_

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

A Formative Assessment is a structured teaching process.

The student is lead through the ultrasound examination process and is asked questions by their tutor.

They should have completed a course and 5 supervised procedures.

	Competent	Required Instruction
<b>Prepare patient</b>		
Consent / Explanation		
<b>Prepare environment</b>		
Lights dimmed if possible		
<b>Prepare machine</b>		
Correct position		
Ensure probe, patient and machine all in one visual line		
<b>Turn machine on</b>		
<b>Probe selection</b>		
Can change transducer		
Selects appropriate transducer for indication		
<b>Preset selection</b>		
Select correct preset		
<b>Data entry</b>		
Enter patient / study details		
<b>Knowledge of Technique</b>		
Asceptic technique		
Hat, gown, gloves		
Chlorhexidine and drape		
Probe in sterile cover		
Discuss which technique - longitudinal vs transverse		
Longitudinal		
See needle entire way		
Can slip to other vessel		
Transverse		
Watch surrounding structures		
Only see transverse cut of needle		
Easy to go in too deep		

With a Patient Simulate CVC Placement		Competent	Required Instruction
Preparation and positioning correct			
Patient			
Equipment			
Optimisation			
Adjusts depth			
Understands frequency adjustment			
Adjusts focus if on machine			
Adjusts gain & TGC			
Anatomical Knowledge			
Identifies			
Vein			
Artery			
Explains how to differentiate vein and artery			
Anatomical site			
Compressibility			
Respiratory variation			
Pulsatility			
Shape			
Neck			
Identifies all relevant anatomy			
IJV			
Carotid			
Trachea			
Sternomastoid			
Thyroid			
Other			
Using IJ for CVC Approach			
Ensure patient in best position			
For comfort			
To ensure veins distended			
Ensure carotid is not directly deep to IJ			
Identify best point to approach			
Measure depth from skin			
Determine best angle to approach			
Describes technique competently			
Maximal safety assured through operator technique			
With a Patient Simulate Peripheral Vascular Access			
Preparation and positioning correct			
Patient			
Equipment			
Optimisation			
Adjusts depth			
Understands frequency adjustment			
Adjusts focus if on machine			
Adjusts gain & TGC			
Peripheral Vascular Access			
Identifies all relevant anatomy			
Vessels			
Nerves			
Other			
Ensure patient in best position			
For comfort			
Tourniquette on			
Identify best approach point / position			
Measure depth from skin			
Determine best angle to approach			
Ensures needle avoids important structures			
Describes technique competently			
Maximal safety assured through operator technique			

	Competent	Required Instruction
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### Practical demonstration

Demonstrates on a phantom  
 Transverse approach  
 Longitudinal approach


### Record Keeping

Writes appropriate report

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### Machine Maintenance

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly  
 Knows where probe covers are stored


Candidate's Signature \_\_\_\_\_

Candidate's Name \_\_\_\_\_

Examiner's Signature \_\_\_\_\_

Examiner's Name \_\_\_\_\_

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# Procedural Ultrasound

## Formative Assessment

### Procedural Module: Vascular Access

**Candidate:** \_\_\_\_\_

**Examiner:** \_\_\_\_\_

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

A Formative Assessment is a structured teaching process.

The student is lead through the ultrasound examination process and is asked questions by their tutor.

They should have completed a course and 5 supervised procedures.

	Competent	Required Instruction
<b>Prepare patient</b>		
Consent / Explanation		
<b>Prepare environment</b>		
Lights dimmed if possible		
<b>Prepare machine</b>		
Correct position		
Ensure probe, patient and machine all in one visual line		
<b>Turn machine on</b>		
<b>Probe selection</b>		
Can change transducer		
Selects appropriate transducer for indication		
<b>Preset selection</b>		
Select correct preset		
<b>Data entry</b>		
Enter patient / study details		
<b>Knowledge of Technique</b>		
Asceptic technique		
Hat, gown, gloves		
Chlorhexidine and drape		
Probe in sterile cover		
Discuss which technique - longitudinal vs transverse		
Longitudinal		
See needle entire way		
Can slip to other vessel		
Transverse		
Watch surrounding structures		
Only see transverse cut of needle		
Easy to go in too deep		

		Competent	Required Instruction
<b>With a Patient Simulate CVC Placement</b>	Preparation and positioning correct		
	Patient		
	Equipment		
	Optimisation		
	Adjusts depth		
	Understands frequency adjustment		
	Adjusts focus if on machine		
	Adjusts gain & TGC		
	Anatomical Knowledge		
	Identifies		
	Vein		
	Artery		
	Explains how to differentiate vein and artery		
	Anatomical site		
	Compressibility		
	Respiratory variation		
	Pulsatility		
	Shape		
	Neck		
	Identifies all relevant anatomy		
	IJV		
	Carotid		
	Trachea		
Sternomastoid			
Thyroid			
Other			
Using IJ for CVC Approach			
Ensure patient in best position			
For comfort			
To ensure veins distended			
Ensure carotid is not directly deep to IJ			
Identify best point to approach			
Measure depth from skin			
Determine best angle to approach			
Describes technique competently			
Maximal safety assured through operator technique			
<b>With a Patient Simulate Peripheral Vascular Access</b>	Preparation and positioning correct		
	Patient		
	Equipment		
	Optimisation		
	Adjusts depth		
	Understands frequency adjustment		
	Adjusts focus if on machine		
	Adjusts gain & TGC		
	Peripheral Vascular Access		
	Identifies all relevant anatomy		
	Vessels		
	Nerves		
	Other		
	Ensure patient in best position		
	For comfort		
	Tourniquette on		
	Identify best approach point / position		
	Measure depth from skin		
	Determine best angle to approach		
	Ensures needle avoids important structures		
	Describes technique competently		
	Maximal safety assured through operator technique		

Competent	Required Instruction
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### Practical demonstration

Demonstrates on a phantom  
 Transverse approach  
 Longitudinal approach


### Record Keeping

Writes appropriate report

--	--

### Machine Maintenance

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly  
 Knows where probe covers are stored


Candidate's Signature \_\_\_\_\_

Candidate's Name \_\_\_\_\_

Examiner's Signature \_\_\_\_\_

Examiner's Name \_\_\_\_\_

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# Procedural Ultrasound

## Competence Based Assessment Procedural Module: Vascular Access

**Candidate:** \_\_\_\_\_

**Examiner:** \_\_\_\_\_

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

A Summative Assessment is a structured assessment process.

The candidate may be prompted through the ultrasound examination process and is asked questions but should not be instructed. They should have completed a course and 5 supervised procedures.

Failure to complete any one element is a failure overall.

	Competent	Fail
<b>Prepare patient</b>		
Consent / Explanation		
<b>Prepare environment</b>		
Lights dimmed if possible		
<b>Prepare machine</b>		
Correct position		
Ensure probe, patient and machine all in one visual line		
<b>Turn machine on</b>		
<b>Probe selection</b>		
Can change transducer		
Selects appropriate transducer for indication		
<b>Preset selection</b>		
Select correct preset		
<b>Data entry</b>		
Enter patient / study details		
<b>Knowledge of Technique</b>		
Asceptic technique		
Hat, gown, gloves		
Chlorhexidine and drape		
Probe in sterile cover		
Discuss which technique - longitudinal vs transverse		
Longitudinal		
See needle entire way		
Can slip to other vessel		
Transverse		
Watch surrounding structures		
Only see transverse cut of needle		
Easy to go in too deep		

With a Patient Simulate CVC Placement		Competent	Fail
<b>Preparation and positioning correct</b>	Patient		
	Equipment		
<b>Optimisation</b>	Adjusts depth		
	Understands frequency adjustment		
	Adjusts focus if on machine		
	Adjusts gain & TGC		
<b>Anatomical Knowledge</b>			
Identifies	Vein		
	Artery		
	Explains how to differentiate vein and artery		
	Anatomical site		
	Compressibility		
Neck	Respiratory variation		
	Pulsatility		
	Shape		
	Identifies all relevant anatomy		
	IJV		
	Carotid		
	Trachea		
	Sternomastoid		
	Thyroid		
	Other		
<b>Using IJ for CVC Approach</b>			
	Ensure patient in best position		
	For comfort		
	To ensure veins distended		
	Ensure carotid is not directly deep to IJ		
	Identify best point to approach		
	Measure depth from skin		
	Determine best angle to approach		
	Describes technique competently		
<b>Maximal safety assured through operator technique</b>			
<b>With a Patient Simulate Peripheral Vascular Access</b>			
<b>Preparation and positioning correct</b>			
	Patient		
	Equipment		
<b>Optimisation</b>	Adjusts depth		
	Understands frequency adjustment		
	Adjusts focus if on machine		
	Adjusts gain & TGC		
<b>Peripheral Vascular Access</b>			
	Identifies all relevant anatomy		
	Vessels		
	Nerves		
	Other		
	Ensure patient in best position		
	For comfort		
	Touiquette on		
	Identify best approach point / position		
	Measure depth from skin		
	Determine best angle to approach		
	Ensures needle avoids important structures		
	Describes technique competently		
<b>Maximal safety assured through operator technique</b>			

**Competent      Fail**

**Practical demonstration**

Demonstrates on a phantom  
 Transverse approach  
 Longitudinal approach


**Record Keeping**

Writes appropriate report

--	--

**Machine Maintenance**

Cleans ultrasound probe  
 Can replace printer paper (if printer attached)  
 Stores machine and probes safely and correctly  
 Knows where probe covers are stored


Candidate's Signature \_\_\_\_\_

Candidate's Name \_\_\_\_\_

Examiner's Signature \_\_\_\_\_

Examiner's Name \_\_\_\_\_

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