

POCUS BELGIUM

BASIC LEVEL LOGBOOK

Candidate

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Introduction:

Point-of care ultrasound is a well-established adjunct to the practice of emergency medicine. The proficiency to recognize a cardiac tamponade, pneumothorax or free fluid in the blink of an eye, has changed medical practice thoroughly. However, ultrasound is an operator-dependent skill. In order to minimize inter-operator variation, education in point-of-care ultrasound is paramount.

Training pathway:

Introduction course

A basic introduction to ultrasound should be acquired by attending an introductory course. This course should comply with following requirements: 16 hours of training, with sufficient attention for hands-on practice and a maximum ratio of 4 candidates per teacher.

The introductory course should contain the four topics written below.

Scanning period and logbook

After the introductory course, the candidates are supposed to apply this knowledge in clinical practice and validate their expertise. Only pathological cases should be reported with recorded PoCUS loops. The normal PoCUS should be reported on the list below and signed by a BEUS validated supervisor <https://beusbelgium.org/over/>.

Criteria:

- eFAST
 - 25 scans (minimum 5 with pathological findings)
- Abdominal Aorta Aneurysm
 - 25 scans (minimum 5 with pathological findings)
- RUSH
 - 5 scans (minimum 3 with pathological findings)
- Echo in life support
 - 20 scans (minimum 5 pathological findings)
- Vascular access
 - 10 procedures, with minimum 2 central venous lines

Supervision:

Candidates are expected to complete the logbook per patient and per exam, and to collect pathological images on a USB-stick, in order to evaluate the images during the competence testing day.

These pathological images are preferentially stored as loops, as this facilitates interpretation. For the cardiac echo's (included in the RUSH exam), loops (3s) are obligatory, because still images provide insufficient information. As a backup procedure for ultrasound machines incapable of storing loops, loops may be recorded on a smartphone.

If no supervisor is available in your institution, loops can be recorded for normal exam as well and seen by a chosen supervisor on the list.

Competence testing

During one day, both theoretical and practical knowledge are tested.

Becoming a supervisor

After acquiring a level 1 attestation, progression to supervisor can be made. The only requirement is attaining one year of regular ultrasound practice after the completion of level 1 sign off. The request can be done through an email to the ultrasound taskforce. The candidate will then be added to the register.

POCUS – VASCULAR ACCESS

Patient demographics

Patientnumber or Initials & DOB	Date:
	Operator:
	Supervisor & signature:

Indication

<input type="checkbox"/> Cardiac arrest	<input type="checkbox"/> Hypotension	<input type="checkbox"/> Shock	<input type="checkbox"/> Sepsis
<input type="checkbox"/> Reduced consciousness	<input type="checkbox"/> Obesitas	<input type="checkbox"/> IV drug use	<input type="checkbox"/> Peripheral edema
<input type="checkbox"/> Failure to cannulate with traditional technique		<input type="checkbox"/> Other specify:	

Place

<input type="checkbox"/> Central line	<input type="checkbox"/> Right Jugular vein	<input type="checkbox"/> Right Subclavian vein	<input type="checkbox"/> Right Femoral vein
	<input type="checkbox"/> Left Jugular vein	<input type="checkbox"/> Left Subclavian vein	<input type="checkbox"/> Left Femoral vein
<input type="checkbox"/> Peripheral line	<input type="checkbox"/> R Cephalic vein	<input type="checkbox"/> R Brachial vein	<input type="checkbox"/> R Basilic vein
	<input type="checkbox"/> L Cephalic vein	<input type="checkbox"/> L Brachial vein	<input type="checkbox"/> L Basilic vein
	<input type="checkbox"/> R Saphenous vein	<input type="checkbox"/> Other specify:	
	<input type="checkbox"/> L Saphenous vein	<input type="checkbox"/> Other specify:	

Technique

<input type="checkbox"/> Out-of-plane view	<input type="checkbox"/> In-plane view
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Success of procedure

<input type="checkbox"/> Successful placement	<input type="checkbox"/> Unsuccessful placement		
Number of attempts	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> More

POCUS – RUSH

Patient demographics

Patientnumber or Initials & DOB	Date:
	Operator:
	Supervisor & signature:

Hemodynamics & Ventilation

Heartrate:	BP:	RR:	O2 sat:
ETT: Y / N	PEEP:	ETCO2:	

Indication

<input type="checkbox"/> Cardiac arrest	<input type="checkbox"/> Hypotension	<input type="checkbox"/> Shock	<input type="checkbox"/> Shortness of breath
<input type="checkbox"/> Tachypnea	<input type="checkbox"/> Tachycardia	<input type="checkbox"/> Chest pain	<input type="checkbox"/> Other:

THE PUMP

Views & Findings

Subxiphoidal (4 Chambers)	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained
PLA	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained
PSA	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained
A4C	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained

Cardiac motion

<input type="checkbox"/> Present (organized cardiac movement)	<input type="checkbox"/> Absent (no organized cardiac movement)
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Pericardial effusion

<input type="checkbox"/> Absent	<input type="checkbox"/> Undetermined		
<input type="checkbox"/> Present	<input type="checkbox"/> Small	<input type="checkbox"/> Moderate	<input type="checkbox"/> Large
<input type="checkbox"/> Evidence of tamponade	<input type="checkbox"/> R atrial collapse	<input type="checkbox"/> R ventricular collapse	

Global ventricular function

<input type="checkbox"/> Hyperdynamic	<input type="checkbox"/> Normal	<input type="checkbox"/> Moderately reduced	<input type="checkbox"/> Severely reduced
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Right ventricular size (compared to LV size)

<input type="checkbox"/> Normal	<input type="checkbox"/> Dilated	<input type="checkbox"/> Undetermined
<input type="checkbox"/> Clot visualisation	<input type="checkbox"/> D-sign (septal flattening)	<input type="checkbox"/> Paradoxical septal motion

THE TANK					
Views & Findings					
Subxiphoidal IVC	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
Pleural effusion R	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
Pleural effusion L	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
Lung sliding R	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
Lung sliding L	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
Hepatorenal	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
Splenorenal	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
Suprapubic	<input type="radio"/> Adequate		<input type="radio"/> Limited		<input type="radio"/> Not obtained
IVC					
<input type="radio"/> Normal		<input type="radio"/> Dilated / phletoric		<input type="radio"/> Collapsed (> 50%)	
<input type="radio"/> Undetermined					
Lung					
<input type="radio"/> <u>Pneumothorax:</u>	<input type="radio"/> Left	<input type="radio"/> No lungsliding		<input type="radio"/> No B-lines	
	<input type="radio"/> Right	<input type="radio"/> No lungsliding		<input type="radio"/> No lungpulse	
		<input type="radio"/> No B-lines		<input type="radio"/> Lungpoint	
<input type="radio"/> <u>Pleural effusion:</u>	<input type="radio"/> Left	<input type="radio"/> Right		<input type="radio"/> A-lines present	
		<input type="radio"/> A-lines present		<input type="radio"/> No A-lines present	
<input type="radio"/> > 3 B-lines focal		<input type="radio"/> > 3 B-lines diffuse		<input type="radio"/> Mobile B-lines	
<input type="radio"/> Not mobile B-lines					
FAST					
Hepatorenal free fluid		<input type="radio"/> Absent		<input type="radio"/> Present	
Perisplenic free fluid		<input type="radio"/> Absent		<input type="radio"/> Present	
Suprapubic free fluid		<input type="radio"/> Absent		<input type="radio"/> Present	
<input type="radio"/> Undetermined					

THE PIPES					
Views & Findings					
Proximal transverse view (aorta)		<input type="radio"/> Complete		<input type="radio"/> Inadequate	
Celiac trunk		<input type="radio"/> Visualised		<input type="radio"/> Not visualised	
Superior mesenteric artery		<input type="radio"/> Visualised		<input type="radio"/> Not visualised	
Distal transverse view (aorta)		<input type="radio"/> Complete		<input type="radio"/> Inadequate	
Bifurcation (iliacs)		<input type="radio"/> Visualised		<input type="radio"/> Not visualised	
Sagittal view (aorta)		<input type="radio"/> Complete		<input type="radio"/> Inadequate	
Femoral vein		<input type="radio"/> Complete		<input type="radio"/> Inadequate	
Popliteal vein		<input type="radio"/> Complete		<input type="radio"/> Inadequate	
Aortic Aneurysm					
<input type="radio"/> Present		<input type="radio"/> Absent		<input type="radio"/> Undetermined	
<input type="radio"/> Suprarenal		<input type="radio"/> Infrarenal		<input type="radio"/> Both	
<input type="radio"/> Iliac					
Aortic Dissection					
<input type="radio"/> Present		<input type="radio"/> Undetermined			
DVT <small>(optional)</small>					
<input type="radio"/> R Prox fem vein DVT			<input type="radio"/> L Prox fem vein DVT		
<input type="radio"/> Popliteal vein DVT			<input type="radio"/> Popliteal vein DVT		

SUMMARY

SHOCK	PUMP	TANK	PIPE
<input type="checkbox"/> Hypovolemic shock	Hypercontractile Small heart size	Flat IVC Peritoneal / Pleural fluid	AAA Aorta dissection
<input type="checkbox"/> Cardiogenic shock	Hypocontractile heart Dilated heart size	Distended IVC Lung rockets Pleural effusion / ascites	Normal
<input type="checkbox"/> Obstructive shock	Pericardial effusion RV strain Hypercontractile heart	Distended IVC Absent lung sliding	DVT
<input type="checkbox"/> Distributive shock	Hypercontractile heart Hypocontractile (late)	Normal / small IVC Pleural fluid (empyema) Peritoneal fluid (peritonitis)	Normal

END CONCLUSION RUSH

POCUS – ECHO in life support

Patient demographics

Patientnumber or Initials & DOB	Date:
	Operator:
	Supervisor & signature:

Hemodynamics & Ventilation

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ETT: Y / N	PEEP:	ETCO2:	

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<input type="checkbox"/> Tachypnea	<input type="checkbox"/> Tachycardia	<input type="checkbox"/> Chest pain	<input type="checkbox"/> Other:

CARDIAC VIEWS

Views & Findings

Subxiphoidal (4 Chambers)	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained
PLA	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained
PSA	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained
A4C	<input type="checkbox"/> Adequate	<input type="checkbox"/> Limited	<input type="checkbox"/> Not obtained

Cardiac motion

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Global ventricular function

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Right ventricular size (compared to LV size)

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<input type="checkbox"/> Clot visualisation	<input type="checkbox"/> D-sign (septal flattening)	<input type="checkbox"/> Paradoxical septal motion

Normal cases

eFAST					
	Dates	Patient number	Pathological? Yes/No	Exam quality Good/Average/Bad	Signature
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					

AAA

	Dates	Patient number	Pathological? Yes/No	Exam quality Good/Average/Bad	Signature
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					

RUSH					
	Dates	Patient number	Pathological? Yes/No	Exam quality Good/Average/Bad	Signature
1					
2					
3					
4					
5					

ELS					
	Dates	Patient number	Pathological? Yes/No	Exam quality Good/Average/Bad	Signature
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Vascular acces					
	Dates	Patient number	Pathological? Yes/No	Exam quality Good/Average/Bad	Signature
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					