

APPENDIX 3. SBUS: HANDS ON TEST

Stony Brook Medicine- Fellows Ultrasound course

Score: ____/108 ____%

Hands on Test

“you will be asked to perform different tasks; perform each ultrasound examination as if on a real patient. This includes positioning yourself, the machine and the patient; if certain positioning or other movements are infeasible due to space or safety constraints, then simply verbalise your intentions; remember to optimize the image; when you achieve an image which you deem acceptable for the task at hand alert me and name the anatomy which is in view”

“Identify a safe site for IJ access”

Positioning	Patient positioned supine or in trendelenberg	
	Operator positioned at head of bed	
	Machine positioned in line of vision at arm's length	
Transducer and machine	High frequency linear array transducer in use	
	Transducer marker to operator left (or match screen)	
	Transducer held in cross section	
	Depth appropriately set	
	Gain appropriately set	
Anatomy	Identifies IJ vein	
	Identifies carotid artery	
	Identifies the SCM muscle	
Evaluation and technique	Compression of IJ to establish patency	
	Examination of IJ from jawline to base of neck	
	Selection of a mid- neck site	
	Orientation of vein and artery	
	“show with your finger the angle of your needle”	
Completion of Evaluation	Assessment at contralateral IJ	
	Assessment for lung sliding at least ipsilaterally	
	Overall acceptable study	
	Total marks (out of possible 18)	

“Perform a DVT study on one leg using only 2D ultrasound; You may choose either leg or change sides even after you have started. State the anatomy as you go”

Positioning	Patient low extremity externally rotated	
	Operator positioned at side of bed	
	Machine positioned in line of vision at arm's length	
Transducer and machine	High frequency linear array transducer in use	
	Transducer marker to operator left (or match screen)	

APPENDIX 3. SBUS: HANDS ON TEST

	Transducer held in cross section	
	Depth appropriately set and adjusted during majority of study	
	Gain appropriately set and adjusted during majority of study	
Anatomy	Identifies CFV proximal to SFJ	
	Identifies SFJ	
	Identifies bifurcation of femoral artery	
	Identifies CFV distal to the SFJ	
	Identifies deep femoral vein; or verbalizes expected location	
	Identifies popliteal vein	
Evaluation and technique	Compression at each of above points	
	90 degree compression technique	
	Obliteration of vessel lumen with juxtaposition of walls	
	Overall acceptable study	
	Total marks (out of possible 17)	

“Prepare to perform chest ultrasound”

“Identify lung sliding in B mode then M mode”

“Identify the right hemidiaphragm”

“Identify A-lines”

Positioning	Patient positioned supine with exposed anterior thorax	
	Operator positioned at side of bed	
	Machine positioned in line of vision at arm's length	
Transducer and machine	Low frequency phased array transducer prepared for use for B-lines. (HF or LF either ok for Lung Sliding)	
	Transducer marker cephalad	
	Machine set for abdominal setting	
	Depth appropriately set and adjusted during majority of study	
	Gain appropriately set and adjusted during majority of study	
Anatomy	Identifies lung sliding in B-mode (HF or LF)	
	Identifies lung sliding in M-Mode (HF or LF)	
	Identifies A-lines (LF)	
	Identifies Right hemidiaphragm (LF)	
Evaluation and technique	Decreases gain to emphasize the pleural line	
	Overall acceptable study	
	Total marks (out of possible 13)	

APPENDIX 3. SBUS: HANDS ON TEST

“Prepare to perform abdominal ultrasound”

“Identify the Right kidney in long axis then in short axis”

“locate the inferior pole of this kidney”

“perform a FAST exam”

Positioning	Patient positioned supine with exposed anterior thorax	
	Operator positioned at side of bed	
	Machine positioned in line of vision at arm's length	
Transducer and machine	Low frequency phased array transducer prepared for use	
	Transducer marker cephalad	
	Machine set for abdominal setting	
	Depth appropriately set and adjusted during majority of study	
	Gain appropriately set and adjusted during majority of study	
Anatomy	Identifies kidney in long axis	
	Identifies kidney in short axis	
	Identifies inferior pole of kidney in short axis	
	Identified bladder	
	Identifies hepato- renal recess	
	Identifies spleno- renal recess	
	Appropriately positions for right paracolic gutter	
	Appropriately positions for left paracolic gutter	
	Attempts to perform subcostal cardiac view	
	Overall acceptable study	
	Total marks (out of possible 17)	

“Prepare for bedside echocardiography”

“Show me a PSLA view”

“Show me a short axis view where you would assess LV function and regional wall motion abnormality”

“Show me an apical four chamber view”

“show me a subcostal view and identify the anatomy”

“show me the IVC in longitudinal view; Identify relevant anatomy”

“Take measurements as you would in a shock patient”

Positioning	Patient positioned supine with exposed anterior thorax	
	Operator positioned at side of bed	
	Machine positioned in line of vision at arm's length	

APPENDIX 3. SBUS: HANDS ON TEST

Transducer and machine	Low frequency phased array transducer prepared for use	
	Machine set for cardiac setting and dot at operator right	
	Depth appropriately set and adjusted during majority of study	
	Gain appropriately set and adjusted during majority of study	
	Displays working knowledge of caliper functionality	
Anatomy	Accomplishes adequate PSLA view	
	Identifies LV, LA, LVOT, RVOT	
	Identifies Ao valve, mitral valve	
	Identifies Descending Aorta	
	Identifies pericardium	
	Achieves adequate PSSA view at the level of the papillary muscles	
	Identifies regions: septal, anterior, lateral, inferior	
	Identifies RV	
	Achieves adequate A4C view	
	Identifies LV, LA, RV, RA, Mitral valve, Tricuspid valve	
	Achieves adequate Subcostal 4 chamber view	
	Identifies LV, LA, RV, RA, Mitral valve, Tricuspid valve	
	Achieves adequate view of IVC in longitudinal section at mid-abdomen	
	Identifies cavo-atrial junction	
	Identifies Aorta in longitudinal section	
	Measures at 2-4cm from cavo-atrial junction	
	Measures internal edge- to- internal edge of IVC	
	Overall acceptable study	
	Total marks (out of possible 25)	

“Perform imaging for Fractional Shortening and for EPSS”

“Perform a cardiac output assessment”

“Perform an RVSP assessment”

Advanced echo	Performs imaging for frac shortening via M-Mode in PSLA accurately	
	Performs imaging for EPSS via M-Mode in PSLA accurately	
	Achieves A5CV	
	Measures VTI	
	Knowledgeable of PWD functionality is adequate	
	Optimises baseline for VTI	
	Avoids Nyquist limit/ Aliasing	
	Measures LVOT diameter in PSLA	

APPENDIX 3. SBUS: HANDS ON TEST

	Measures LVOT at accurate point in cardiac cycle- use of frames advancement	
	Uses zoom function for LVOT measurement	
	Identifies TR jet in either PSSA level of Ao Valve; or A4C view	
	Optimises baseline for TR Jet	
	Overall acceptable study	
	Total marks (out of possible 12)	

“start a new US session on the sonosite; label it with your tag; show me the abdominal aorta in cross section”

“save a still image of the abdominal aorta”

“show me peristalsis & save a 10 second retrospective clip of peristalsis”

“prepare the machine to upload your images to QPATH”

Machine control	Displays working knowledge of still image save functionality	
	Displays working knowledge of clip functionality	
	Displays working knowledge of upload functionality	
Anatomy	Identifies Aorta in short axis	
	Identifies gut sliding	
	Identifies peristalsis	
	Overall acceptable study	
	Total marks (out of possible 6)	

Reviewed—

Fellow: _____

S. Ahmad: _____