

UNC Department of Emergency Medicine Ultrasound Credentialing Program

Physician Credentialing: Credentialing decisions will be based on the following criteria

1. Prior credentialing at another institution
2. Documentation of satisfactory completion of RRC US training requirements
3. Clinical years in practice using US as part of clinical decision-making
4. Review of 20 preliminary scans/interpretations per clinical application
5. Completion of EM Sono training program

Ongoing credentialing in EM Ultrasound:

Every 2 years clinical competency will be determined by volume and scope of examinations performed, pathology identified, and accurate application and interpretation of sonographic studies. Approximately 10% of all sonographic studies performed in the ED by credentialed faculty will be routinely reviewed .

Physicians will be provided monthly readings to maintain ongoing competency.

ED Ultrasound Applications: Basic

E-FAST for trauma and shock

Aorta Ultrasound

Gallbladder Ultrasound

Renal Ultrasound

Pelvic Ultrasound - TransAbdominal /Transvaginal

Echocardiography and IVC

Lung Ultrasound

Procedural guidance

Musculoskeletal (MSK) Ultrasound

Bladder Volume Ultrasound

Soft Tissue Ultrasound

Advanced Ultrasound Applications

Testicular Ultrasound

Right Lower Quadrant US for Appendicitis

DVT Ultrasound

Orbital Ultrasound

Symptom-Based Ultrasound Applications

1. Unexplained Shock: Heart, lung, IVC, Aorta

RUSH Protocol

The Pump: Evaluate for tamponade, pulmonary embolus and acute MI Echocardiography.

The Tank: Evaluate for CHF, hemorrhage and sepsis.

- EFAST - Leakiness/compromise
- IVC - Volume status
- Thoracic - Fluid overload/pulmonary edema/pleural effusion

The Pipes: Evaluate for AAA and aortic dissection, +/- DVT.

2. Cardiac Arrest: Heart, IVC

FEELS Protocol

3. Acute Shortness of Breath: Heart, lung, IVC

RADIUS Protocol, LUCUS Protocol

- Echo: Evaluate for pericardial effusion/tamponade, pulmonary embolus (PE) (RV strain), congestive heart failure (CHF), acute MI
- IVC: Evaluate the volume status and fluid tolerance, as well as correlating the echo findings to pathology (enlarged IVC can occur with tamponade, large PE, and severe CHF)
- Thoracic: Evaluate for pleural effusion, pneumothorax, pulmonary edema, pneumonia

4. Acute Chest Pain: Heart, lung, IVC

5. Acute Abdominal Pain – gallbladder, renal, AAA

6. Acute Pelvic Pain – Renal, pelvic, Appy

7. Vision Loss - Retina, anterior chamber, posterior chamber

8. Extremity swelling/edema – Heart, Deep vein, soft tissue

Documentation Requirements:

TYPE OF EXAM IN LOG	EVALUATES...	REQUIRED: All CLIPS unless measurement/interpretation
GB	GALLBLADDER	2 CLIPS: TRANSVERSE AND LONG, MEASUREMENTS: CBD, WALL
RLQ	APPENDIX	COMPRESSION (AND COLOR DOPPLER)
FAST	FAST 4 VIEW	ALL 4 VIEWS MUST BE INTERPRETABLE; IF POSITIVE CAN HAVE 2 VIEW ONLY
EFAST	FAST 6 VIEW (4 view plus lungs)	AS ABOVE INCLUDING BILATERAL CLIP OF LUNG SLIDING AND/OR M MODE STILL
CHEST	PTX, PLEURAL EFFUSIONS, B LINES, THORACIC US	BILATERAL VIEWS: CLIPS (IF ADEQUATE STILL : OK); B LINES MUST HAVE MULTIPLE VIEWS EACH SIDE OF CHEST
RENAL	HYDRONEPHROSIS, CYSTS, STONE	3 clips: TRANSVERSE AND LONG KIDNEY AND BLADDER
TA PELVIS	UTERUS, OVARIES, PREGNANCY	2 clips UTERUS: SAGITTAL AND TRANSVERSE; BILATERAL OVARIES ATTEMPTED; IF LIUP, NEED FHT BY M MODE OR BY CLIP
EV PELVIS	UTERUS, OVARIES, PREGNANCY	2 clips: transverse and sagittal uterus with attempts at evaluation of ovaries; if IUP: FHT evaluated by M-Mode or clip
AORTA	AORTA	2 clips: TRANSVERSE AND LONG; MULTIPLE SECTIONS OF AORTA: PROXIMAL, MID, DISTAL TO BIFURCATION: STILL OR CLIP; MEASUREMENT OF AORTA
ECHO	HEART: PERICARDIAL EFFUSION, CONTRACTILITY	3 OUT OF 4 VIEWS clips: SX, PSL, PSS, AP4
ORBITAL	ORBIT: EOM, PUPIL CONTRACTILITY, RETINAL DETACHMENT, VITREOUS HEM, LENS DISLOCATION, ORBITAL RUPTURE	CLIP OF ORBITS BILATERAL
MSK	SKIN, BONE, MUSCLE: CELLULITIS, ABSCESS,	CLIP OR STILL OF RELEVANT FINDING

	FRACTURE, SEPTIC JOINT, JOINT EFFUSION, NERVES, LYMPH NODES	
DVT	DVT	COMPRESSIBILITY OF FEMORAL AND POPLITEAL REGION (5 CM DISTANCE); CLIP PREFERRED; STILLS OK IF SPLIT SCREEN OF NONCOMPRESSED V COMPRESSED REGION FOR THE LENGTH OF 5 CM
BLADDER	BLADDER VOLUME	SUPRAPUBIC TRANSVERSE AND SAGITTAL VIEW WITH 3 MEASUREMENTS AND CALCULATION OF VOLUME
IVC	IVC MEASUREMENT FOR VOLUME STATUS	SX 2 CHAMBER VIEW VISUALIZING IVC DIAMETER AND SNIFF TEST
TESTICULAR	TESTICULAR MASS, TORSION, HYDROCELE, VARICOCELE	TRANSVERSE AND LONGITUDINAL CLIPS (WITH COLOR DOPPLER)
ABDOMINAL	PANCREAS, INTUSSUSCEPTION, PYLORIC STENOSIS, ALL OTHER	MULTIPLE VIEWS
SOFTTISS	vascular non-procedure, VESSELS, LYMPHNODES, GLANDS, OTHER MSK	MULT VIEWS
THYROID	THYROID GLAND	2 clips on transverse and sagittal views
AIRWAY	ETT PLACEMENT, TRACHEA	
PROC LP	LUMBAR PUNCTURE	TRANSVERSE AND LONGITUDINAL SPINE LANDMARKS
PROC CENTRAL LINE	IJ, SUBCLAVIAN, FEMORAL	CLIP OR STILL showing needle or catheter in vein
PROC FB	FOREIGN BODY REMOVAL OR IDENTIFICATION	CLIP OR STILL showing FB
PROC PARA	PARACENTESIS	CLIP OF ASCITES FLUID AND LOCATION NEEDLE INSERTED
PROC THORA	THORACENTESIS	CLIP OF PLEURAL EFFUSION AND LOCATION NEEDLE INSERTED
PROC PIV	PERIPHERAL IV	CLIP OR STILL showing needle or catheter in vein
PROC DEEP BRACH	DEEP BRACHIAL LINE PLACEMENT	CLIP OR STILL OF DEEP BRACHIAL VEIN AND SITE OF NEEDLE INSERTION
PROC NERVE BLOCK	NERVE BLOCKS	
PROC ART LINE	ART LINE	
PROC PERICARDIO	PERICARDIOCENTESIS	
PROC ARTHRO	ARTHROCENTESIS	
PROC PACER	TRANSVENOUS PACER	

Quality Assurance:

I will be monitoring the performance of all clinicians using US as part of their clinical practice. These include:

- Residents
- Practicing physicians
- Fellows
- Mid-level providers

A significant percentage of studies performed in the ED will be routinely reviewed because of the monitoring of studies inherent to resident training in US. It is assumed that all studies performed by residents will have attending oversight and sign-off if the study is being used for clinical decision making.

Parameters to be evaluated:

- Image resolution
- Anatomic definition
- Image quality acquisition
- Interpretation
- Outcomes:
 - Other imaging modalities
 - Surgical procedures
 - Patient clinical outcomes