**Jenny’s Recommendations 12.17.17**

ICCUME All Domain Recommendations, statements without duplication.

DOMAIN 1: SCOPE

1.1 The ICC will produce consensus recommendations on “An integrated ultrasound curriculum” (“curriculum”) for undergraduate medical education (medical school).

1.2 The curriculum forms the foundation for ultrasound as a core clinical competency for all graduates regardless of specialty choice or location of practice.

1.3 The curriculum provides the foundation of ultrasound for all medical students, regardless of where their medical degree is obtained.

1.4. The curriculum serves as a resource for other healthcare professionals such as nurse practitioners, nurses, physician assistants, and emergency medicine technicians.

DOMAIN 2: PURPOSE OF ULTRASOUND CURRICULUM

2.1 The curriculum prepares students for POCUS (point of care ultrasound use) in future clinical work.

2.2. The curriculum facilitates teaching of basic sciences.

2.3 The curriculum enhances the learning of clinical sciences.

2.4 The curriculum facilitates integration of basic and clinical sciences

2.5 The curriculum enhances physical examination skills.

2.6 The curriculum enhances clinical problem solving.

2.7 The curriculum prepares learners for additional clinical training and/or practice opportunities.

2.8 The curriculum enhances the overall educational experience.

2.9 Medical students can learn basic ultrasound (quickly and well?).

DOMAIN 3: CURRICULUM CRITERIA

3.1 The curriculum s developed in accordance with accepted standards for medical education, as defined by national and international accrediting bodies.

3.2 The curriculum forms the foundation for ultrasound training along a continuum of medical education from undergraduate to graduate to continuing medical education.

3.3 The curriculum follows a competency-based model that includes measurable outcomes and markers toward those outcomes (milestones).

3.4 The currlculum incorporates ultrasound knowledge, skills, attitudes and professional judgment into entrustable professional activities (EPAs) as appropriate for patient care.

3.5 The curriculum integrates ultrasound into clinical problem solving and the care of patients at their point of care.

3.6 The curriculum includes opportunities for self-directed learning and assessment.

3.7 The curriculum encourages life-long learning.

3.8 The curriculum is based on evidence and expert opinion.

3.9 The curriculum is consistent with recommendations and guidelines of well-established specialty organizations and regulatory bodies with significant experience in ultrasound.

DOMAIN 4: CURRICULAR CONTENT

4.1 Fundamental ultrasound principles, instrumentation and equipment use.

4.2 Understanding and recognition of basic ultrasound artifacts.

4.3 The use of appropriate probes, and the difference between M and B modes

4.4 The risks of ultrasound

4.5 Proper preparation (communication and position) of the patient for ultrasound

4.6. Ultrasound correlates of the normal physical examination

4.7. Recognition of the sono texture of fat, fluid, air, bone, cartilage, muscle, nerves.

4.8. Normal organ system:

 Cardiovascular:

veins and arteries, including internal jugular vein, IVC and aorta

anatomy of the heart in four views: subcostal four chamber, PLAX, PLSX, and apical four-chamber view.

Correlation of the cardiac cycle on ultrasound with the EKG

Pericardium

 Respiratory:

Enumeration of ribs

Identification of “a” lines (normal lung sliding) in four standard positions, with their clinical correlates

Identification of visceral and parietal pleura

Identification of diaphragm

 Gastrointestinal System

Liver size and texture

Gall bladder

Splenic size and texture

Hepatorenal pouch

Splenorenal pouch

 Endocrine System

Thyroid gland

Adrenal glands

 GU System

Size and texture of kidneys

Bladder

Prostate

 Reproductive System

Uterus

Testicles

Ovaries

 Soft Tissue/musculo skeletal

Solid or cystic masses

Normal anatomy of shoulder, knee, wrist

Identification of tendons and ligaments

 Nervous System

Ulnar, radial, median nerve

Femoral nerve

Brachial plexus

 Eyes

Optic nerve sheath.

4.9 Ultrasound pathology and clinical correlates

 Cardiovascular:

Low ejection fraction

Left atrial enlargement

Significant regurgitation of the aortic and mitral valves

Pericardial effusion

Increased or decreased intravascular volume by IVC

Measurement of abdominal aortic aneurysm

Recognition of acute DVT

 Pulmonary

Presence and significance of B lines

Pleural fluid

Pneumothorax

Location of endotracheal tube

Sliding curtain sign

 Gastrointestinal

Stones in the gall bladder

Ascites or abdominal free fluid

Abnormal masses in liver or spleen

Endocrine System

Significance of thyroid nodules on ultrasound

 REPRODUCTIVE SYSTEM

Identification of gravid uterus

Identification of testicular mass

 GU System

Evidence of hydronephrosis

Presence of renal stones

Evidence of urinary retention

 EYES

Identification of papilledema

4.10. Ultrasound guidance as used for procedures

Peripheral venous and arterial cannulation

IVC placement

Thoracentesis

Paracentesis

Arthrocentesis