A Pilot Project
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Introduction

Background: Point of care ultrasound is becoming more commonplace and has broad applications in both the inpatient and ambulatory settings. There is a tremendous potential improved patient outcomes as a result of faster and more accurate clinical diagnosis. As family physicians, there are numerous ways that patients can benefit from this technology for not only providing procedural assistance, but also aiding in diagnosis/assessing certain conditions. Unfortunately no formal guidance on implementing an ultrasound curriculum in a residency was found on literature search.

Planning

Objective: To provide a framework by which a robust, standardized curriculum that can be woven into the family medicine residency. To improve residents' knowledge and skills for evaluation and diagnosis of common ultrasound protocols. This will be accomplished by providing didactic instruction via skilled ultrasonographers, simulation training sessions and hands on practice both during family medicine and off service rotations.

Initial Resources:
- EM/MM: Faculty were met with to discuss both EM and IM curriculum, how it was established and initial setbacks they experienced.
  - IM Residency: Utilizes US/I on inpatient side for bedside cardiac and paracentesis procedures
  - EM Residency: Has initial robust training course with ongoing training with an US/I tech and faculty in numerous areas including cardio/pulmonary, RUQ, FAS, OB/GYN and soft tissue. They do read their own limited US/I studies and bill for them.

Credentialed:
- While there is no formal credentialed process in family medicine in the various aspects of point-of-care ultrasound, our initial goal is to initiate a basic curriculum for both inpatient and outpatient settings with the plan to build on this in future years. Procedures/images will not be saved to patient's charts nor will they be billed for its use.

Lectures:
- PM&R 8/17/16, Basic knoblology and introduction to MSK US/I

Workstations:
- IVC Assessment and Paracentesis guidance: 08/30/2016
  - Learn the utility of IVC assessment
  - Understand how to measure and interpret the findings of IVC
  - Learn indications of paracentesis
  - Understand how to perform a paracentesis with ultrasound
- MSK US/I joint Injection/Soft Tissue Assessment 11/30/16
  - Why Ultrasound Guided injections?
  - Discuss the Technical Considerations Involved with Ultrasound Guided (USG) Injections
  - Review the procedure of ultrasound guided injections for knee
  - Practice injection/aspiration under ultrasound guidance

- Basic OB Assessment, FHT, AFI and head placement
  - Understand the indications and uses of Limited Ob US/I
  - Understand the pelvic anatomy with respect to US/I
  - Practice evaluation for head placement and know what red flag abnormal anatomy to assess for (placenta/vasa previa)
  - Be able to obtain an AFI and know the normal ranges
- Cardiac Assessment (global function)
  - Understand the indication and uses for bedside cardiac US/I
  - Understand the limitations of the bedside cardiac US/I
  - Learn the different windows used for assessing cardiac function
  - Be able to interpret findings on bedside cardiac US/I (global function, assess for tamponade, pericardial effusion)
- Abdominal (FAST exam, hepatobiliary assessment)
  - Understand the indications and limitations for bedside abdominal US/I
  - Learn the different views for hepatobiliary and FAS exam
  - Learn the positive findings for both RUQ (choleciystitis, enlarged CBD, hepatomegaly) and FAS exam

Resident Survey

- Cardiac
- Abdominal
- MSK
- OB/GYN
- Derm

Timeline

- Create Ultrasound Teaching plan
- Resident Survey (weighted preference)
- Obtain Ultrasound Machine
- Connect with faculty to help with training
- Implement training workshops
- Faculty education
- Reassess residents
- Faculty training workshops
- Continue resident training

Limitations

- Obtaining Machine
  - Funding through the residency
  - Used machine purchased
- Family Medicine has a broad scope of practice
  - For the pilot phase, decided to focus on the use of ultrasound in inpatient setting including MSK and Basic OB assessment
- Faculty training
  - Identified faculty champions
  - Area specific training
  - Working on sending staff to trainings
    - STFM
    - MSK US/I workshops

Future Directions

- Continue to integrate ultrasound into rotations
  - Inpatient
  - Outpatient
- Increase frequency of training sessions
  - Continue workshops
  - Monthly practice sessions
- Expand ultrasound teaching and use to include abdominal and cardiac assessment

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