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Navigating Unchartered Waters with USSONAR to Build an Integrative MSKUS Curriculum for MCV Rheumatology Fellowship Program

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Background
Musculoskeletal ultrasound (MSKUS) is an increasingly popular tool for the rheumatologist to aid in the diagnosis and management of articular pathology. Compared to traditional radiographs and magnetic resonance imaging scans, MSKUS has a minimal risk of radiation and can be readily available at the bedside for rapid diagnosis and treatment (1).

Despite this, as of 2015, only 41% of 135 rheumatology fellowship programs in the US offer structured MSKUS curriculum (2, 3). There is currently no existing curriculum in the Medical College of Virginia (MCV) Rheumatology fellowship program.

Methods
Two rheumatology faculty (FS & NS) trained in MSKUS have been tasked with establishing and implementing a formal MSKUS curriculum. We will use an 8-step competency-based framework reported by Brown and colleagues (5), see Methods: Figure 1. We will further integrate measures reported by the Royal College of Radiologists Ultrasound Training Recommendations for medical and surgical subspecialties, resources from the American College of Rheumatology (ACR), and Ultrasound School of North American Rheumatologists (USSONAR) (6,7,8).

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Methods: Figure 1
Stage 1: Situational Analysis
- Test the current rheumatology fellows on their baseline views regarding current MSKUS use in the program (see Figure 2)

Stage 2: Establish indications, anatomical areas and skill
- Create a checklist of skills utilizing published material (see Figure 3)
- Adapt teaching resources provided by MSKUS specialists from conferences

Stage 3: Establish competency standards
- Apply milestones outlined by ACR (4) to our department evaluations

Stage 4: Assess clinical utility and learning motivation
- Begin a quarterly workshop at the NOW Center
- Introduce MSKUS in weekly VA Injection Clinic

Stage 5: Integration of competency standards with clinical requirements
- Create a checklist of skills utilizing published material
- Adapt teaching resources provided by MSKUS specialists from conferences

Stage 6: Validation
- Integrate competency data and educational outcomes to send to local imaging experts for review. Experts will then submit qualitative feedback and quantitative scores

Stage 7: The pilot curriculum
- Outline core competencies, schedule workshops and conferences, have fellows create portfolios with saved images

Stage 8: Implementation, delivery and evaluation
- Administer Stage 1 quiz to fellows to assess interval change
- Feedback from fellows, rheum faculty, and imaging experts

Results

Figure 2: Results of Stage 1 – Situational analysis.

Figure 3: Results of Stage 2 – Instructional guides

Conclusions
With every passing year, the demand for rheumatologists in the workforce is increasing (9). Part of a competitive and highly sought after rheumatology program is strong training in MSKUS, one which we are eager to develop. We plan on completing the remainder of the stages by the end of 2017.

References
*Further resources are available in accompanying Handout