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Design and Impact of a Musculoskeletal (MSK) Image-Guided Procedure Curriculum for Radiology Residents

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Introduction

- **Fluoroscopy-guided joint intervention more accurate and effective than palpation-guided, but risk of radiation**
- **Previous studies have investigated MSK interventional curricula on resident performance metrics in patient simulators and phantoms**
- **Our institution piloted its own curriculum and tracked outcomes in real patient cases**

Methods

- **n = 317 (196 pre- vs. 121 post-education)**
- **Curriculum: online training module, hands-on equipment orientation, observing procedures**
- **Metrics: fluoroscopy time, total procedure time, technical competency, patient satisfaction**

Results

- **Statistically significant decrease in fluoroscopy time only (subgroup analysis: residents on rotation #2, on rotation #3, and in the R3 class)**
- **No difference in other metrics outlined above**

Figures

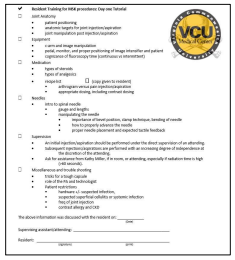

Figure 1: Musculoskeletal (MSK) image-guided procedure day one tutorial outline

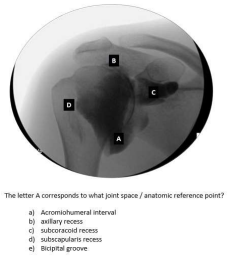

Figure 2: Example question from the anatomic reference section of the supplemental online training module

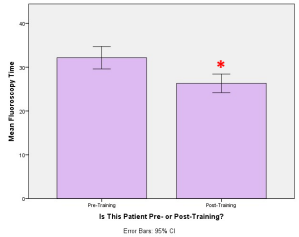

Figure 3: Mean fluoroscopy times significantly decreased between pre- and post-training residents

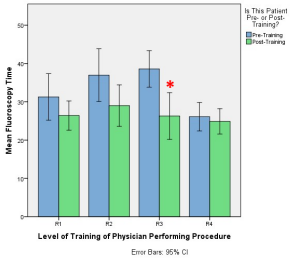

Figure 4: Mean fluoroscopy times decreased significantly between pre- and post-training residents in the R3 class only

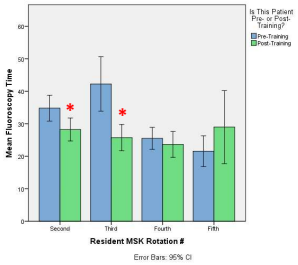

Figure 5: Mean fluoroscopy times decreased significantly between pre- and post-training residents on their second and third musculoskeletal rotations

Discussion

- **MSK interventional curriculum improved several performance metrics (e.g., technical competence, fluoroscopy usage)**
- **Generally greater benefit when curriculum applied earlier in training**
- **Further studies to increase statistical power, decrease selection bias, etc.**

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