

Effectiveness of a Novel Longitudinal Point of Care Ultrasound (POCUS) Curriculum



Natalie Boone, MD

Methodist Charlton Medical Center Family Medicine Residency Program

Background

Point of Care Ultrasound (POCUS) can aid diagnostic accuracy in a number of medical presentations both in the inpatient and outpatient settings through a low-cost yet effective imaging modality¹⁻³. Residency programs are increasingly adding POCUS training to their curriculums, with varying degrees of guidance for implementation⁴⁻⁵. Methodist Charlton Medical Center's Family Medicine Residency Program (MCMC FMRP) is establishing a novel longitudinal POCUS curriculum for residents over the course of their first year of training.

Research Problem

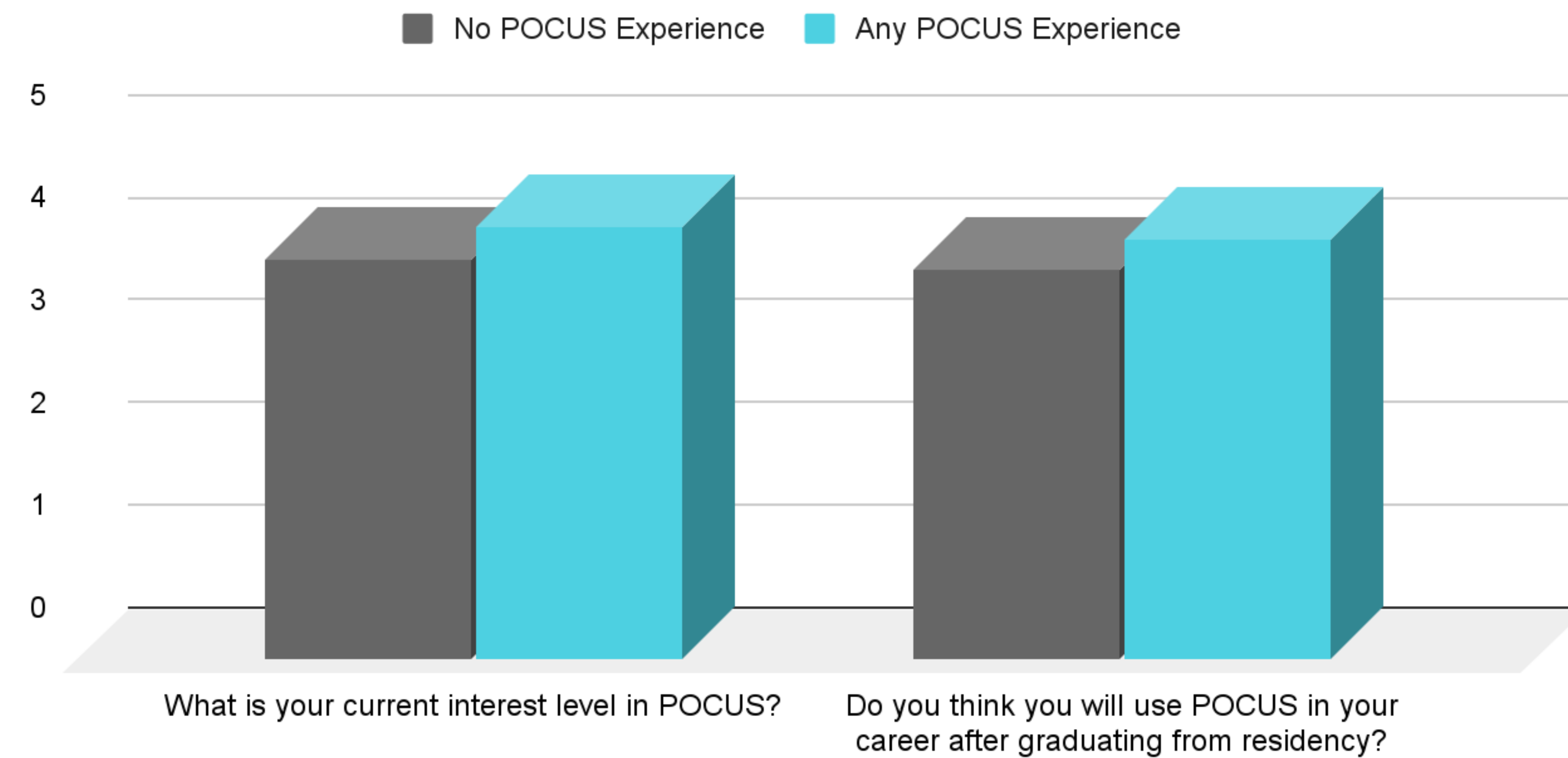
The novel longitudinal POCUS curriculum for first year residents will include many teaching modalities, including didactic sessions, hands-on practice using simulated ultrasound, online modules with included virtual cases, and a multiple choice examination at the end of the curriculum. The curriculum aims to improve resident knowledge in POCUS and their confidence in using POCUS in the clinic setting. However, it has not been established if this novel curriculum will help residents reach these goals.

Research Questions

Does MCMC FMRP's longitudinal POCUS curriculum increase resident knowledge of POCUS uses and interpretation of POCUS results?

How does MCMC FMRP's longitudinal POCUS curriculum affect resident confidence in their POCUS skill set?

Resident Attitudes Towards POCUS Prior to POCUS Curriculum



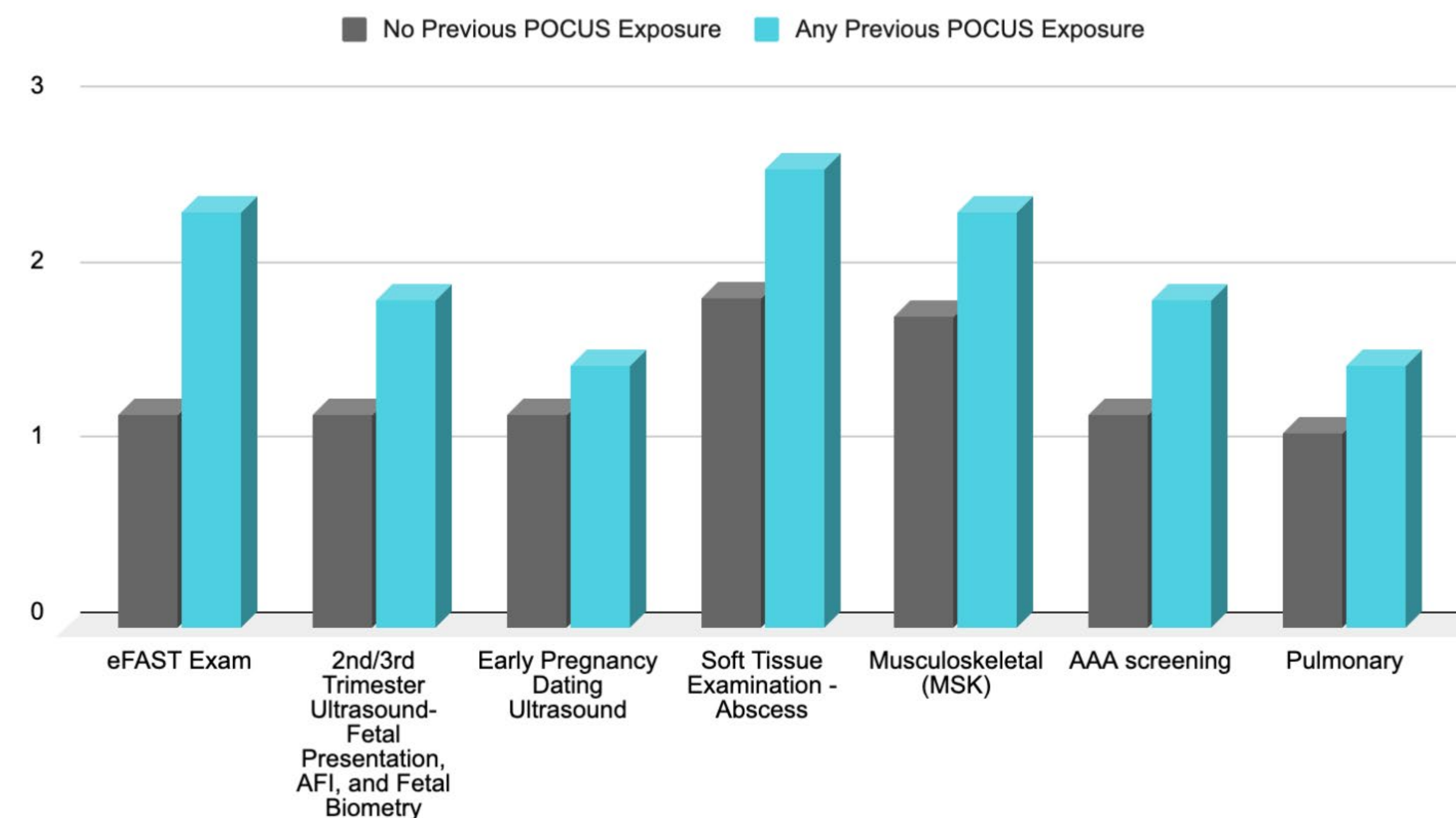
Survey was given to current MCMC residents to see if POCUS experience correlated with general interest in POCUS.

This helped develop the Needs Assessment for the POCUS curriculum development

QR Codes for Curriculum Manuscript and Research Proposal

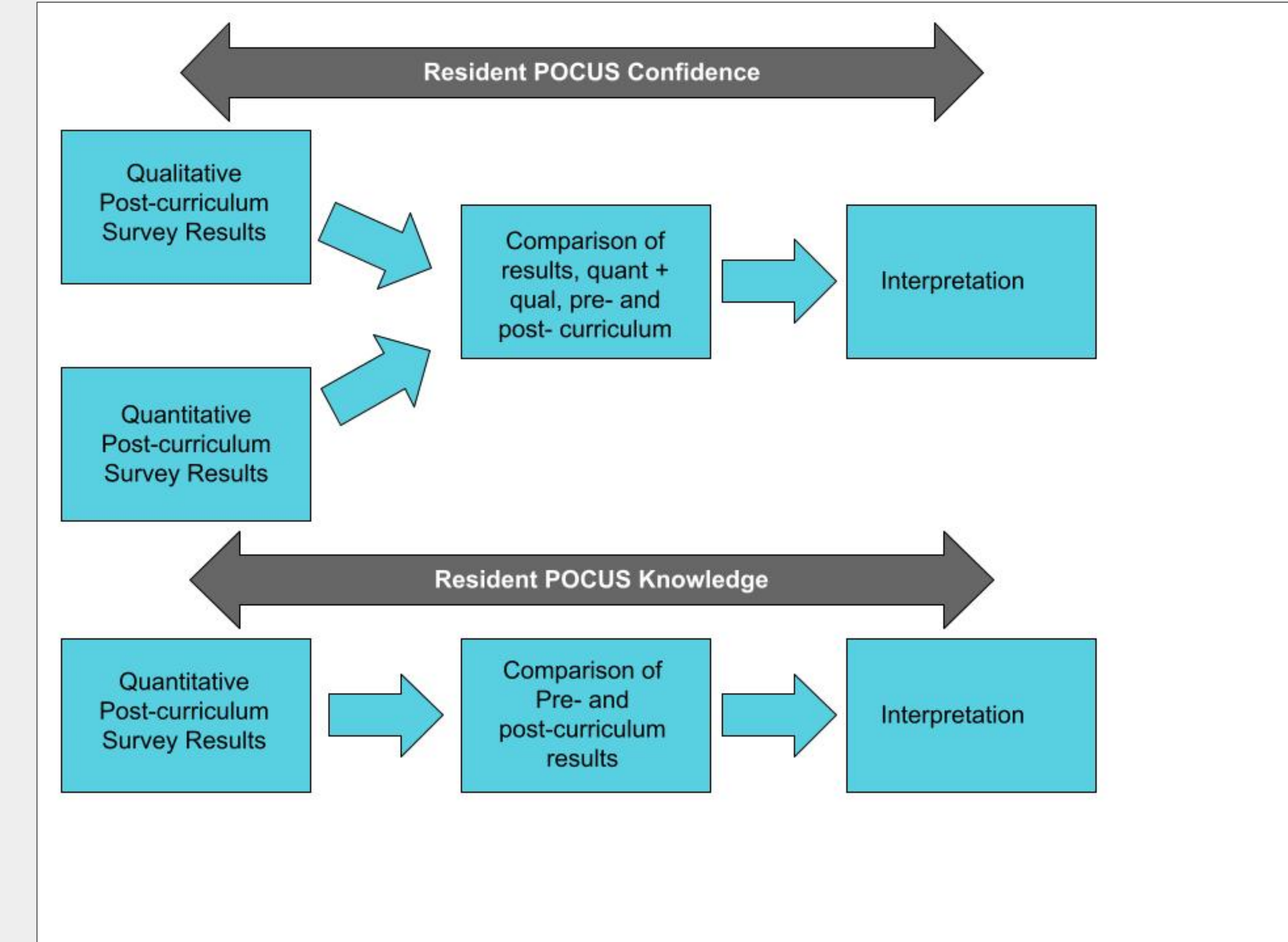


Resident Confidence in Common POCUS Uses Prior to POCUS Curriculum



Survey was given to current MCMC residents before POCUS curriculum implementation. Overall, residents had low confidence in common outpatient POCUS procedures and techniques.

Proposed Methodology



Sample Survey

What is your comfort level performing the following exams with POCUS?

Exam Type	Not Comfortable	1	2	3	4	5	Can Readily Perform Independently
eFAST exam							
Not Comfortable	1	2	3	4	5		
Can Readily Perform Independently							
2nd/3rd Trimester Ultrasound- Fetal Presentation, AFI, and Fetal Biometry							
Not Comfortable	1	2	3	4	5		
Can Readily Perform Independently							
Early Pregnancy Dating Ultrasound							
Not Comfortable	1	2	3	4	5		
Can Readily Perform Independently							
Soft Tissue Examination - Abscess							
Not Comfortable	1	2	3	4	5		
Can Readily Perform Independently							
Musculoskeletal (MSK)							
Not Comfortable	1	2	3	4	5		
Can Readily Perform Independently							
AAA screening							
Not Comfortable	1	2	3	4	5		
Can Readily Perform Independently							
Pulmonary							
Not Comfortable	1	2	3	4	5		
Can Readily Perform Independently							

References

- Smallwood, Nicholas, and Martin Dachselt. "Point-of-care ultrasound (POCUS): unnecessary gadgetry or evidence-based medicine?" *Royal College of Physicians*, vol. 18, no. 3, 2018, pp. 219-224. [PUBMED](#).
- Bornemann, Paul, and Tyler Barreto. "Point-of-Care Ultrasonography in Family Medicine." *American Family Physician*, vol. 98, no. 4, 2018, pp. 200-202. <https://www.aafp.org/pubs/afp/issues/2018/0815/p200.html>.
- Hashim, Ahmed, et al. "The utility of point of care ultrasonography (POCUS)." *Annals of Medicine and Surgery*, vol. 71, no. 102982, 2021. <https://doi.org/10.1016/j.amsu.2021.102982>.
- Accreditation Council for Graduate Medical Education. *ACGME Program Requirements for Graduate Medical Education in Family Medicine*. 2022. https://www.acgme.org/globalassets/pfassets/programrequirements/120_familymedicine_2023.pdf.
- American Academy of Family Physicians. *Point-of-Care Ultrasound: Recommended Curriculum Guidelines for Family Medicine Residents*. American Academy of Family Physicians, 2021. https://www.aafp.org/dam/AAFP/documents/medical_education_residency/program_directors/Reprint290D_POCUS.pdf.

Disclaimer:
This work was supported in whole or in part by a grant from the Texas Higher Education Coordinating Board (THECB). The opinions and conclusions expressed in this document are those of the author(s) and do not necessarily represent the opinions or policy of the THECB.