

# HOCUS POCUS: Introducing The Magic Of Ultrasound To Family Medicine Residents

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## Background

- Point of Care Ultrasound (POCUS) is a rapidly evolving technology that has become an essential diagnostic tool that can improve clinical outcomes, increase efficiency of care, and lower costs.<sup>1</sup>
- In 2018, the American Academy of Family Physicians recommended that Family Medicine (FM) residency programs implement a POCUS curriculum<sup>2</sup>, however, many have yet to do so.<sup>3</sup>
- The authors explore the initial implementation of a POCUS curriculum into our FM residency program and evaluate its impact on resident knowledge, confidence, and patient care.
- Public Health Implications: Developing a POCUS curriculum will further assist family medicine residents in practicing cost-effective primary care while reducing morbidity and mortality.

## Quality Improvement Objectives

- Study Aim: determine if implementation of a formal POCUS curriculum utilizing AAFP's guidelines improved resident comfort with POCUS in regards to: medical decision making, patient evaluation, and treatment.
- Data obtained from this study was used to determine if it would be beneficial to implement a formal POCUS curriculum for all family medicine residents the next academic year (2023-2024).
- Quality Improvement Model: PDSA model (Plan, Do, Study, Act) for this study. The authors focused on the Plan and Do phases of the model.

## Methods

- This initiative was a retrospective observational cohort study of family medicine residents.
- Primary intervention: Hands-on interactive POCUS training sessions at the Rochester Academic Family Medicine Residency Clinic
- Timeline: November 1, 2022 to present
- The study has consisted of three 1-hour sessions that were guided by the Principal Investigator
- Participation was voluntary and informed consent was obtained for each participant. Anonymized surveys were collected prior to and after each intervention assessing resident confidence in: using and interpreting POCUS, medical decision making, patient evaluation, and treatment. Surveys utilized a 5-point scale

## Results

- There were three POCUS sessions with 9 attendees each. Surveys were voluntary and were completed prior to and following each session.
- Scores were compared from the pre-session survey 1 (N=7) and post-survey 3 (N=6). See Tables 1-3 below.
- Most residents had between 0-10 hours of cumulative POCUS exposure prior to starting residency.
- Prior to the first session, resident confidence in evaluating a patient using POCUS averaged 1.29 (0.49). This increased to 2.33 (1.21) by the end of the third session.
- Confidence in medical decision-making based on POCUS findings was 1.71 (1.25) prior to the first session and increased to 3.17 (0.75) after the third session.
- With regards to providing therapeutic intervention, resident confidence was 1.71 (1.25) prior to the first session and increased to 3.17 (0.75) at the end of the third session.
- Before and after every session, residents agreed or strongly agreed that improving confidence in using and interpreting POCUS can improve quality of care and allow for more cost-effective care.
- Residents generally agreed or strongly agreed that hands-on training and pre-recorded videos could improve confidence in the use of POCUS.

Resident confidence in:	Pre-Session 1			Post-Session 3		
	N	Mean	SD	N	Mean	SD
Evaluating patients based on POCUS	7	1.29	0.488	6	2.33	1.21
Medical decision-making based on POCUS		1.71	1.25		3.17	0.753
Providing intervention based on POCUS		1.71	1.25		3.17	0.753

Items scored as 1 = not at all confident, 2 = slightly confident, 3 = moderately confident, 4 = very confident.

Improving confidence in using and interpreting POCUS will help me to:	Pre-Session 1			Post-Session 3		
	N	Mean	SD	N	Mean	SD
Better treat patients	7	4.71	0.488	6	4.8	0.477
Provide more cost-effective care		4.24	0.690		4.5	0.548

Items scored as 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

Survey question	Pre-Session 1			Post-Session 3		
	N	Mean	SD	N	Mean	SD
Watching pre-recorded videos will help improve confidence in using/interpreting POCUS.	7	3.86	0.690	6	4.33	0.816
Hands-on training will help improve confidence in using/interpreting POCUS.		4.86	0.378		5.0	0.0
Providing int interest in attending in-person sessions that provide hands-on POCUS training attention based on POCUS.		4.86	0.378		4.83	0.408

Items scored as 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

## Results

- These data show an increase in resident confidence with utilizing POCUS in an ambulatory setting after our POCUS curriculum was implemented.
- These data also demonstrate a shared understanding among residents that improving confidence in use of POCUS can improve quality and cost-effectiveness of care, and that hands-on and video sessions can be valuable for improving confidence in POCUS.
- The curriculum is not yet complete and more sessions are scheduled for this academic year. We hope to see additional growth in resident confidence as more POCUS sessions take place.

## Discussion

- Limitations of this study: small sample size and number of sessions
- How we plan to address limitations: expand the number of training sessions and participants
- Future goals: to implement a formal POCUS curriculum at WSU FM Residency Program beginning next academic year (2023-2024)



Figure 1 and 2: FM residents participating in POCUS curriculum.

## References

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