

Assessing Internist Competency in Point of Care Ultrasound Using the Entrustable Professional Activity Framework

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Background and Rationale

- Point of care ultrasound (POCUS) is an important clinical skill in internal medicine (IM) and requires robust methods to assess competency.
- This research aimed to:
 - Develop an Entrustable Professional Activity (EPA) framework for POCUS competency assessment
 - Develop an assessment instrument based in that framework
 - Determine the validity, reliability, and feasibility evidence supporting the use of this EPA-based assessment method for IM learners in the clinical setting.

Methods

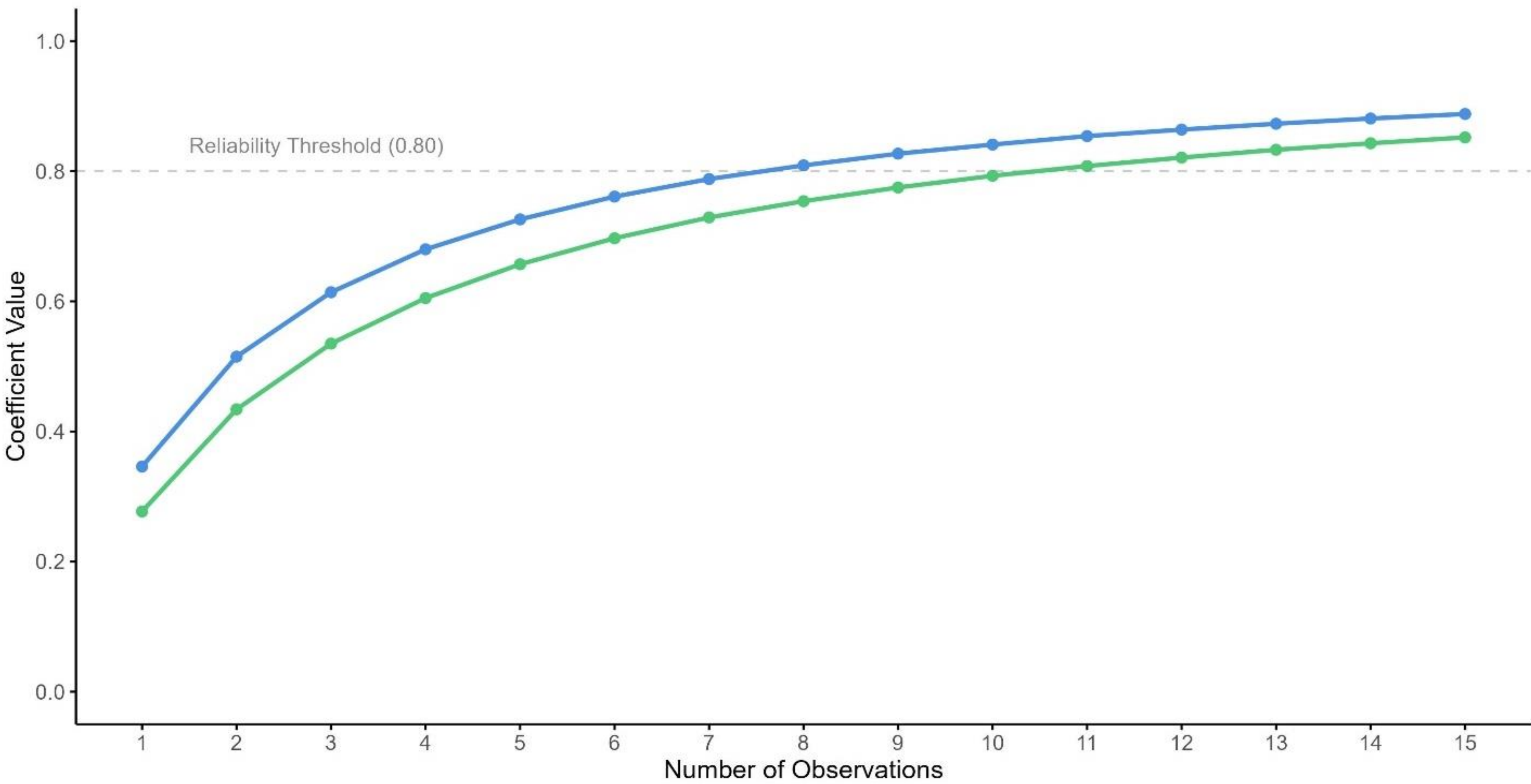
- An expert panel of seven IM POCUS educators guided the development of the EPA framework and assessment instrument.
- We evaluated the EPA assessment instrument in clinical practice across three U.S. academic sites, where trained raters assessed competency in IM learners at the bedside.
- We analyzed the data using correlation, Generalizability (G-) study, and Decision (D-) study statistics to generate evidence for the validity, reliability, and feasibility of the instrument.

Results

Table 1: Abbreviated description of the IM POCUS EPA .

Title	Assessing the acutely ill patient using POCUS
Required knowledge, skills, and attitudes	1)Communicate indication, process, and results to patient in patient centered way.
	2)Properly clean/disinfect machine.
	3)Initiate a study by entering patient information, selecting probe and exam preset.
	4)Understand the indications for the scan.
	5)Optimize images using patient positioning, knowledge of anatomy, and knobology.
	6)Acquire standard images, including scanning through entire area of interest.
	7)Store standard images and clips.
	8)Assess image quality and know pitfalls/ limitations for the specific POCUS application.
	9)Accurately interpret images, including key findings and artifacts.
	10)Integrate image interpretation with known clinical factors to determine next steps in management.
	11)Recognize the need for additional support, expertise, or alternative imaging.
	12)Able to appropriately manage unexpected or unknown findings.

Figure 1. Reliability by number of observations for clinical syndromes



Results (continued)

- The authors developed the EPA, “Assessing the acutely ill patient using POCUS”, using a structured process,
- We performed a total of 604 assessments on 48 unique learners and the 10 clinical syndromes identified by the expert panel
- The variance component attributed to learners ranged from 27.7%-31.4%.
- The estimated number of observations needed to obtain a reliability index of 0.8 ranged from 11 for clinical syndromes to 9 for single organ practice studies.
- The time to complete the supervisory scale and provide feedback to learners was 4.65 minutes.

Conclusions

- We developed an EPA and EPA based assessment instrument for workplace-based assessments of IM POCUS learners.
- The analysis generated validity, reliability, and feasibility evidence that support competency assessment of IM learners using POCUS at the bedside.
- This assessment method is anticipated to have high utility for IM programs seeking to assess POCUS learner competence.

References

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