

14 Visual Estimation of Left Ventricular Ejection Fraction by Emergency Medicine Residents is More Accurate in Emergency Department Patients

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Background: Point of Care Echocardiography is frequently performed by Emergency Physicians (EPs) to guide patient care and make clinical decisions by evaluating left ventricular systolic function by calculating ejection fraction (EF).

Objectives: The objective of this study is to compare EM residents' estimations of EF using various described techniques to patients' recent comprehensive echocardiograms (CE).

Methods: This is an observational, prospective, cohort study to evaluate resident accuracy of estimation of EF using the methods of visual estimation (VE), fractional shortening (FS), and E-point septal separation (EPSS). Patients were enrolled at a Level 1 Trauma Center from September through December 2022, and inclusion criteria were patients who were admitted for chest pain or shortness of breath. VE was performed using estimation of change in LV diameter, myocardial thickening, and gross mitral valve excursion. VE was categorized as normal (>50%), mild/moderately depressed (30-50%), and severely depressed (<30%). FS and EPSS were calculated using M-mode in the standard fashion as previously described in the literature. Patients had CE within 3 months and results were compared with residents' findings. Data was analyzed using descriptive statistics and unweighted K.

Results: VE was able to be obtained in 29, FS in 26, and EPSS in 25 patients. VE performed best with 83% accuracy compared to CE, with an unweighted K of 0.71 (95% CI 0.47-0.93). FS was 68% accurate compared to CE, with an unweighted K of 0.37 (95% CI 0.05-0.70). EPSS was 57% accurate compared to CE, with an unweighted K of 0.44 (95% CI 0.15-0.73). Of the three methods performed, 94% of EM residents believed visual inspection was the easiest. Residents were also surveyed on which method they thought to be most accurate, and the results were VE (37%), FS (31%), and EPSS (31%).

Conclusions: VE of EF is easier to perform and is more accurate among novice learners, with better agreement with CE.

15 Don't Get Your Signals Crossed: Preference Signaling in the 2023 Emergency Medicine Match

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Background: Preference signaling was a new addition to the 2022-23 EM residency match. Applicants were allowed five signals that alerted programs of their interest and were considered by programs when granting interviews. To our knowledge, an examination of the applicant experience around preference signaling in EM has yet to be described in the literature.

Objectives: We aimed to determine how applicants utilized the signals and whether or not the signaling process correlated with applicant anxiety.

Methods: This was a retrospective cross-sectional, survey-based study that examined a convenience sample of all applicants who applied to two urban academic EM residency programs – one on the East Coast and one on the West. Applicants were asked to complete a voluntary survey following the results of the 2023 Match.

Results: 427 survey responses were received (21% response rate). 97% of applicants used all five of their signals. When asked how applicants allotted their signals, the most frequent considerations were a program's geographical location (mean = 4 signals, 95% CI: 3.9, 4.1) and perception of the program's training rigor (mean = 4.4, 95% CI 4.3, 4.5)(table 1). 30.6% of applicants reported that the signaling process decreased anxiety surrounding the match (table 2). The mean change in anxiety level from prior to application submission to after rank list submission was determined to be -1.02 (95% CI: -1.32, -0.73) on a scale of 1-10. A negative correlation between the percentage of signaled programs yielding interview invitations and anxiety after rank list submission was observed ($\rho = -0.17$; $p = 0.0018$).

Conclusions: Applicants considered a combination of factors when assigning signals to programs. Reduced applicant anxiety correlated with higher interview rates from signaled programs. Limitations include potential confounding variables (e.g., a less competitive match year) as well as the retrospective nature of our data collection.

Table 1. Considerations utilized by applicants when deciding which programs to signal.

Of the 5 signals applicants were allotted, how many were used . . .	N	Mean	SD	95% CI
...for geographical considerations?	377	4.0	1.3	(3.9, 4.1)
...to apply to "reach"/more competitive programs?	365	2.3	1.1	(2.2, 2.5)
...to apply to "safety" programs?	257	1.9	0.9	(1.8, 2.0)
...to apply to programs whose strengths align with applicant's career interests?	348	3.9	1.3	(3.7, 4.0)
...to apply to programs that applicants perceived as offering strong clinical training?	377	4.4	1.0	(4.3, 4.5)

Table 2. Effect of the ability to send program signals on applicant self-reported anxiety during the match.

		Frequency (N = 427)	Percent (100%)
How did the signaling process affect applicants match anxiety?	It did not change my outlook	203	47.5%
	It made me a little less anxious	124	29%
	It made me a little more anxious	54	12.7%
	It made me much less anxious	10	2.3%
	It made me much more anxious	7	1.6%
	Missing	29	6.8%

16 Beyond the Requirement: A Novel Patient-Follow Up Report

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Background: Until now, residents were required to perform patient follow-ups as part of practice-based learning and improvement. Most commonly a patient follow-up log (PFUL) was used.

Objectives: We sought to provide residents patient follow-ups in an efficient, value-added manner, and hypothesized that our novel patient follow-up report (PFUR) would be better received than the previous FUL.

Methods: The PFUR, sent monthly via email, is automatically generated based on specific criteria in the electronic medical record. The PFUR includes five non mutually exclusive categories of cases: patients who were discharged and readmitted within 72 hours, patients with certain diagnoses, patients who expired during the hospital stay, and patients who were upgraded to the intensive care unit within 24 hours of admission, and patients independently flagged for inclusion. Pre and post surveys were sent to the senior post-graduate year (PGY) residents. PGY-1s were excluded as they had not used the PFUL.

Results: Four months following implementation, 1436 total cases were included on the PFUR, an increase from the previous average of 105. Across all PGYs, the majority (19.8%) of cases were ICU upgrades, followed by those diagnosis-based (16.7%) and those that expired that encounter (12.3%). On average, 9.57% of total patient encounters met criteria for the PFUR. Fourteen of the eligible 28 residents responded to the surveys. The PFUR had an average value

rating of 4.36, compared to the PFUL rating of 1.64. The PFUR was preferred by 90% of the residents, and 82% felt that it impacted the clinical care they provide. Subjective evaluation of the PFUR found it, "consolidated, less forced, and exponentially more helpful for learning."

Conclusion: The novel PFUR has already proven to be more comprehensive, accessible and more highly valued than PFUL. Programs looking to continue to provide the benefit of patient follow-ups should consider a similar report.

17 Impact of a Departmental Guideline and Educational Intervention on Droperidol Use in the Emergency Department

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Background: In 2001, the FDA issued a Boxed Warning for droperidol due to concerns for QTc-interval prolongation. In response, its use has decreased and even been abandoned by many EDs. Based on more recent research finding these risks to be overstated, AAEM and ACEP have issued guidelines affirming that droperidol can be safely administered in the ED to treat headache, nausea, and agitation. Departments may be considering the best way to reintroduce this medication to ED practice.

Objectives: This study assesses droperidol use patterns in the ED following a multimodal educational intervention based on a new departmental guideline.

Methods: This is an observational cohort study across 3 EDs in a university healthcare system. Data was collected by electronic medical record (EMR) review. An ED guideline for droperidol use was created (Figure 1) and added to the EMR for reference on shift. An educational session about the history, usage, and safety of droperidol was presented during resident didactics and faculty meeting. A recorded version was added to the departmental YouTube page and emailed to residents and faculty along with the guideline. The primary outcome was droperidol usage five months pre- and post-intervention, with secondary outcome of use by indication.

Results: At five months post-intervention, droperidol use increased significantly: 27 doses in the pre-intervention period to 238 after (p-value < 0.0001). Table 1 shows pre- and post-intervention usage by indication.

Conclusions: Droperidol is an effective medication that fell out of favor because of questionable evidence. Now that the safety of this medication has been demonstrated, departments may consider the best way to reintroduce this treatment to practice and educate providers on its use. In this study, a multimodal educational intervention, coupled with the implementation of a departmental guideline, has led to a significant increase in the appropriate utilization of droperidol in the ED.