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 (ρ= -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.