

Measuring Left Ventricular Ejection Fraction Using E-Point Septal Separation: A Bedside Tool for Family Medicine Residents. Oral Presentation

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Abstract

Published 03/30/2026

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Categories: Family/General Practice

Keywords: e-point septal separation, lvef (left ventricular ejection fraction), point of care cardiac ultrasound

How to cite this abstract

Alaziz M, Nazneen R (March 30, 2026) Measuring Left Ventricular Ejection Fraction Using E-Point Septal Separation: A Bedside Tool for Family Medicine Residents. Oral Presentation. Cureus 18(3): a1756

Abstract

Introduction: Challenging factors such as financial barriers, time, and location can delay obtaining standard echocardiography; thus, primary care physicians can use Cardiac point-of-care ultrasound (POCUS) to help overcome these challenges. This study assesses whether cardiac POCUS can be used to evaluate cardiac function using mitral valve E-point septal separation (EPSS).

Method: Seventy patients aged ≥ 18 years admitted to the inpatient facility from July 2024 to March 2025 were included. LVEF was obtained using EPSS. Sensitivity and specificity were calculated for an EPSS cutoff of > 10 mm for reduced LVEF and ≤ 7 mm for normal LVEF. A linear regression model and Receiver operating characteristics (ROC) was used to assess the EPSS of 10 mm and 7 mm to distinguish reduced and normal LVEF, respectively. This study was approved by the hospital ethic committee.

Results: The sensitivity and specificity of EPSS ≤ 7 mm for LVEF $> 55\%$ was 95.8% (CI 78.88% - 99.89%) and 93.5% (CI 82.10% - 98.63%) respectively, and the sensitivity and specificity of EPSS for greater than 10 mm for LVEF $< 50\%$ was 95% (CI 75.13% - 99.87%) and 94% (CI 83.45% - 98.75%) respectively. The linear regression model showed an adjusted R square 0.704 (P-value < 0.001) for EPSS predicting LVEF. From the ROC curve, the area under the curve (AUC) was 0.962 for EPSS 10 mm, and AUC was 0.985 for EPSS of 7 mm.

Conclusion: Mitral valve EPSS is an effective method that can provide an instant assessment of LVEF using cardiac point-of-care ultrasound.