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A Continuous, 2-step in Situ Approach for Assessing ECG Interpretations of Senior EM Residents

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#### **Authors**

Mempin, Marion-Vincent  
Sheth, Sheetal  
Misch, David  
[et al.](#)

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## 55 Validity Evidence for the Standard Letter of Evaluation in Emergency Medicine

*Kukulski P, Ahn J / University of Chicago*

**Objective:** This study presents a systematic review of the published validity evidence of the SLOE using Messick's framework for construct validity: 1) content, 2) response process, 3) internal structure, 4) relation to other variables, 5) consequences of testing.

**Abstract:** The SLOE is the most important data point considered by programs when selecting applicants for interview and, subsequently, ranking for match. Given its success, other specialties have adopted a SLOE format. However, no study has examined the validity evidence for the SLOE.

This study presents a systematic review of the published validity evidence of the SLOE using Messick's framework for construct validity: content, response process, internal structure, relation to other variables, consequences of testing.

PubMed was searched for "(sloe OR slor) emergency medicine" returning 20 papers. 4 papers were excluded as they were not related to validity.

While no published literature regarding content validity for the SLOE exists, the development process of the SLOE provides evidence for content validity. 8 studies related to response process exist; 2/8 found evidence supporting response process validity. 1 study is published addressing the validity of the SLOE's internal structure; this study weakly supported internal structure validity. 3 studies examining the SLOE's relation to other variables exist. 2/3 studies found the SLOE to be positively correlated with future success, while 1/3 did not find the same positive correlation. There are 2 studies examining the consequences of the SLOE; both found that the SLOE is the most important part of the application.

Overall, we found the validity evidence for the SLOE lacking. While the SLOE has good evidence for content validity due to its creation process, there is not robust evidence for any other aspect of validity. However, the SLOE remains a valuable tool for EM programs, as head to head studies between the SLOE and the narrative letter of recommendation demonstrated the SLOE's superiority. It will be important to consider and incorporate aspects of construct validity as the specialty continues improve the SLOE. Further, other specialties should take this into consideration when creating SLOEs of their own.

### *Innovations Abstracts*

## 1 A Continuous, 2-step in Situ Approach for Assessing ECG Interpretations of Senior EM Residents

*Mempin M, Sheth S, Misch D, Elagandhala A / New York Presbyterian - Queens; Maimonides Medical Center; New York Presbyterian - Queens*

**Objective:** To develop a curriculum that teaches senior EM residents to recognize life-threatening STEMIs despite the cognitive load of working in a busy and disruptive environment. Residents will be continuously assessed on each ECG with real-time feedback while maintaining patient safety.

**Abstract:** The rapid recognition of ST segment elevation myocardial infarctions (STEMIs) and life-threatening dysrhythmias on electrocardiograms (ECGs) is a core skill in Emergency Medicine (EM). Traditional methods of teaching ECGs does not account for the mental fatigue of a shift caused by loud noises/alarms, constant interruptions, and the stress of continuously multitasking. There exists an educational need to teach the rapid recognition of STEMIs and dysrhythmias despite the cognitive load of working in the ED.

We designed a two-step process to teach and evaluate ECG competency for our senior residents (PGY3s in a 3-year program).

**Phase One:** Residents took a pre-test to evaluate whether an ECG would provoke them to activate the cardiac catheterization lab, call an urgent cardiology consult, or take no immediate action. Residents were then given a study guide which included vetted #FOAMed websites, traditional reading material, and an originally created interactive web-based ECG course. After one month, residents took a timed post-test and were taught how to document ECGs for both medical and billing reasons.

**Phase Two:** Residents who scored above 85% on the post-test and did not miss more than one STEMI were allowed to sign ECGs for patients in the ED and designated with a special ID badge. This was a process that was previously limited to attending physicians only. The resident wrote their interpretation on the ECG, with at least 4 elements for documentation, and had it reviewed by an attending within 5 minutes. This provided an opportunity for immediate feedback regarding the accuracy of ECG interpretation while maintaining a high level of patient safety.

This method of combining didactics and self-study with clinical application and immediate feedback for reinforcement is a novel approach for assessing senior residents' abilities and to train them for attending responsibilities.

## 2 A Module-Based Novel Approach to Electrocardiogram Interpretation for Emergency Medicine Residents

*Koutsoubis A, Fishbein E, White J / Sidney Kimmel Medical College at Thomas Jefferson University*

**Objective:** The objective of this study was to create an online module that teaches an accurate way of interpreting an ECG for use in medical education, that allows for pragmatic, pattern recognition of ECG abnormalities.

**Abstract:** Interpreting a 12 lead ECG with accuracy is an essential skill for emergency medicine residents. Traditional teaching, based on "rate, rhythm, axis", doesn't