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SKMC Class of 2022: SI/ME Abstract

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

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Purpose: In the Emergency Department, accurate ECG interpretation is essential as many conduction abnormalities are treatable and can lead to death if inaccurately diagnosed. Learning how to read a 12-lead ECG is part of medical education, taught through the following approach: rate, rhythm, axis. In the ED, this tedious approach doesn't relay important information that should be garnered from the ECG with accuracy. Currently, resources for residents to improve ECG interpretation skills are limited. The purpose of the study was to design a module that teaches an accurate way of interpreting an ECG, that allows for pragmatic, pattern recognition of ECG abnormalities.

Methods: The module, created on Rise360, teaches a novel way of ECG interpretation through the following steps: Is it sinus? Is it wide? Is there ischemia? Does this herald sudden death? The module reviews electrical abnormalities while teaching the novel approach. Incorporated knowledge checks utilize different learning styles and allow learners to evaluate their progress. A pre-module and post-module ECG interpretation test was used to determine the efficacy of the module. The tests included a variety of ECGs based on a gold standard interpretation by an electrophysiologist. ED Residents had one week to complete the module between the tests.

Results and Conclusions: There was a 21.8% increase in the median percent correct after the module ($t= 5.48, p < 0.0001$). Subjective data demonstrated that after the module residents utilized the novel approach, were more confident in interpreting ECGs and would use it as a resource in the future.