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Creation and Evaluation of Free Open Access Medical Education (FOAM) Resources: Electrocardiogram Triage as a Virtual Infographics Challenge in EM Resident Didactic Conference

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## 14 Creation and Evaluation of Free Open Access Medical Education (FOAM) Resources: Electrocardiogram Triage as a Virtual Infographics Challenge in EM Resident Didactic Conference

Kathryn Fisher, MD; Anisha Turner, MD; Malford Pillow, MD, MEd

**Learning Objectives:** Our objective for this initiative was to create a novel and interactive activity that would be feasible in the virtual setting and challenge the residents to collate and evaluate information to create an infographic resource, all while reviewing FOAM evaluation and the content area selected.

### Abstract:

Emergency Medicine (EM) residents utilize free open access medical education (FOAM) sources, and many create them to distribute publicly. They often lack training on creation of educational resources despite serving in educator roles within their communities. During the COVID-19 pandemic, use of virtual resources increased with medical professionals seeking information from FOAM sources. The transition to virtual didactic conferences posed the challenge of creating active learning opportunities. Here we present a novel, interactive FOAM creation challenge for EM residents. Our objective was to create a unique challenge where residents would compete while creating, evaluating and disseminating FOAM resources. In May 2020, all 42 EM residents were placed in groups of 5-7 with diversity in training level and were tasked with creating a single-page infographic using free online sites to be used on-shift as a point-of-care reference. Groups met virtually during conference. We chose ECG interpretation and triage in the emergency department as the topic. At our institution, PGY-3 residents are allowed to “sign” triage 12-lead electrocardiograms (ECGs), a process including determining if it meets ST-elevation myocardial infarction (STEMI) criteria and identifying other pathologies needing immediate intervention. We further subdivided the topic into determination of STEMI, STEMI equivalents, STEMI mimics and other emergent findings. The residents and faculty jointly created and validated a novel grading rubric (Figure 1). Infographics from each team were then de-identified and assessed using the rubric and disseminated.

This innovation can be utilized in any level and on any topic in medical education. It created an interactive activity challenging residents to work together virtually while applying knowledge to create usable on-shift resources. This intervention was met with positive feedback on its novelty, ability to make virtual learning interactive, and its relevance.

The figure shows a screenshot of an online grading rubric. It consists of several sections, each with a question and a 5-point Likert scale. The questions are:

- Which infographic are you evaluating? (with a dropdown menu)
- What is your impression of its visual appeal? (Is it an appealing resource to you?)
- What is your impression of the content selection? (Is the content covered completely and accurately?)
- What is your impression of the usability of the EKG infographic? (How likely are you to use on-shift?)
- Is the infographic clearly evidence-based? (Do you trust its sources?)
- What is the infographic's utility? (Is it relevant to you?)

Each question has a 5-point scale with radio buttons. The scales are labeled with descriptive terms at the ends: 'unorganized, unappealing' to 'visually appealing, ideal formatting' for visual appeal; 'incomplete coverage of content area' to 'complete coverage of content area' for content selection; 'difficult-to-use on shift' to 'easy-to-use and ideal for on-shift use' for usability; 'unclear sources, not up-to-date, or not evidence-based' to 'clear sources cited in-text with up-to-date sources' for evidence-based; and 'information not relevant to EKG interpretation and triage in Emergency Medicine' to 'information covered extremely relevant to EKG interpretation and triage in EM' for utility.

Below the questions, there are two sections for scoring and feedback:

- Total Score (out of 25 possible points): Your answer
- Additional comments or feedback?: Your answer

**Figure 1.** Online grading rubric utilized based on 5 categories: content, usability, evidence-based, and utility.

## 15 Creation of an Innovative Quality and Patient Safety Curriculum for an Emergency Medicine Residency during COVID-19

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**Learning Objectives:** Our goal was to create a Quality and Patient Safety Curriculum for EM Residents that included interactive lectures, resident projects, infographic emails, and simulations. This curriculum was developed during COVID-19 and therefore was adapted for virtual and in-person socially distant education.

### Abstract:

**Introduction/Background:** The American College of Graduate Medical Education (ACGME) requires residents develop skills to analyze quality assessment methods; identify system errors; and participate in quality improvement projects. When surveyed, 52% of EM residencies had <4 hours/year of