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FOAM Resources in a Flipped Classroom Educational Series

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Table 1. Curriculum Overview.

| EKG Fundamentals Curriculum Schedule | | |
|--------------------------------------|-----------------|---|
| Session | Challenge EKG # | EKG Core Content Review |
| 1 | Core 1 | How to Read an EKG (NSR) |
| 2 | Core 2 | Approach to Ischemia |
| 3 | EKG 1 | Anterior STEMI |
| 4 | EKG 2 | Posterior STEMI |
| 5 | EKG 3 | Inferior STEMI, RV STEMI |
| 6 | EKG 4 | LBBB/Pacer (Sgarbossa) |
| 7 | EKG 5 | STEMI Mimics (HyperK, Pericarditis) |
| 8 | EKG 6 | STEMI Mimics (Isolated aVR, Benign Early Repol) |
| 9 | Core 3 | Approach to Syncope |
| 10 | EKG 7 | WPW |
| 11 | EKG 8 | Brugada |
| 12 | EKG 9 | Long QT |
| 13 | EKG 10 | PE/RV Strain/RVH |
| 14 | EKG 11 | LVH/HOCM |
| 15 | Core 4 | Approach to Bradyarrhythmias |
| 16 | EKG 12 | 2nd Degree Type II, 3rd Degree AV Block |
| 17 | Core 5 | Approach to Tachyarrhythmia (Sinus Tach) |
| 18 | EKG 13 | AFib/Flutter with RVR |
| 19 | EKG 14 | SVT |
| 20 | EKG 15 | VT/VF |
| 21 | EKG 16 | RBBB/LBBB |
| 22 | EKG 17 | TCA Overdose |
| 23 | EKG 18 | Digoxin Toxicity |
| 24 | EKG 19 | Pacemaker Malfunction |
| 25 | EKG 20 | Cerebral T Waves |

EKG Fundamentals is available as part of the **Emergency Medicine Foundations** curriculum. Open access to curriculum challenge and answer documents is available on the course website: www.emergencymedicinfoundations.com

Table 2. Pilot Survey Data.

| Survey Item (1- Strongly Disagree, 3- Neutral, 5- Strongly Agree) | Agree or Strongly Agree | Mean |
|--|-------------------------|------|
| Weekly Challenge EKGs were relevant and helpful for learning fundamental knowledge within our specialty. | 28/30 | 4.23 |
| Weekly Challenge EKGs had a positive impact on my clinical performance. | 23/30 | 3.90 |

26 Evaluation of Incoming Emergency Medicine Residents' Ability to Perform Level One Milestone Tasks as Outlined in "The Emergency Medicine Milestone Project"

Dougherty K, Kellar J /Lakeland Health, Saint Joseph, MI
Background: In 2012 the ACGME released "The

Emergency Medicine Milestone Project," a set of milestones used in evaluating and tracking resident competency. EM interns are expected to have achieved level one milestones before beginning their residency program. Unfortunately, research shows that a significant number of interns struggle to meet these goals. Thus the residency program is tasked with bringing these interns to a level of basic competency prior to direct involvement with patient care. Our study identified each intern's perceived competence and actual ability to perform the tasks as outlined in the Emergency Medicine Milestone Project, milestone 14, level one, including: perform venipuncture, place peripheral IV line, and perform arterial puncture.

Educational Objectives: We sought to identify incompetent skills and effectively remediate these skills as identified in the EM Milestones Project.

Curricular Design: After completing a self-assessment tool identifying perceived competency, interns completed skill-testing stations, establishing their actual skill levels. Regardless of their perceived or actual competency, interns then viewed a commercially available video training series (Elsevier's Procedures Consult) and participated in nurse-educator led instructional stations using simulation models. After such instruction, interns then repeated the previous skill-testing stations. As a final step interns completed a post-instruction, self-evaluation tool to assess their perceived competence. Using these tools, we demonstrated that we could effectively assess skill level and instruct to competency over a short period of time. Our data revealed at least one incompetent skill in each of the interns, but after instruction each intern was competent and confident to perform each of the skills tested.

Impact/Effectiveness: We conclude that this method is efficient and effective in assessing procedural skills and quickly bringing EM interns to a minimum level of competency. By using commercially available training videos and bedside nursing instructors, we have identified a standardized and reproducible method of assessment and instruction. We hypothesize that this method could provide a framework for procedural skill assessment and instruction for EM residents or medical students.

27 FOAM Resources in a Flipped Classroom Educational Series

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Background: The ACGME has published guidelines for the implementation of asynchronous learning and the CORD Individualized Interactive Instruction (III) Taskforce has developed best practices to guide medical educators. As noted in the Taskforce report, many III strategies fail to meet requirements for Program Director monitoring, faculty oversight, evaluation, and efficacy assessment.

Educational Objectives: We sought to develop a structured

educational intervention whereby residents could review curated Free Open Access Medical Education (FOAM) resources covering both core content and innovation while meeting III aims of oversight, evaluation, and monitoring.

Curricular Design: An educational series providing III using FOAM resources was created by pairing monthly core content with the Academic Life in Emergency Medicine (ALiEM) Approved Instructional Resources (AIR) series. A subset of resources addressing 1-2 specific topics requiring 1-2 hours of review was selected. During a 50-minute session, residents were divided into teams with representation across academic years to complete an individual, and then group, quiz following Team-based Learning (TBL) methodology. Quiz questions were faculty-developed and from ALiEM materials. During team activities, quiz questions were discussed and each team’s consensus answer was presented to the room. Faculty led a guided discussion based on resident responses; prepared lectures were not required as guided conversation covered planned content. Use of cumulative scoring over the academic year encouraged adequate resident preparation. III sessions are incorporated into the traditional didactic calendar, preventing conflict with clinical and other educational activities.

Impact/Effectiveness: This III series has been well-received by residents and appears to have increased engagement with core content material. Group discussion and TBL quizzes provide opportunities for senior residents to teach junior colleagues during monitored didactic sessions. Although formal evaluation of intervention efficacy has not been conducted, resident qualitative feedback has been positive including the following comments: ‘very engaging,’ ‘I found myself reading beyond the assigned topics,’ and ‘it’s great working collaboratively with the upper level residents.’ Future evaluation of this flipped format’s efficacy is warranted.

28 Healthcare Disparities

*Okubanjo O, Lovell E /Advocate Christ Medical Center
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Background: Healthcare Disparities refers to differences between population groups as related to health insurance coverage, access to and use of care, and quality of care. Emergency medicine providers encounter healthcare disparities on a daily basis, therefore it is necessary for Emergency Residents to receive formal education on this topic.

Educational Objectives: As healthcare disparities are difficult to identify, define and approach, we sought to create a multi-faceted didactic curriculum. Overall objectives include increasing the comfort level of our Emergency Medicine Residents’ when faced with healthcare disparities, increasing the Residents’ ability to deal with healthcare disparities when encountered, increasing knowledge of healthcare disparities and

its effects on patient care, and recognizing how we can improve our interactions with certain population groups. We aim to create interventions and enact these interventions to reduce disparities and bias, therefore producing higher quality patient interactions, experiences, and outcomes. Lastly, this lecture series aims to be sustainable and reproducible, such that it can be shared and implemented in other emergency medicine residency programs.

Curricular Design: We developed seven one hour interactive informative sessions. Topics include introduction to healthcare disparities, social determinants of health, the clinical encounter, provider factors contributing to disparities, an expert speaker session, implicit bias and cultural competency, and strategies and interventions for improvement (please see supplemental figure).

Impact/Effectiveness: After each lecture, residents anonymously evaluate the lecture and provide comments. These lectures have been met with incredibly positive feedback from the residents, consistently rated in the top quarter of lectures delivered during weekly education conference. After completion of the curriculum, a focused questionnaire will be completed by the residents to gage the full impact of the curriculum. The questionnaire will focus on increased knowledge and ability to identify healthcare disparities, as well as comfort in dealing with healthcare disparities.

Supplemental Figure.

| |
|---|
| Lecture 1: Introduction to Healthcare Disparities |
| <i>Defining the social determinants of health</i> |
| <i>Defining different terms in healthcare disparities</i> |
| <i>Identifying levels of healthcare disparities</i> |
| <i>Why are disparities important</i> |
| <i>Identifying the healthcare vulnerable groups</i> |
| <i>Examples of disparities</i> |
| Lecture 2: Social Determinants of Health |
| <i>Identifying social determinants of health</i> |
| <i>Economic stability</i> |
| <i>Environment</i> |
| <i>Education</i> |
| <i>Food</i> |
| <i>Community and social context</i> |
| <i>Healthcare System</i> |
| Lecture 3: The Clinical Encounter |
| <i>Patient factors</i> |
| <i>Patient mistrust</i> |
| <i>Patient compliance</i> |
| <i>Patient preference</i> |
| <i>Individual factors</i> |
| <i>What influences the HPI</i> |
| Lecture 4: Provider factors that contribute to disparities |
| <i>Medical education</i> |
| <i>Provider demographics</i> |
| <i>Provider experience</i> |
| <i>Provider comfort</i> |
| Lecture 5: Health group expert speaker |
| Lecture 6: Implicit bias and cultural competency |
| <i>Identifying individual bias</i> |
| <i>Physician Bias</i> |
| <i>Patient Bias</i> |
| <i>How to troubleshoot bias</i> |
| <i>Defining cultural competency</i> |
| Lecture 7: Strategies and Interventions |