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Best Innovations & Soundbites from the 2018 CORD Abstracts Oral Presentations

1 Addressing Pitfalls of the Flipped Classroom: An Approach to Purposeful Small Groups and Improved Learner Preparation Using EM Fundamentals

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Background: The flipped classroom approach to resident conference has recently grown in popularity. While designing an intervention using this approach can seem simple, difficulties arise in (1) creating purposeful in-class activities and (2) ensuring learners complete assignments prior to conference.

Educational Objectives: To (1) create in-class activities that facilitate high-quality discussion as rated by faculty and (2) increase learner completion of pre-conference assignments compared to the previous year.

Curricular Design: We created EM Fundamentals, a flipped classroom curriculum featuring seventeen topics. Each topic has consensus-derived learning objectives, curated pre-conference resources, and novel in-class activities. In years past activities were designed by facilitators, which was met with mixed results. Based on this need for increased structure, faculty with educational expertise designed sessions using an array of educational strategies (e.g. think-pair-share, team quiz, mind maps) to target transfer of tacit knowledge. In attempt to increase pre-conference assignment completion, an automated service was used to schedule email reminders to participants. Discussion quality, learner completion of pre-conference work, and satisfaction with small group activities were evaluated with surveys.

Impact/Effectiveness: Fourteen of 16 residents (88% response rate) and 6 of 8 faculty (75% response rate) returned surveys. Satisfaction was rated on a 7-point scale from "extremely satisfied" to "extremely dissatisfied." All faculty were extremely satisfied with small group sessions (n = 6, 100%). Faculty were either extremely (n = 3, 50%) or moderately (n = 3, 50%) satisfied with the discussion created by group activities. Residents reported completion of pre-conference assignments 48% of the time, a modest improvement from the year prior (41%). Most residents were extremely (n = 6, 43%) or moderately (n = 6, 43%) satisfied with small group sessions; the remainder reported slight satisfaction. Realization of the flipped classroom's potential is promoted by careful design of activities by faculty with educational expertise; however, ensuring learner preparation remains a challenge. Future study will include additional incentives, direct monitoring of preparation, and knowledge

assessment using a web-based platform that is currently under development.

2 Emergency Medicine Foundations Asynchronous Learning Pathways: Analysis of Learner Participation and Preferences

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Background: Individualized interactive instruction (III) is a mechanism for emergency medicine residencies to employ asynchronous learning as part of resident conference. The flipped classroom is a popular model for resident education where pre-conference learning may qualify as III; however, resident completion of pre-conference assignments remains a challenge.

Educational Objectives: To maximize learner completion of pre-conference assignments by offering multiple modalities (asynchronous learning pathways, ALPs) in the Emergency Medicine Foundations curriculum. Secondary objectives included characterizing learner preferences and satisfaction with the curriculum.

Curricular Design: Emergency Medicine Foundations (EMF) is an open access flipped classroom curriculum focusing on core content. We created a course website to host curated multi-modal resources for asynchronous learning including traditional and high-yield textbook readings as well as multimedia resources (Table 1). Each pathway covers similar learning topics and requires 1-2 hours to complete. ALP content coordinates with weekly Foundations Meetings, wherein learners engage in small group case-based learning.

Impact/Effectiveness: In the 2016-2017 academic year, 19 sites participated in EMF. We anonymously surveyed enrolled residents in February 2017, and 190 of 275 (69%) responded. Of these learners, 89 reported use of ALPs by their programs. Residents preferred multimedia resources (77%) over traditional text (49%) or high-yield text (35%) (Table 2). The majority of learners (54%) utilized resources from multiple pathways. 83% of learners completed at least 50% of their asynchronous assignments with 71% dedicating between 30 and 60 minutes weekly. Learners also reported high levels of satisfaction with Foundations ALPs and perceived positive impact on clinical performance. Our study supports continued use of asynchronous learning to supplement conference time and suggests that providing multiple modalities and limiting assignments to 60 minutes may best suit resident learners.

Table 1. Learning pathways example.

Foundations Learning Pathways				
Unit	Topics	Traditional Textbook	High-Yield Text	Multimedia
GI	GI Bleeding Esophageal and Stomach Disorders	Rosen's: GIB 245-253 Esophageal Disorders, GERD, PUD 1170-1180 OR Tintinalli's: GIB, Esophageal Emergencies, PUD 503-517	River's: GI Bleed, Esophageal Do, PUD, Perforation p176-186 OR Tintinalli Manual: GIB, Esophageal Emergencies, PUD 207-217	Hippo Videos: Esoph & GIB AND FOAMed: EB Medicine: UGIB UMD: PUD

of Massachusetts - Baystate Health, Springfield, Massachusetts; Cooper Medical School of Rowan University, Camden, New Jersey; University of Missouri-Kansas City School of Medicine, Kansas City, Missouri; University of Maryland, Baltimore, Maryland; University of Wisconsin School of Medicine and Public Health, Madison, Washington

Background: Each year, the number of Emergency Medicine (EM) applicants exceeds the number of residency positions available. Identifying applicants who are at higher risk of not matching can be challenging, and applicants and advisors struggle with how to manage these scenarios. The Council of Residency Directors (CORD) Student Advising Task Force (SATF) recognized the need to categorize common application red-flags and create a set of recommendations to be used as a guide for applicants and their advisors.

Educational Objectives:

- Identify and categorize common application red-flags which put an applicant at-risk of not matching.
- Provide evidence-based advising recommendations to assist at-risk applicants in overcoming those hurdles.
- Identify which applicants need to pursue a backup plan.

Curricular Design: Using existing advising resources, National Resident Matching Program data, and group consensus, members of the CORD SATF identified three broad categories which placed applicants into the at-risk group. Recommendations to address these red flags were developed and compiled into an advising guide and made available online to students and advisors.

The advising recommendations are summarized in Table 1. In general, the best defense is a good offense. The personal statement should be used to address red-flags. All students with identified red-flags are best served by early discussion with their advisors on application strategy and the need for a backup plan. Residency programs are known to use filters to efficiently review applications. If applicants have red-flags that are commonly used as application filters (such as USMLE failure), they will need to be particularly strategic in selecting programs. Students with professionalism issues and those that have a combination of factors, such as lower board scores plus a weaker transcript are advised to proactively pursue a backup plan.

Impact/Effectiveness: The CORD SATF developed advising guidelines to help applicants and advisors address red-flags in the EM residency application. This guide is available online through the CORD website has been endorsed by CORD, Clerkship Directors in Emergency Medicine, & Emergency Medicine Residents' Association with plans to strengthen recommendations through survey data in the future.

Table 2. Survey data.

Learner Preferences		
Which of the following Learning Pathway resources do you use on a regular basis to prepare for Foundations Meetings?		
Rosen's Textbook (15, 17.0%), Tintinalli's Textbook (28, 31.8%), River's Written Board Review (8, 9.1%), Tintinalli's Manual (23, 26.1%), Hippo Videos (68, 77.3%), Other Multimedia Assignments (20, 22.7%)		
On average, what percentage of your chosen Learning Pathway assignment do you complete prior to each Foundations Meeting?		
0% (1, 1.1%), 25% (14, 15.7%), 50% (33, 37.1%), 75% (29, 32.6%), 100% (12, 13.5%)		
On average, how much time do you spend on Learning Pathway assignments prior to each Foundations Meeting?		
0 minutes (2, 2.2%), 15 minutes (5, 5.6%), 30 minutes (18, 20.2%), 45 minutes (15, 16.9%), 60 minutes (30, 33.7%), 75 minutes (4, 4.5%), 90 minutes (14, 15.7%), Other (1, 1.1%)		
Resident Satisfaction with Foundations Learning Pathways		
Survey Item (1- Strongly Disagree, 3- Neutral, 5- Strongly Agree)	Agree or Strongly Agree	Mean
Overall, I am highly satisfied with Foundations Learning Pathways.	87/89 (98%)	4.29
Learning Pathway assignments helpful for learning fundamental knowledge within our specialty.	84/89 (94%)	4.29
Learning Pathway assignments have a positive impact on my clinical performance during Emergency Department shifts.	79/89 (89%)	4.16
Learning Pathway assignments required a reasonable amount of independent work prior to each Foundations Meeting.	75/89 (84%)	4.06
I like being able to choose the Learning Pathway that suits me the best.	79/89 (89%)	4.24

3 Red-Flags are Waving: Recommendations for the Emergency Medicine Applicant At-Risk of Not Matching--on behalf of the CORD Student Advising Task Force

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