

## **UC Irvine**

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Excellence in Ultrasound Education: An Innovative Longitudinal Approach to Bedside Hands-on Ultrasound Teaching

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**Table 1.** Example of Report Data.

Provider	Total Patients	Admit (%)	D/C (%)	Mean Acuity	Median LOS, min	Median Treatment Time, min	Median Decision Time, min
258	195	11%	89%	3.0	272	201	161
280	319	22%	90%	2.9	231	186	123
269	386	20%	90%	2.9	246	205	171
230	290	20%	91%	2.9	224	181	139
298	226	19%	95%	2.8	279	220	166
219	186	15%	94%	3.0	216	188	142
217	200	18%	85%	3.0	242	203	151
262	109	17%	90%	2.9	261	212	166
288	289	19%	91%	2.9	229	189	139
249	367	17%	94%	2.9	239	191	144
223	235	16%	95%	3.0	273	210	167
279	491	21%	95%	2.9	255	198	156
<b>Overall</b>	<b>3293</b>	<b>18%</b>	<b>92%</b>	<b>2.9</b>	<b>244</b> [IQR 162,366]	<b>196</b> [IQR 121,310]	<b>150</b> [IQR 93,239]

## 30 Evidence Based Medicine Longitudinal Track

Joyce M, Wills B, Evans D/Virginia Commonwealth University, Richmond, VA

**Background:** Emergency medicine is one of the newest fields in healthcare and is constantly evolving. Paramount to this is the ability for emergency physicians to remain current with practice changing research. Residency training provides a basic framework of evidence-based medicine (EBM) however additional education and feedback are needed for one to become proficient. The purpose of this curriculum is to add additional training for interested residents that want to improve their ability to practice EBM principles. The curriculum will focus on how to read, analyze, interpret and apply primary literature to the clinical practice of emergency medicine.

**Educational Objectives:** The overall goal of the evidence based medicine track is for the resident to answer a clinical question and create a clinical practice guideline for implementation into the emergency department using primary literature. The clinical practice guideline will follow the structure and format laid out by the ACEP clinical policy development process. This final goal will be met by a series of objectives to complete as the resident progresses. These objectives will develop fundamentals of evidence based medicine, focusing specifically on how to analyze and interpret literature (types of studies, design, data analysis, test characteristics), determine if they should be implemented into daily practice (GRADE criteria, CEBM scoring), and how to write a summary recommendation based on the evidence (ACEP clinical policy).

**Curricular Design:** The track is designed to be a one-year longitudinal supplemental educational opportunity for residents in good academic standing with specific interest in EBM, and provides one clinical shift reduction per ED block. The track is broken down into specific objectives that include tasks to help

prepare the resident for their final project. These include: i) understand and apply diagnostic test characteristics, ii) improve ability to critically analyze medical literature, iii) become proficient in RefWorks, iv) determine a clinical question and complete a clinical practice guideline. Each objective has a measurable competency to allow assessment of progress.

**Impact/Effectiveness:** This track will have a significant impact on resident academic skills training and help develop skills necessary to be a lifelong learner and teacher. Residents who complete this track will have the skills and confidence to interpret literature independently and use this in their daily practice to provide safe and effective therapies supported by literature. This track was implemented in the 2013 academic year and the first resident to complete the track developed a clinical guideline on age-adjusted d-dimer. The resident also developed and mentored all of the journal clubs, and facilitated faculty teaching of EBM principals at resident conference. The following year this resident was awarded a scholarship by the Emergency Medicine Foundation to attend the Emergency Medicine Basic Research Skills course hosted by ACEP. This academic year our second resident is participating in the track.

## 31 Excellence in Ultrasound Education: An Innovative Longitudinal Approach to Bedside Hands-on Ultrasound Teaching

Haney R, Baran E/McGaw Medical Center of Northwestern University, Chicago, IL; Northwestern University, Chicago, IL

**Background:** In 2012 the ACGME included Emergency Ultrasound (EUS) as one of the 23 milestone competencies for graduates of an emergency medicine (EM) residency. Current ACEP EUS Guidelines (2008) stress the importance of emergency physician performed point-of-care ultrasound (POCUS) but do not detail how emergency medicine residencies should teach POCUS. In 2013, the CORD-AEUS consensus guidelines outlined key components of a residency POCUS curriculum and emphasized the importance of “active hands-on learning.”

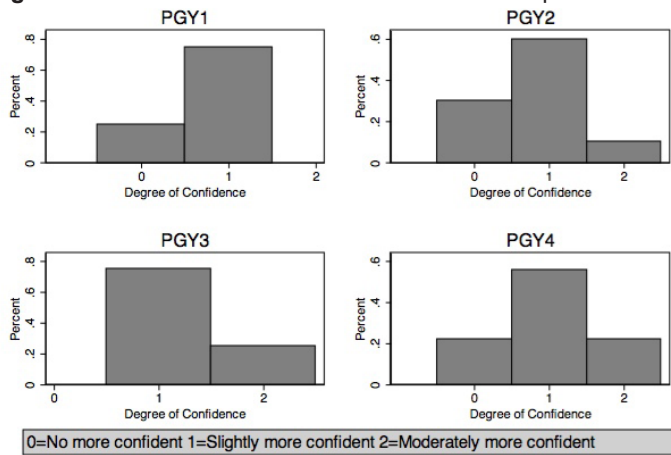
**Educational Objectives:** We sought to implement a longitudinal bedside hands-on curriculum to improve our current POCUS curriculum in light of the CORD-AEUS guidelines. Residents at our institution have an introductory POCUS course and an advanced POCUS curriculum integrated into our modular core lecture series, which include both didactics and hands-on scanning. Hands-on scanning for both components is primarily in the simulation setting. Our primary goal was to provide residents with protected time for scanning Emergency Department (ED) patients alongside EUS faculty members.

**Curricular Design:** We designed Excellence in

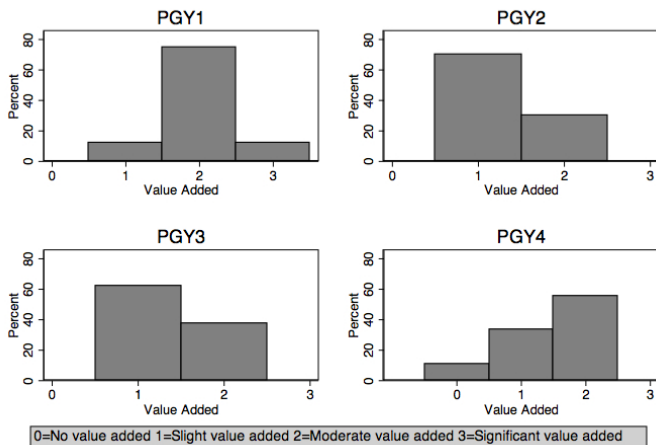
Ultrasound Education (EUE) sessions (one per resident per EM block lasting 3 hours each) during which small groups of 5-8 residents of all PGY levels were scheduled to scan in the ED. Sessions occurred after our weekly conference and incorporated small group (2-4 residents) or independent scan time during which, an EUS faculty member rotated through groups in order to provide real-time feedback. Each session concluded with group image review.

**Impact/Effectiveness:** We believe EUE sessions are an effective way to incorporate protected bedside hands-on scanning into resident EUS education. One year after implementation of EUE, a cross-sectional survey was sent to 55 EM residents with a response rate of 67%. Based on survey results, EUE sessions were considered a successful addition to resident POCUS curriculum as they increased the majority of residents' confidence with POCUS (Figure 1) and added value to most residents' EUS education (Figure 2). In the future we will increase the amount of hands-on scanning by EUS faculty members during EUE sessions as 71% of residents wanted more hands-on scanning.

**Figure 1.** Resident Confidence in EUS after EUE implementation.



**Figure 2.** Value Added to Ultrasound Education by EUE Sessions.



## 32 Flipped Learning Initiative Program (F.L.I.P.): Flipping the Classroom with a FOAMed Supplemental Curriculum

Dyer S, Amin D/John H. Stroger Hospital of Cook County, Chicago, IL

**Background:** The fusion of medicine, education and technology has resulted in an explosion of Free Open Access Medical Education (FOAMed) and demanded we tailor our emergency medicine curriculum to meet the needs of our learners. There has been much debate on how to successfully incorporate FOAMed into pre-existing 'traditional' residency curriculums which have been the standard. A residency-wide needs assessment demonstrated residents wanted FOAMed resources as part of the curriculum.

**Educational Objectives:** To incorporate FOAMed resources into a pre-existing monthly textbook reading assignment as a supplemental curriculum while employing the 'flipped classroom' concept.

**Curricular Design:** Each month a block of textbook chapters are assigned for residents to read focusing on a core concept and then discussed at monthly faculty led small groups. In order to incorporate FOAMed and the 'flipped classroom' concept we created a supplemental curriculum to parallel the assigned textbook chapters. Using the Delphi method, each month a F.L.I.P. (Flipped Learning Initiative Program) page is created comprised of podcasts, blog posts, videos, published articles and 3-5 board review questions related to the assigned chapters. Residents are advised to read the assigned chapters but use FLIP as supplemental resources to aid in knowledge retention. The small group sessions are designed to be case based, covering the core topics through group discussion rather than lecturing.

**Impact/Effectiveness:** We propose a novel way to incorporate FOAMed into a residency curriculum as a supplement to traditional teaching that additionally employs the 'flipped classroom' technique. Feedback from a residency wide survey has been very positive with almost all respondents believing F.L.I.P. is an effective integration of FOAM. Furthermore a majority of respondents feel more comfortable and confident in FOAMed as a reliable resource and now use FOAMed more frequently.

## 33 Geriatrics Longitudinal Integrated Curriculum for Emergency Medicine Residents

Waller N, Shenvi C, Wilson L, Roberts E, Biese K, Busby-Whitehead J /University of North Carolina at Chapel Hill, Durham, NC

**Background:** In 2010 there were roughly 20 million ED visits by patients over the age of 65 and the number is