

scenarios in a standardized clinical setting.

**Educational Objective:** To develop a longitudinal program for assessment of EM Milestones in residents using high fidelity simulation. To describe the development of a longitudinal program for assessment of EM Milestones in residents using high fidelity simulation.

**Curricular Design:** Residents participate in two simulation assessments per year. In each session, residents concurrently manage three patients with different clinical scenarios which have been developed to allow assessment of specific EM Milestones. A checklist of milestone-based behavioral anchors is utilized to determine proficiency levels for patient care milestones specific to each case. After each simulation session, a report is generated for each resident that details the milestone levels attained based on the behavioral anchors (Figure 1). Milestones are tracked throughout the duration of the program.

**Impact:** Two classes of residents (34 total) have participated in the simulation program. Levels were assigned for patient care milestones 1-9, 11, and 13. Most residents attained milestone levels appropriate for level of training. Although additional analysis is still needed to validate these assessments for milestone reporting, the information in the milestone reports has already made a big impact on our trainees. Analysis of aggregate data has identified areas for curricular improvement to share with residency leadership. Individual residents have been able to identify deficiencies during the simulations and have used the reports as a stimulus for performance improvement.

**Table 1.**

Resident	Brutus Buckeye	Individual completed	Program % completed
Cases	1)ovarian torsion, 2) abscess with cellulitis, 3) concussion		
Patient	Item (milestone level)		
#1	Recognizes abnormal VS (1.1)	Y	100%
	Performs a primary assessment (prioritizes essential elements of H&P) on a critically ill patient (1.2, 2.3)	Y	92%
	Consult obgyn (1.3)	Y	91%
	Orders a transvaginal ultrasound (3.2)	Y	95%
	Created a Ddx that is prioritized by likelihood and included appropriate emergent diagnoses (4.2)	Y	94%
	Asked medication allergies (5.1)	N	46%
	Administers analgesia (5.2, 5.3, 11.2)	N	84%
	Re-evaluates patient, monitors that interventions are performed, evaluates effectiveness of therapies (6.1, 6.2, 6.3)	Y	87%
	Admits patient to appropriate level of care (operating room) (7.3)	Y	87%
	Manages a single patient amidst distractions (8.1)	Y	100%
	Effectively task switches between different patients (8.2)	Y	88%
#2	Performs a focused H&P which effectively addresses the chief complaint (2.2)	Y	94%
	Orders appropriate diagnostic studies (bedside ultrasound) (3.2)	Y	88%
	Describes I&D technique (9.2)	Y	100%
	Asked medication allergies (5.1)	N	52%
	Selects correct medication accounting for allergies (5.2)	Y	76%
	Discharges patient with appropriate return precautions (7.3)	Y	67%
	Gives instructions for outpatient follow up (7.2)	Y	88%
#3	Performs a focused H&P which effectively addresses the chief complaint (2.2)	Y	65%
	Practices cost effective use of diagnostic studies (3.3)	Y	71%
	Asked medication allergies (5.1)	N	56%
	Selects correct medication accounting for allergies (5.2)	Y	87%
	Discharges patient with appropriate return precautions (7.3)	Y	94%
	Gives instructions for outpatient follow up (7.2)	Y	53%
	COMMENTS: Brutus appropriately recognized concern for ovarian torsion, but was slow to order appropriate diagnostic testing and GYN consult. The dose of morphine ordered was not adequate to provide sufficient pain control. He consistently forgot to ask allergies prior to ordering medications. The Ddx was well prioritized and included appropriate emergent diagnoses. Brutus gave excellent return precautions to both discharged patients.		

## 8 Advancing Communication Excellence at Stanford (ACES) Emergency Medicine Residency: A Curriculum for Interns

*Alvarez A, Kline M, Passaglia J, Weimer-Elder B / Stanford Emergency Medicine Residency; Stanford University Hospital*

**Background:** With a strategic focus of developing a relationship-centered culture, the EM residency leadership, EM interns and the Physician Partnership Team in Patient Experience designed an innovative pilot using formative and summative evaluation to identify how best to deliver knowledge, and practice 3 relationship-centered communication (RCC) skills. A series of 4 workshops and individualized coaching observations were part of the design. We proposed a curriculum for EM interns focusing on relationship-centered care using the Advancing Communication Excellence at Stanford (ACES) initially designed for Stanford faculty.

**Objective:** The primary objective was to learn how best to engage EM interns to learn and adopt the 3 foundational RCC ACES skills. The second objective was to design a reproducible EM RCC curriculum within the residency program based on time constraints and entry-level cognitive demands.

**Curricular Design:** We developed a curriculum for EM interns, supplemented by individualized-coaching and asynchronous learning using the flipped-classroom model. We used intern-driven scenarios and role-playing techniques to demonstrate and emphasize key communication skills. We used online surveys and text check-ins to assess the effectiveness and further iterate this learner-centered curriculum. The first 3 sessions included a reflection and check-in, demonstration of a skillset and small group practice with an ACES coach. Bedside clinical EM coaching was scheduled with each intern between sessions 3 and 4. Session 4 will integrate all 3 skills with Standardized Patients and will be recorded and used in the final coaching session.

**Impact/Effectiveness:** We have successfully integrated the RCC into the EM intern curriculum over 3 in-person, 60-90 minute workshop sessions and individualized clinical coaching. The impact will be assessed through a learner self-assessment and coaching assessment. We plan to scale this to the entire EM residency.

## 9 An Eye Model for Practicing Ocular Exam Skills

*Kim E, Humphries R / University of Kentucky*

**Introduction/ Background:** Intraocular pressure is a critical part of the eye exam in diagnosing ocular emergencies such as

acute angle-closure glaucoma. Differences in intraocular pressure measurements may result from true variability (diurnal variation, disease progression) or from inaccurate testing (uncalibrated device, user error). Our goal is to help practitioners minimize user error by presenting a relatively life-like eye model that learners may practice various parts of an ocular exam, including measuring intraocular pressure, foreign body removal, and basic slit lamp exam skills.

**Objective:** Our objective is to provide learners with an eye model that can be used to practice measuring intraocular pressure, ocular foreign body removal, and basic slit lamp exam skills.

**Curricular Design:** An educational conference was held for emergency medicine residents on eye exam skills. Through the use of our model, we learned that residents were making common mistakes including incorrect positioning when using the Tono-Pen and inappropriate patient globe compression. Additionally, many residents lacked experience or confidence with ocular foreign body removal with a small-gauge needle and slit lamp exam skills. We designed this simple eye model at our institution using inexpensive materials such as a Styrofoam head, a hard-boiled egg, and a contact lens to help providers learn how to use a Tono-Pen correctly as well as practice with foreign body removal and slit lamp exam techniques.

**Impact/Effectiveness:** New practitioners often feel uncomfortable with performing ocular exams on real-life patients. On reflection, we believe our eye model helped our residents develop confidence and effective ocular exam skills. Our innovation can easily be applied at other institutions to help others develop these skills on an eye model before practicing on actual patients.



Image 1.

## 10 An Innovative Approach to Teaching Residents about Charting and Billing

*Edens M, Hutchinson K / Louisiana State University HSC, Shreveport*

**Background:** It is incumbent on residency programs to teach residents about the administrative aspects of Emergency Medicine. This includes information on charting and billing. Like most Emergency Medicine residency programs, our program had a well-established curriculum to teach charting. However, what we were lacking was a way to teach residents how their charting relates to billing in a way that was meaningful to them.

**Learning Objective:** The objective of this innovation is to identify gaps in knowledge regarding documentation, billing and reimbursement and to determine if said gaps can be filled with innovative “invoice education”

**Curricular Design:** After every shift, as I am cosigning the resident’s charts, I will keep track of what each patient’s charge should be based on the chief complaint, presentation, work-up and ED course. I will also record detailed feedback to the resident regarding how any of their charting could result in a “down code” of the charge. These will be recorded on a form that we are calling an “invoice”. The residents will then be given this “invoice” detailing “How much money they could have made” based on the patients seen with me during the shift, as well as “How much money they would have lost” based on their charting mistakes. This puts the feedback into a perspective that is meaningful to the residents – MONEY.

**Impact/Effectiveness:** After the innovation had been implemented for approximately 6 months, the residents were surveyed regarding whether they felt the innovation helped them understand, charting, billing and reimbursement better. 27 of 34 residents answered the survey. 100% of residents answering the survey felt either very satisfied or satisfied that the innovation helped them understand aspects of good charting practices and how charting relates to billing. 96% of residents answering the survey felt either very satisfied or satisfied that the innovation helped them understand principles of reimbursement. We are currently reviewing the “invoices” to determine if certain types of charting errors were able to be decreased through this simple intervention.