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Asynchronous Curriculum Socially Synchronized: Adult Learning Via Competition

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#### **Authors**

Smart, J  
Muck, A  
Olson, A

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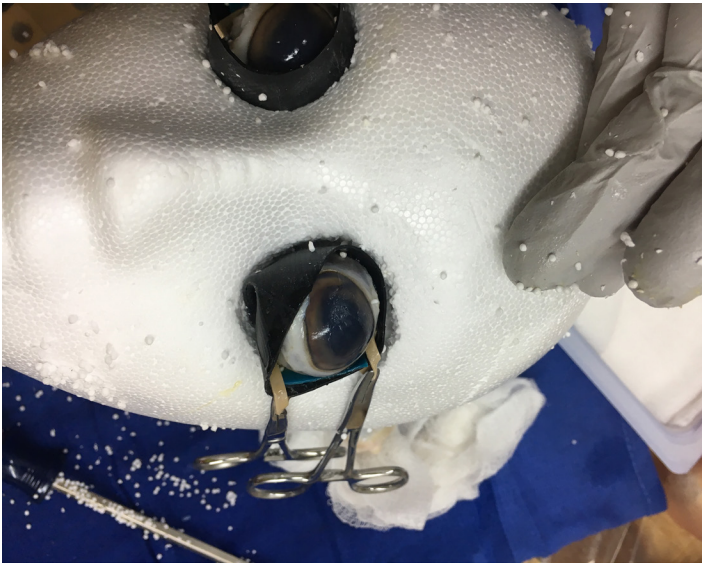
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- Syringes with 27ga needles- to re-fill desiccated orbits
- Bicycle intertube- size varies depending on eyes used.
- Rubberbands 1-2mm thick
- Rubber tourniquet material

**Steps:**

- Create orbits in mannequin heads with drill bit and depth to be matched to the size of the eye (Image 1).



### 3 Asynchronous Curriculum Socially Synchronized: Adult Learning Via Competition

*Smart J, Muck A, Olson A, /University of Texas San Antonio Health Sciences Center, San Antonio, TX*

**Background:** Widespread in Emergency Medicine (EM) residencies, Asynchronous learning is a method to move education outside of classic classroom settings. Prior asynchronous curricula in our three-year EM residency focused on learners covering information in isolation and then taking a quiz to achieve a mark of completion. Learners then moved on to the next quiz, often with no reinforcement of their knowledge. We believe there is a lost opportunity to solidify knowledge and engage active learning by integrating a social aspect and gamification model to traditional Asynchronous Curriculum.

**Educational Objectives:** Our objectives were to encourage adult-style learning, increase resident engagement through gamification, and to improve long-term knowledge retention via spaced repetition.

**Curricular Design:** We created a website, AlamoCityEM.com, with a wide array of monthly options of open access medical education resources and traditional EM textbook chapters. Each option has an estimated time for completion. Residents select a total of 4-hours worth of material. In an innovative step, rather than utilize a pedagogy model of quizzes, residents are treated as adult learners and submit 12 facts or clinical pearls they learned from the material.

The learning points from all residents are then used to create

- Cleanly dissect eyeballs from orbits removing all excess tissue
- Cut a small section (1 per eye) of bicycle tubing. Cut a 2 cm length of tourniquet band (1 per eye). Cut 6cm segments of rubberbands (1 per eye).
- As shown in (Image 2) glue the pieces of rubberband and tourniquet in layered fashion at a point that will sit lateral to the eye when inserted.
- Dry the posterior portion of the eyes with compressed air and insert them into the tubing gluing them in place.

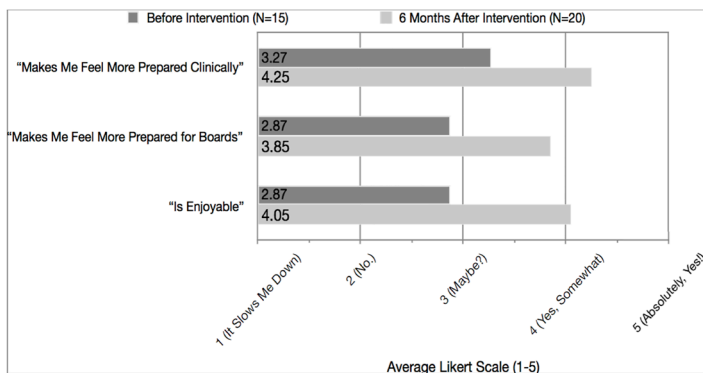
**Impact/Effectiveness:** Ophthalmologic procedures performed in everyday emergency medicine practice are difficult to simulate, and infrequent procedures such as lateral canthotomy can be difficult to teach and train others to master. This model provides a resource for faculty to safely guide learners through the details of lateral canthotomy. It affords trainees the rare opportunity to perform these techniques in a safe environment.

To reiterate the infrequency of this procedure only 10% of our participants have performed a lateral canthotomy in practice. 76% of the participants felt more comfortable performing the procedure after using the model, including those that had performed the procedure previously.

monthly trivia competitions held during didactic conference. Divided into three “Houses” at the beginning of the academic year, residents compete as a team. These competitions allow for review of that month’s material and encourage spaced repetition as well as active social learning to solidify knowledge.

Timely completion of the material is encouraged with late residents causing the entire team to lose points for that month’s competition and the first House finished receiving bonus points. The competition spans the academic year with the House winning the most months being declared the victors.

**Impact/Effectiveness:** Post-implementation of this Asynchronous model, our residents now have completion rates of > 90% prior to deadline compared to ~30% before intervention. Residents on standardized surveys also report not only markedly increased enjoyment of the curriculum but also rank it as more valuable for improvement in both clinical practice and Board preparation. This socially synchronized asynchronous curriculum model offers a new method of engaging residents as adult learners.



## 4 Creation of a Milestone driven Simulation based Resuscitation Course

*Mannix A, Hoffman J, Desmond C, Sergel M, /Rush University, Chicago, IL; Cook County Hospital, Chicago, IL; Northshore University HealthSystem, Chicago, IL*

**Background:** To assess resident growth and development, the Accreditation Council for Graduate Medical Education (ACGME) and The American Board of Emergency Medicine (ABEM) have collectively established a set of twenty-three milestones for Emergency Medicine (EM) Residents. Biannually, residents are assessed on these milestones by residency leadership. Difficulty can arise when the faculty evaluating these milestones cannot recall specific examples of milestone achievement for each resident. A simulation curriculum to directly evaluate these milestones may improve assessment reliability.

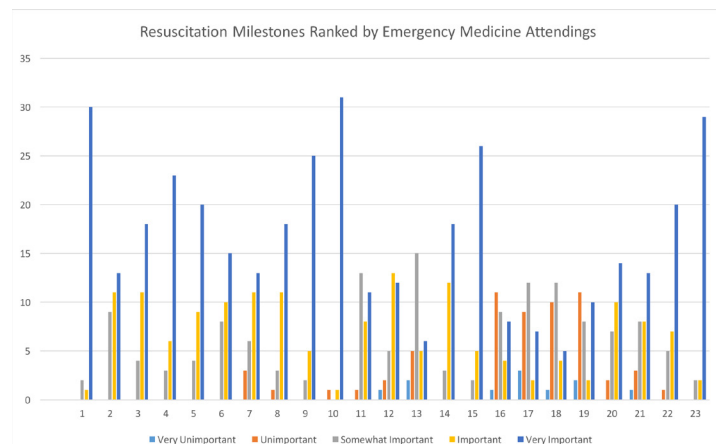
**Educational Objectives:**

- To develop a prioritized list of resuscitation-oriented milestones as defined by EM attending physicians.

- To create a milestone driven simulation cases for EM residents to improve their readiness for EM resuscitation.
- To improve EM residents’ ability to perform vital resuscitation skills, while advancing their clinical skills and ability to care for critically ill medical patients.
- To improve direct observation of critical milestones performed by EM residents for residency leadership.

**Curricular Design:** Attending physicians at four EM residency programs were surveyed regarding the most important milestones associated with resuscitation care, establishing the top 10 resuscitation oriented milestones. Using these 10 milestones, we created a two-day simulation based resuscitation course, to evaluate second year EM residents’ preparedness for caring for critically ill patients. Day one included 4 milestone-driven simulation cases, followed by a formative evaluation. Day two included a summative evaluation for each individual resident on a standardized case that evaluated all the established milestones. These evaluation forms were created by 4 EM attending physicians, correlating simulation critical actions to specific milestones and numbered levels.

**Impact/Effectiveness:** In combining simulation and milestones, this resuscitation curriculum allows for the direct observation and evaluation milestones, in a safe environment. The information gathered can be used by residency leadership to report milestones to the ACGME. Long-term goals include expanding the curriculum to other post-graduate levels, and validating this milestone based assessment tool.



**Figure 1.** To prioritize resuscitation milestones, all 23 Milestones were ranked by Emergency Medicine Attending using a 1-5 Likert based scale based on their importance.

## 5 Faking the Friendly Skies: A Simulated In-Flight Emergency

*Abbott L, Ladkany D, Palmer J, Adelman S, Wood S, Bhat R, Carlberg D, Borhart J, /Georgetown University, Washington, District of Columbia*

**Background:** Approximately 1 in 604 flights is