NEXUS Introduction to Emergency Medicine Course: Resident-Taught Multi-Modality Medical Student Elective

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**Background:** Emergency Medicine has become an increasingly popular specialty choice among US medical students. Although students may enter with a clear interest in emergency medicine, few medical schools incorporate early exposure to the specialty.

**Educational Objectives:** We sought to establish an extracurricular medical student classroom elective covering basic concepts of emergency medicine taught by emergency medicine residents. By using residents as primary teachers, we intended to conduct the course without strain on departmental faculty resources, foster improvement in resident teaching abilities, and cultivate mentorship relations between residents and medical students.

**Curricular Design:** The course consisted of weekly 90 minute didactic sessions covering eight cardinal clinical presentations in emergency medicine. A different senior emergency medicine resident taught each session, providing an opportunity to continually develop their presentation in response to learner feedback.

**Impact/Effectiveness:** Each session over two semesters was rated in three categories, each on a scale of 1 through 5. For example, educational value of session was rated 4.1, 4.3. A large number of constructive comments were also collected to guide subsequent sessions and improve upon future semesters. The course was received with overwhelming enthusiasm and we were unable to meet the demand of medical students wanting to attend sessions and residents wanting to teach sessions. With minimal
strain to the emergency medicine department or curricular adjustments of the school, we were able to establish an early presence of emergency medicine to medical students while simultaneously improving resident teaching skills.

**45 Novel Cost-Effective Model to Simulate Corneal Foreign Body Removal**

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**Background:** Corneal injury from foreign bodies (FB) is a common complaint in the emergency department (ED), but deeply embedded corneal FB are much less common and more challenging to remove. Individual resident experience with corneal FB removal is highly variable. Through simulation, ED residents can practice skills to which they may have limited clinical exposure.

**Educational Objectives:** To teach ED residents several techniques for removing embedded corneal FB using a novel eyeball model to mimic the feel and consistency of the human cornea.

**Curricular Design:** Model eyeballs (Fig. 1) were crafted with gelatin dessert (Jell-O® Jigglers recipe) poured into watercolor trays to make the rounded shape of the cornea and into baby bottle caps to represent the rest of the eye. Prior to cooling, shavings from a metal finger splint were placed into each well. The hardened “corneas” with FB were removed from the molds and easily adhered to the “globe” in the bottle caps.

Thirty ED residents participated in a 1-hour hands-on workshop. After a brief presentation on various methods for corneal FB removal (e.g. using a needle tip on a syringe or with an electric burr), residents paired up to practice these techniques with the eyeball models (Fig. 2). Faculty instructors provided direct observation and feedback. Residents were given a 3-question anonymous survey at the conclusion, soliciting prior experience with corneal FB removal, how realistic the eyeball models felt, and how helpful the session was to their training.

**Impact/Effectiveness:** Prior to this workshop, only one third of residents had removed more than 2 deeply embedded corneal FB. This hands-on approach with the gelatin model allowed all participants to practice until they felt more comfortable. The majority of residents found the simulated experience very realistic, and all participants found it either very helpful or outstanding to their training.

This novel, cost-effective eyeball model is easily duplicable, portable, and can be easily utilized in large group training sessions. Each model also accommodates multiple corneal FB, giving the learner multiple opportunities to practice various techniques.