Title
A Novel Curriculum for Ophthalmology Training of Emergency Medicine Residents (COPTER)

Journal
Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 19(4.1)

ISSN
1936-900X

Authors
Bouman, A
Goyal, N
Guyer, C
et al.

Publication Date
2018

Research Abstracts

1 A Novel Curriculum for Ophthalmology Training of Emergency Medicine Residents (COPTER)

Bouman A, Goyal N, Guyer C, Goyal A, Huitsing H, Dowers C, Clark C, Noll S, Harrison M, Stokes-Buzzelli S/Henry Ford Health System, Detroit, Michigan; Kresge Eye Institute, Wayne State University School of Medicine, Detroit, Michigan

Background: Emergency Medicine (EM) physicians must effectively manage ophthalmologic emergencies, yet many EM residencies teach Ophthalmology via the traditional off-service rotation model. Training during medical school is limited and variable.

Objectives: Replacing an apprenticeship model of ophthalmology training with an innovative longitudinal curriculum may improve EM residents' competency in treating eye complaints.

Methods: The Curriculum for Ophthalmology Training of Emergency Medicine Residents (COPTER) is designed to cover all the Ophthalmology content in the Model of EM over 18 months. It consists of three, 4½-hour sessions employing didactics and hands-on training in diagnosis, equipment use, and procedures.

A knowledge test was administered to 16 PGY1 EM residents before and immediately after participation in COPTER session 1; the test was re-administered 8 months later (before session 2) to assess knowledge retention. These residents also completed a survey at the end of PGY1 to assess self-perceived competency in the diagnosis and management of select ophthalmologic complaints. The same survey was administered to 16 upper-class residents who had completed a 2-week ophthalmology rotation during their PGY1 year ("Pre-COPTER") and was re-administered after they completed one session of COPTER ("Mixed Curriculum.") Paired t-test and Wilcoxon Rank Sum test were used to analyze the data.

Results: Residents displayed improved knowledge immediately after a COPTER Session (p=0.0012 compared to pretest), and this improvement was sustained 8 months later (p=0.0261). There was a statistically significant increase in self-perceived competency in evaluating medical eye complaints (p=0.0493) and in acute glaucoma management (p=0.0221) between the Pre-COPTER and the Mixed Curriculum.

Conclusions: An innovative, multi-modal ophthalmology curriculum improved EM resident knowledge of the diagnosis and management of ophthalmologic emergencies. When compared to an apprenticeship/rotation model, this curriculum also enhanced self-reported competency in managing medical eye complaints. COPTER may improve the care of patients with ophthalmologic emergencies.

Table 1. Outline of a COPTER session. There are three unique sessions with one session scheduled every 6 months, covering the entire model of EM twice in a three-year residency program.

	PGY1 Track	PGY2 Track	PGY3+ Track
12:00pm – 1:00pm	Large-group Didactic COPTER Session 1: The Red Eye ♦ COPTER Session 2: Eye Trauma ♦ COPTER Session 3: Other Inflammatory Conditions & Infections		
1:00pm – 2:00pm	Small-group Breakout*	Small-group Breakout*	Small-group Breakout*
2:00pm – 2:15pm	Snack break, move to next session		
2:15pm – 3:15pm	Small-group Breakout*	Small-group Breakout*	Small-group Breakout*
3:15pm – 3:30pm	Snack break, move to next session		
3:30pm – 4:30pm	Small-group Breakout*	Small-group Breakout*	Small-group Breakout*

* Table 2 describes the content of each breakout session. *COPTER*, Curriculum of Ophthamology Teaching of Emergency Medicine Residents; *EM*, emergency medicine; *PGY*, post-graduate year.

Table 2. COPTER breakout session menu.

Name	Content	Audience	Equipment needed
Vision Assessment & Eye History	How-to measure and document visual acuity[1], Must-ask historical questions	PGY1	Video: https://youtu.be/bFmv4XYRN58, Snellen chart, Pinhole occluder
General Eye Examination	Orbital anatomy, Pupil assessment – size, shape, direct & consensual reflex[1], Swinging light test, Outside-in systematic examination	PGY1	Video: https://youtu.be/bFmv4XYRN58, Flashlight
Direct Ophthalmoscopy	How-to use equipment, Visualizing disc and macula, Papilledema	PGY1	Direct ophthalmoscope, PanOptic™ ophthalmoscope, Ophthalmoscopy simulator
Intraocular Pressure Measurement	How-to measure[1], Normal range, Do not measure when perforation suspected	PGY2	Tono-Pen® with tip covers, iCare® Tonometer with probes, Cornea simulator
Slit Lamp	Knobology & focusing, Patient positioning, Corneal abrasion (blue light), Cells and flare	PGY1, PGY2, PGY3+	Slit lamp, Video: https://youtu.be/w9wMJ6job_0, Volunteer[2]
Ultrasound	Probe choice and machine settings, Normal anatomy, Examining patient with swollen-shut eye	PGY2	Ultrasound machine, Volunteer[2]
Advanced Ultrasound	Abnormal findings, Retinal detachment, Posterior vitreous hemorrhage, Optic nerve sheath diameter measurement	PGY3+	Ultrasound machine, Image bank, Volunteer[2]
Foreign Body Removal	When to suspect it, Eyelid eversion, How-to use equipment, Checking for globe perforation	PGY3+	Foreign body simulator, Slit lamp, Tuberculin syringe, Cotton-tip applicator, Burr drill, Video: https://youtu.be/DQZn8WRGBeQ
Lateral Canthotomy	Indications, How-to perform	PGY3+	Cadaver, Video: https://youtu.be/tgQaKVGynFA, Video: https://youtu.be/cLsLBU4L1Ko

*Residents are asked to document these on every patient with an eye complaint.

2 A Simulated Standardized Video Interview: Alleviating Student Concerns while Effectively Simulating Content

Kiefer C, Shaver E, Sharon M, Davis S, Dilcher B, Davis T, Charles P, Wehner P, Cottrell S, Ferrari N/West Virginia University School of Medicine, Morgantown, West Virginia; Marshall University Joan C. Edwards School of Medicine, Huntington, West Virginia

Background: The standardized video interview (SVI) was introduced as a new requirement for Emergency Medicine (EM)