UC Irvine

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title
Faculty and Resident Perception of Mastery of Level One Emergency Medicine Milestones

Permalink
https://escholarship.org/uc/item/3g77508j

Journal
Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 17(4.1)

ISSN
1936-900X

Authors
Fowlkes, R
Runde, D

Publication Date
2016

Copyright Information

in this experimental study at the Yale Center for Medical Simulation. Students were randomly divided into control and experimental groups. Students who refused participation or were unable to complete pre- or post-intervention testing were excluded. All students completed a 26-question test on emergent medical management for septic shock based on the 2013 "Surviving Sepsis Campaign" guidelines. Both groups attended a didactic session based on those guidelines. Each student in the experimental group also participated in a full manikin simulation of a patient in septic shock. All students then repeated the test immediately after the didactic session and again at 12 weeks. Improvement between baseline and post-tests were compared between the two groups using Student's t-test.

Results: 54 students were enrolled in the study. 1 was excluded due to failure to complete post-testing. 25 students were placed in the control group, and 28 were placed in the experimental group. After adjusting for baseline testing, immediate post-test scores in the control group were an average of 1.69 points lower than those in the experimental group (95% CI, -3.07,-.32). No significant differences in scores were found between groups on delayed post-testing (95% CI, -1.75, 1.01).

Conclusions: Third-year medical students who participated in both didactics and simulation of emergent medical management of septic shock improved more on immediate post-testing compared to students who participated in didactics alone. However, there are no significant differences in scores 12 weeks after intervention. Full manikin simulation may be a useful modality for teaching emergent medical management of sepsis, but its benefits over didactics alone may diminish after time.

29 Expectations and Outcomes for the Development of an Ultrasound Curriculum in a Resource-limited Environment

Berkowitz R, Mangan J, Rose G, Siadecki S, Chhaganlal K, Saul T / Mount Sinai St. Luke's Roosevelt, New York, NY; Catholic University of Mozambique, Mozambique

Background: Point-of-care ultrasound (POC US) can be an invaluable tool in resource-limited settings. Emergency physicians from developed countries are increasingly traveling to such areas to teach POC US. However, how to best perform a needs assessment and develop a curriculum in an unfamiliar setting can be unclear.

Objectives: The objective of this study was to determine if instructors could design appropriate didactics for Mozambican medical students based on limited knowledge of students' backgrounds and needs, and if surveying novice learners before training would be informative for curriculum development.

Methods: Our ultrasound division traveled to Beira, Mozambique to teach a 3-day course in POC US for 5th-year medical students. It was developed based on experience conducting similar courses in developed countries and research on regional healthcare. A survey was administered to the instructors before and after the course about local morbidity and the utility of different POC US modalities. Students were given similar surveys at the same times.

Results: Overall, instructors accurately identified the diseases perceived by students as most prevalent and responsible for the most mortality; however they overestimated the rate of obstetrical complications. 75% listed it in their top 5 before the course, and 25% after. They also overestimated the extent of trauma and infectious diseases other than HIV, TB, and malaria. Regarding the utility of each POC US modality, instructors rated FASH, late OB and IV access highest before the course, and thoracic and procedural guidance highest after the course. Students rated cardiac and late OB highest before the course. These were listed in the top 3 by 80% and 70% of students, respectively. After the course, 40-50% rated cardiac, thoracic, FAST, early OB, and late OB in their top 3. No students rated IV access or procedural guidance highly at any time. Additionally, 20% of students suggested adding an application that instructors had not considered.

Conclusions: Based on limited research, instructors designed a well-received course for medical students; however, the curriculum could have been improved by several changes. Other methods of needs assessment may be indicated. Consideration of students' input before training should be taken with caution as their perspectives changed significantly after the course.

30 Faculty and Resident Perception of Mastery of Level One Emergency Medicine Milestones

Fowlkes E, Runde D / University of Iowa Hospitals and Clinics, Iowa City, IA

Background: Emergency medicine residents begin training with varied levels of experience. The Level 1 Emergency Medicine (EM) milestones describe elements of physician competency expected of incoming residents in emergency medicine.

Objectives: To measure the self-reported competency of all EM residents with Level 1 milestone at the start residency and to measure the concordance between resident and faculty perceptions of competency.

Methods: We conducted an anonymous online survey of all current EM residents and faculty in a Midwestern university-based EM residency program. Residents were asked to rate themselves on the ability to consistently perform each of the 37 items based on the milestones at the beginning of internship (dichotomous), and faculty were asked to rate the proportion of interns who could consistently complete each milestone task based. Descriptive statistics are reported, and ANOVA was used to compare concordance between resident and faculty responses.

Results: 18 of 24 core faculty (75%) and 23 of 26 (88%) residents completed the survey. Residents rated their initial competence higher in every category than did the faculty (mean difference 20.9%, 95% CI 4.6-43.3%). The greatest discrepancy was for Observation and Reassessment (PC6) with 90.5% of residents rating themselves competent compared to faculty estimating that only 47.2% are competent at the start of internship. (P<0.0001). The most concordant results occurred for milestones where both faculty and residents gave lower overall ratings (PC3, PC5, PC9, PC11, PC12, PC14), which included predominantly procedural and pharmacology-based milestones.

Conclusions: EM Residents rate high self-perceived mastery of level 1 EM milestones at the start of residency, and significant discrepancies were identified between residents and faculty in perceived milestone competency. These discrepancies in perceived mastery are likely multifactorial, but may guide future development of educational interventions for incoming EM residents.

31 Faculty and Resident Perception of Mastery of Level One Emergency Medicine Milestones

Crawford S, Vargas A, Monks S / Texas Tech University Health Sciences Center El Paso, El Paso, TX

Background: Residency programs are in an era of accreditation that pressures them to evaluate their curricula and faculty with metrics that demonstrate their effectiveness. This demand can overwhelm residents with surveys, forms, and checklists, and the validity of such evaluations should be suspect, given the high volumes that are being requested. While the reliability of performance evaluation reports has been studied in the literature, the effect of when and how these evaluations are administered on the quality of data gathered is not well understood.

Objectives: The aim of this study was to evaluate

Table 1. Intern competency in level 1 milestones as assessed by faculty and residents.

Milestone	Level 1 Description	Faculty Mean	Resident Mean	Mean Difference (95% CI)	P-value
PC1 Emergency Stabilization	Recognizes abnormal vital signs.	73.6	95.2	21.7 (7.1-36.3)	0.0048
PC2 Focused H&P	Performs a reliable, comprehensive history and physical exam.	56.9	90.5	33.6 (15.8-51.4)	0.0005
	Communicates a reliable, comprehensive history and physical exam	50.4	85.7	35.3 (14.0-56.5)	0.0018
PC3 Diagnostic Studies	Determines the necessity of diagnostic studies.	43.4	52.4	8.9 (-19.4 – 37.3)	0.5256
PC4 Diagnosis	Constructs a list of potential diagnoses based on chief complaint and initial assessment.	52.2	85.7	33.5 (13.1-53.8)	0.002
PC5 Pharmacotherapy	Knows the different classifications of pharmacologic agents and their mechanism of action.	46	52.4	6.4 (-21-34.4)	0.647
	Consistently asks patient for drug allergies.	47.7	57.1	9.5 (-18.6-37.6)	0.4985
PC6 Observation and Reassessment	Recognizes the need for patient re-evaluation.	47.2	90.5	43.3 (24.8-61.8)	0.0001
PC7 Disposition	Describes basic resources available for care of the emergency department patient.	55.1	66.7	11.6 (-15.0-38.2)	0.3821
PC8 Task-switching	Manages a single patient amidst distractions	65.8	85.7	19.9 (-1.7-41.5)	0.0703
PC9 General Approach to Procedures	Identifies pertinent anatomy and physiology for a specific procedure	60.9	66.7	5.8 (-19.9-31.5)	0.6517
	Uses appropriate Universal Precautions.	66.3	85.7	19.4 (-3.2-42.0)	0.0906
PC10 Airway Management	Describes upper airway anatomy	56.9	81	24.1 (1.0-47.1)	0.0414
	Performs basic airway maneuvers or adjuncts (jaw thrust/chin lift, oral airway/nasopharyngeal airway) and ventilates/oxygenates patient using BVM.	58.3	90.5	32.2 (12.2-52.2)	0.0024
PC11 Anesthesia, Pain Management	Discusses with the patient indications, contraindications and possible complications of local anesthesia.	43.3	52.4	9.1 (-18.2-36.4)	0.5031
	Performs local anesthesia using appropriate doses of local anesthetic and appropriate technique to provide skin to sub-dermal anesthesia for procedures.	56.9	81	24.1 (0.2-48.0)	0.0482
PC12 Ultrasound	Describes the indications for emergency ultrasound.	52.5	57.1	4.6 (-21.8-31.1)	0.724
PC13 Wound Management	Prepares a simple wound for suturing (identifying appropriate sutures material, anesthetizing wound and irrigate)	65.1	90.5	25.4 (5.9-44.9)	0.0122
	Demonstrates sterile technique.	66.2	90.5	24.3 (4.9-43.8)	0.0157
	Places simple interrupted suture.	74.1	95.2	21.1 (6.2-36.1)	0.0069
PC14 Vascular Access	Performs a venipuncture.	43.9	61.9	18.0 (-9.2-45.2)	0.1874
	Places a peripheral intravenous line.	33.5	61.9	28.4 (1.6-55.2)	0.0386
	Performs an arterial puncture.	35.4	47.6	12.2 (-15.0-39.4)	0.3682
SBP1 Patient Safety	Adheres to standards for maintenance of safe working environment.	64.1	90.5	26.4 (5.7-47.1)	0.0139
	Describes medical errors and adverse events.	52.8	80	27.2 (3.5-51.0)	0.0258
SBP2 Systems-based Management	Describes members of ED team (nurses, technicians, security)	70.8	81	10.1 (-13.1-33.4)	0.3833
SBP3 Technology	Uses the Electronic Health Record (EHR) to order tests, medications and document notes and responds to alerts.	68.1	85.7	17.6 (-3.8-39.0)	0.1033
	Reviews medication for patients.	41.7	66.7	24.9 (-1.2-51.1)	0.0607
PBL1 Practice-based Performance Improvement	Describes basic principles of evidence-based medicine	51.8	71.4	19.7 (-5.6-44.9)	0.1238
PROF1 Professional Values	Demonstrates behavior that conveys caring, honesty, genuine interest and tolerance when interacting with a diverse population of patients and families.	74.4	100	25.6 (14.6-36.7)	0.0001
PROF2 Accountability	Demonstrates basic professional responsibilities such as timely reporting for duty, appropriate dress/grooming, rested and ready to work, delivery of patient care as a functional physician.	83.1	95.2	12.2 (-0.5-24.8)	0.0584
	Maintains patient confidentiality.	84.1	100	15.9 (10.0-21.9)	0.0001
	Uses social media ethically and responsibly.	77.1	100	22.9 (15.7-30.0)	0.0001
ICS1 Patient Centered Communication	Establishes rapport with and demonstrates empathy toward patients and their families.	74.3	100	25.7 (19.6-31.8)	0.0001
	Listens effectively to patients and their families.	67.2	95.2	32.8 (25.3-40.3)	0.0001
ICS2 Team Management	Participates as a member of the patient care team.	77.8	95.2	17.5 (4.0-30.9)	0.0125