Table 1. ABEM Exam Scors by Resident Demographics. N= 134.

	Overall Incidence, N (%) or Median (IQR)	Exam Scores, Median (IQR), if applicable	Kendall's Tau Correlation (p-value)
Total No. of Responders	N=134	N/A	N/A
ABEM Exam Score	75.0 (70.0 – 85.0)	75.0 (70.0 – 85.0)	N/A
Missing Data	N=30		
Year of Residency			
PGY 1	14 (10.7%)	74.5 (74.3 – 74.8)	
PGY 2	53 (40.5%)	72.0 (69.0 – 75.0)	0.321
PGY 3	56 (42.7%)	82.0 (75.0 – 88.0)	(p < 0.0001)
PGY 4	8 (6.1%)	82.0 (76.0 – 84.0)	
Missing Data	N=3		
Listened to At Least 1 Podcast	124 (92.5%)	75.0 (71.0 – 85.0)	0.110 (p = 0.1788)
Particular Podcasts			
EMCrit	77 (57.5%)	75.0 (72.0 – 85.0)	-0.065 (p = 0.4269)
EMRAP	112 (83.6%)	76.0 (72.0 – 86.0)	-0.168 (p = 0.0482)
Ultrasound	16 (11.9%)	75.0 (70.0 – 81.0)	-0.029 (p = 0.7252)
EM Basic	47 (35.1%)	74.0 (70.0 – 75.8)	0.192 (p = 0.0194)
Core ME	8 (6.0%)	75.0 (73.0 – 79.0)	0.009 (p = 0.9172)
ERCast	19 (14.2%)	82.0 (74.0 – 90.0)	-0.136 (p = 0.0973)
FOAMCast	15 (11.2%)	75.0 (74.0 – 88.0)	-0.078 (p = 0.3409)

Table 2. ABEM Exam Scors by Time Spent Using Study Materials. N= 134.

	Overall Incidence, N (%) or Median (IQR)	Exam Scores, Median (IQR), if applicable	Kendall's Tau Correlation (p-value)
Total No. of Responders	N=134	N/A	N/A
ABEM Exam Score	75.0 (70.0 – 85.0)	75.0 (70.0 – 85.0)	N/A
Missing Data	N=30		
Hours per Week of Podcast			
< 1	36 (27.1%)	75.0 (70.5 – 83.0)	
1 – 2	45 (33.8%)	76.5 (70.0 – 86.0)	
2 – 3	18 (13.5%)	78.0 (70.0 – 81.0)	
3 – 4	13 (9.8%)	74.5 (68.3 – 77.3)	
4 – 5	9 (6.8%)	74.0 (72.0 – 84.0)	
5 – 6	2 (1.5%)	92.0 (92.0 – 92.0)	
6 – 7	2 (1.5%)		0.038
7 – 8	0 (0.0%)		(p = 0.6060)
8 – 9	0 (0.0%)		
9 – 10	4 (3.0%)	88.0 (85.0 – 89.0)	
10 – 11	2 (1.5%)	80.0 (74.5 – 85.5)	
11 – 12	0 (0.0%)		
12 – 13	1 (0.8%)	85.0 (85.0 – 85.0)	
13 – 14	0 (0.0%)		
14 +	1 (0.8%)	56.0 (56.0 – 56.0)	
Hours per Week of Rosh Review			
< 1	48 (36.4%)	75.0 (70.0 – 85.0)	
1 – 2	46 (34.8%)	79.0 (73.0 – 85.0)	
2 – 3	17 (12.9%)	70.0 (65.0 – 74.0)	
3 – 4	8 (6.1%)	78.5 (68.3 – 86.5)	
4 – 5	3 (2.3%)	90.0 (90.0 – 90.0)	
5 – 6	3 (2.3%)	86.0 (71.0 – 88.5)	
6 – 7	4 (3.0%)	74.5 (73.0 – 79.3)	-0.030
7 – 8	0 (0.0%)		(p = 0.6940)
8 – 9	0 (0.0%)		
9 – 10	1 (0.8%)		
10 – 11	0 (0.0%)		
11 – 12	1 (0.8%)	82.0 (82.0 – 82.0)	
12 – 13	0 (0.0%)		
13 – 14	0 (0.0%)		
14 +	1 (0.8%)	74.0 (74.0 – 74.0)	
Hours per Week of Textbooks			
< 1	72 (54.1%)	77.0 (73.0 – 86.0)	
1 – 2	31 (23.3%)	75.0 (68.5 – 82.0)	
2 – 3	15 (11.3%)	68.0 (61.0 – 72.0)	
3 – 4	7 (5.3%)	78.0 (70.5 – 85.5)	
4 – 5	4 (3.0%)	72.0 (71.0 – 81.0)	
5 – 6	3 (2.3%)	80.5 (74.8 – 86.3)	
6 – 7	0 (0.0%)		-0.148
7 – 8	0 (0.0%)		(p = 0.0574)
8 – 9	0 (0.0%)		
9 – 10	0 (0.0%)		
10 – 11	0 (0.0%)		
11 – 12	0 (0.0%)		
12 – 13	0 (0.0%)		
13 – 14	0 (0.0%)		
14 +	1 (0.8%)	74.0 (74.0 – 74.0)	

38 Simulating Sepsis: Can Residents Improve CMS Compliance Through Simulation?

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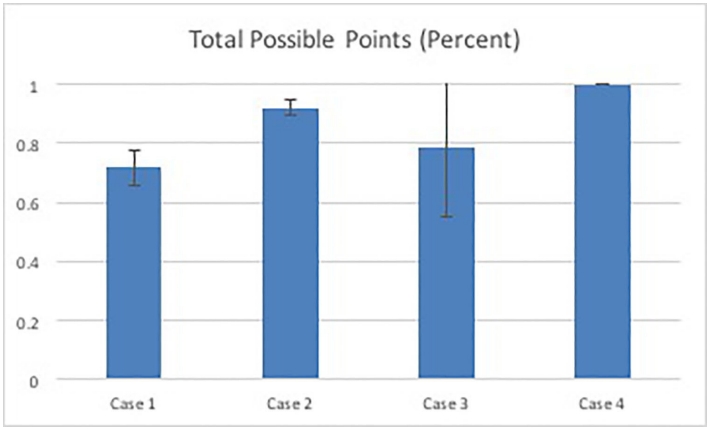
Background: Over 1 million patients each year are diagnosed with sepsis with mortality ranging from 28% to 50%. Emergency Medicine residents are taught to recognize and treat septic patients, however, there is little teaching on proper documentation to be compliant with CMS sepsis core measures.

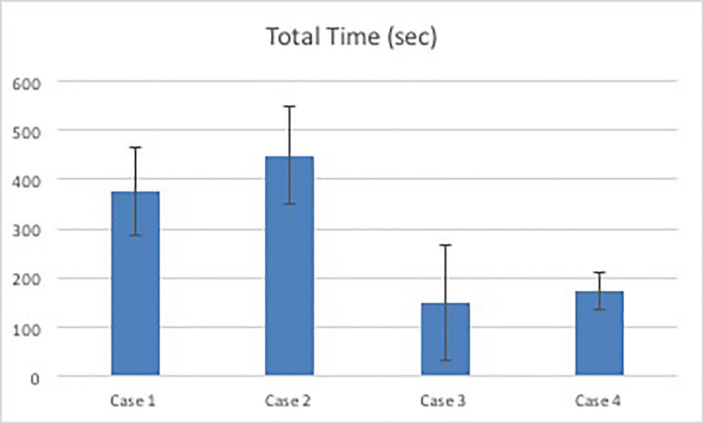
Objectives: Our objective was to improve resident compliance with CMS sepsis core measure documentation. We hypothesized that residents would improve their overall documenting efficiency and compliance through simulated cases.

Methods: 40 EM residents ranging from PGY 1 - PGY4 were randomly assigned to 6 groups . Residents were given a brief tutorial on CMS quality measures: SEP-1, Early Management Bundle, Severe Sepsis and Septic Shock. Residents were presented 4 clinical vignettes (SIRS without infection, severe sepsis, 2 septic shock) on power point slides. Using the institution's EMR in training mode, resident groups were timed and points awarded for each proper medication administered, reassessments, and final diagnoses.

Results: The overall total time required to meet CMS quality measures improved significantly from case 1 (377 +/- 88 sec) to case 4 (173 +/- 37 sec), p=0.001. Resident accuracy improved from 71% of total available points in case 1, to 100% of available points in case 4, p<0.001. Repetition via shock cases 3 and 4 showed a trend toward improved accuracy (79% vs. 100%, p=0.07) without a significant difference in time (150 +/- 119 sec vs. 174 +/- 38 sec, p=0.65).

Conclusions: Through a 4 case clinical vignette simulation, residents can become more efficient and accurate in complying with CMS sepsis quality metric documentation. This type of resident simulation may help improve CMS documentation compliance, improve patient care, and improve hospital reimbursement.





39 Simulation is Now Integral to EM Resident Training Nationwide

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Background: Simulation-based education has grown rapidly in the 21st century. In 2003 McLaughlin found that only 29% of EM residency programs in the US were using high-fidelity mannequin-based (HFMB) simulation to train residents. By 2008, Okuda found use of HFMB sim had risen to 85% of programs, and 43% owned their own mannequin simulators, up from 8% only 5 years earlier.

Objectives: To describe the current role of simulation in the education and evaluation of EM residents in the US.

Methods: A national survey of EM residency program directors was conducted. The study received exemption from review by Yale Institutional Review Board. The survey consisted of 39 multiple-choice questions developed by the study authors. It was administered electronically, via surveymonkey.com, and distributed via email to the CORD listserve in Fall 2015.

Results:

- 99 programs completed the survey, from 35 states, Puerto Rico and District of Columbia. 91 were allopathic programs, constituting 54% of ACGME-accredited residencies. 7 osteopathic programs responded, out of 44 accredited by AOA. (1 respondent declined to indicate DO vs MD.)
- 100% of respondents reported that simulation is incorporated in their curriculum in some fashion. 80% indicated plans to expand sim curricula in the next 5 years. Table 1 details current uses for simulation in EM curricula.
- 71% of residents participate in sim at least once a month, 23% "once every few weeks," and 4% only 1-2 times per year.
- 84% of programs have on-site facilities dedicated to simulation, and 20% indicated they plan to build new sim facilities in the next 5 years.
- 97% of programs are using sim to teaching procedural skills; Table 2 details which procedures. Central venous catheter insertion is taught via sim at 96% of programs, indicating that simulation is now a universally standard part of teaching this critical procedure.
- 53% of programs use simulation for milestone assessment, and a further 27% plan to do so in the near future.

Conclusions: Though our study was limited by its response rate, our findings show that HFMB simulation has become a ubiquitous part of EM residents' training in the US. It is particularly well-integrated into procedural teaching and skills assessment, as seen in the example of CVC insertion. We must continue to explore and expand on the possibilities of simulation-based modalities for training the next generation of EM physicians.

Table 1. Uses for Simulation.

Application	# of respondents, n = 98 (%)
Education	96 (98%)
Procedural Skills	95 (97%)
Team Training	81 (83%)
Evaluation/Assessment	69 (70%)
Interdisciplinary sessions with other departments/healthcare providers (e.g., RNs, techs)	65 (66%)
Milestone Assessment	58 (59%)
Remediation	56 (57%)
Quality Improvement/Quality Assurance	26 (27%)
Credentialing	19 (19%)
Other (both described forms of interprofessional team training)	2 (2%)

Table 2. Procedures Taught Via Simulation.

Procedure	# of respondents, n = 83 (%)
Central Venous Catheter Insertion	80 (96%)
Cricothyroidotomy	75 (90%)
Cardioversion/Defibrillation	67 (81%)
Thoracostomy	65 (78%)
Lumbar Puncture	64 (77%)
FAST and ultrasound skills	62 (75%)
Pericardiocentesis	60 (72%)
Vaginal delivery	43 (52%)
Peripheral IV placement	41 (49%)
Arthrocentesis	27 (33%)
Paracentesis	16 (19%)
Foley catheter insertion	14 (17%)
Other	14 (17%)
"Other" procedures described by respondents: intubation and airway management (3), cardiac pacing (3), intra-osseous placement (2), thoracotomy (2), arterial lines, umbilical lines, fasciotomy, lateral canthotomy	