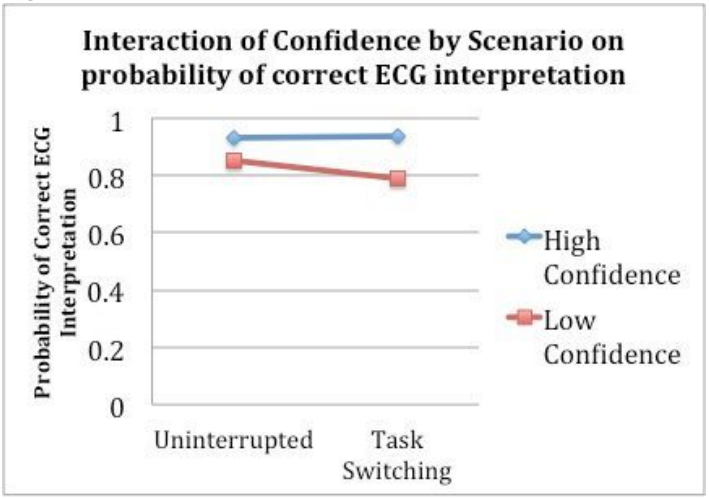
Table 1.

	GEE Univariate			GEE Full Model		
Variable	OR	CI	p value	OR	CI	p value
Scenario						
Sequential (base)	1.00			1.00		
Preemptive	0.81	0.58-1.12	0.32	0.80	0.51-1.24	0.31
Position						
Intern (base)	1.00			1.00		
Senior Res	1.30	0.80-2.13	0.26	1.29	0.68-2.47	0.44
Attending	2.56	1.66-3.94	<0.01	2.40	1.42-4.05	<0.01
Type of ECG						
Normal (base)	1.00			1.00		
Anterior STEMI	1.17	0.44-3.13	0.67	0.78	0.30-2.03	0.61
Inferior STEMI	0.08	0.04-0.14	<0.01	0.06	0.03-0.11	<0.01
Mean Scenario Exam	1.01	0.96-1.05	0.83	1.01	0.96-1.06	0.62
Confidence						
Low (1-3) (base)	1.00			1.00		
High(4-5)	3.10	2.14-4.50	<0.01	3.68	2.26-6.01	<0.01

Figure 1.



20 EM-Bound Medical Student Exam Performance on the EM-Advanced Clinical Examination (EM-ACE) and Versions 1 and 2 of the National EM M4 Exams

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Background: Empathy is declining and burnout is increasing amongst medical providers despite empathy being an important core for the doctor-patient relationship.

Objectives: We hypothesized that an empathy curriculum would lead to decreased resident burnout and increased patient perception of resident empathy.

Methods: In this pilot study, consenting EM residents were randomized to control group or to an intervention group. The intervention was an educational curriculum which included a multi-modal approach to emphasize mindfulness, patient-centered communication, empathy, and reflection. In the pre- and post-intervention period, enrolled residents completed the Interpersonal Reactivity Index (IRI) to assess self-reported empathy and the Maslach Burnout Inventory (MBI) to assess burnout. The IRI is a 28-item questionnaire composed of 4 separate subscales. The MBI is a 22-item questionnaire composed of 3 separate subscales. A convenience sample of consented patients treated by participating residents completed the Consultation and Relational Empathy (CARE) measure about their perception of empathy from their EM resident provider. The CARE is a 10-item questionnaire. Comparisons between groups pre- and post-intervention were analyzed with repeated-measures ANOVA.

Results: 21 residents (14 male, 7 female) out of 36 eligible were enrolled: 10 in the control group and 11 in the intervention group. 1236 patients in the pre-intervention period were screened, and 273 were enrolled. 1283 patients were screened post-intervention and 308 were enrolled. On the IRI and the MBI subscales, as well as on the CARE measure, there were no statistically significant differences between the responses in the pre-and post-intervention periods ($p>0.106$).

Conclusions: Although small and powered to detect only large differences in outcomes, the intervention had no statistically significant effect on any of the IRI or MBI subscales or the CARE measure. While trends toward change in some subscales were noticed in the results they cannot be attributed solely to the intervention.

21 Emergency Medicine Resident and Medical Student Technology Use during the care of Critical Patients: A High Fidelity Simulation Study

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Background: Widespread availability of electronic resources has increased the amount of information immediately available to physicians, but it is unclear what impact this has on patient care.

Objectives: To determine if the use of electronic resources improved learners' ability to quickly and accurately manage simulated neurologic emergencies.

Methods: Emergency medicine resident teams (n=14) and clerkship student teams (n=33) managed two high fidelity simulation cases. Data collection occurred over one year, June 2014 - May 2015. In this single-blinded experimental study, teams of 2-3 were randomized to manage one case with the use of electronic resources (internet and personal computing devices). In the other case, teams had access to print resources typically available in the emergency department or on their person. Times to successful completion of critical actions were recorded. The authors used mixed-method ANOVAs where the

level of the learners (residents vs. students) was a between-groups factor and technology use (used vs. not used) was a within-groups factor to determine if technology use improved performance. To identify where technology use may have influenced specific critical actions, we used the Fisher's Exact Test to analyze 2X2 contingency tables.

Results: When teams were allowed to use technology they completed more critical actions correctly ($p<.001$; Table 1). The contingency table analysis showed that the difference was due to the critical actions involving identifying an unknown pill ($p<.001$; Table 2). Upon removing the pill identification items there was not a significant difference in performance when using technology and when not using technology (Table 1). Resident teams were significantly more accurate and completed the cases more quickly than the student teams ($p<.001$ respectively; Table 1).

Conclusions: The use of technology was not related to how quickly the teams completed the simulation. Pill identification was the only critical action significantly impacted by technology use. Residents managed the cases more quickly and accurately than students. Based on these results we suspect that prior knowledge guided learners' management.

Table 1. Mixed-methods ANOVA Results.

Dependent Variable	Level of Learner		Technology Use	
	Resident Teams (n = 14)	*Student Teams (n = 33)*	*Used (n = 47)*	*Not Used (n = 47)*
Percent of Critical Actions Completed	*M* = 69.4% *SD* = 12.3% $p < .001$, $\eta_p^2 = .245$	*M* = 48.9% *SD* = 18.9%	*M* = 64.5% *SD* = 28.4% $p < .001$, $\eta_p^2 = .272$	*M* = 44.1% *SD* = 24.2%
Percent of Critical Actions Completed (Pill identification items omitted)	*M* = 82.9% *SD* = 13.3% $p < .001$, $\eta_p^2 = .255$	*M* = 60.6% *SD* = 20.3%	*M* = 69.9% *SD* = 29.4% $p = .283$, $\eta_p^2 = .026$	*M* = 61.4% *SD* = 33.4%
Time to Completion (in seconds)	*M* = 1937.64 *SD* = 409.49 $p < .001$, $\eta_p^2 = .576$	*M* = 2517.12 *SD* = 504.64	*M* = 1209.90 *SD* = 263.10 $p = .877$, $\eta_p^2 = .001$	*M* = 1235.95 *SD* = 285.86

Note: All interaction effects between level of learner and technology use were not significant ($p > .05$)

Table 2. Percent of Critical Actions Completed Correctly.

Simulated Case	Critical Action	Used Technology (n = 47)	Did Not Use Technology (n = 47)	Fisher Exact Test p values
Isoniazid Overdose Case	*Administer 1st line medication*	95.2%	80.8%	.204
	Administer 2nd line medication	71.4%	72.0%	1.0
	Identify unlabeled pill	35%	0%	.002
	Administer pyridoxine	73.7%	64.0%	.534
Intracranial Hemorrhage Case	*Medication to manage hypertension*	80.8%	55.0%	.105
	Identify unlabeled pill	61.5%	0%	<.001
	Medication to reverse coagulopathy	48.0%	50.0%	1.0

22 Emergency Medicine Resident On Shift Clinical Teaching Efficacy as Measured by Student Evaluation and Self-Reflection Using a Previously Validated Metric

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Background: The Emergency Department (ED) is a rich and unique educational environment, though at times may be difficult to provide clinical teaching to students. It has been estimated that 33% of all student education comes from residents. While a formal teaching Milestone was dropped from early drafts, the current ACGME Emergency Medicine (EM) project mentions teaching in 6 Milestones.

Objectives: The purpose of this study is to assess students' perceptions of and senior residents' self-assessments of EM resident's clinical teaching ability while on shift in the ED

Methods: This prospective study was conducted at a hospital with a 4 year dually approved EM residency and serves as a regional medical campus. Using a previously validated metric of EM attending teaching efficacy (Steiner et al, AEM 2000), students anonymously evaluated the teaching received from a senior (PGY 3 or 4) EM resident. The resident self-assessed their teaching using the same tool. Demographic information about both study groups was gathered, including prior knowledge of or training in clinical teaching models. Data was gathered using New Innovationsâ„¢ and analyzed using descriptive statistics. This study received support from an unrestricted research grant.

Results: Over 12 months, this IRB approved study enrolled 74 students, of whom 52.7% were female. Average age was 27.9 years. Students came from 25 discrete Medical and 6 PA schools. 48, or 64.9% were MS, all of whom were 4th years. The remaining 26 (35.1%) were PA. Prior knowledge of teaching models by students was limited. Fully 86.5% had no prior knowledge of either model (SNAPPS or 1 Minute Preceptor). Enrolled residents numbered 42, with 26.2% female. Average age was 32.0 years. Prior knowledge was noted by 38.1%. Prior training was most commonly 1-4 hours (31%), with 64.3% having anywhere from 1 to >4 hours. In total, the study had 517 on-shift teaching assessments. Figure 1 demonstrates the student responses, with Figure 2 denoting the resident self-assessments. Not Enough Time denotes a survey submitted without any responses.

Conclusions: In this single site study, student impressions of resident teaching were more favorable than resident self-assessments. There appears to be room for interventions to improve EM resident teaching of students.

Figure 1. Student Assessment of Resident Teaching Using the ER Scale.

	Didactic	Clinical	Approachable	Helpful
Students Overall N (%)				
Outstanding	180 (34.8)	196 (37.9)	275 (53.2)	297 (57.4)
Above Average	144 (27.8)	137 (26.5)	70 (13.5)	53 (10.3)
Average	32 (6.2)	25 (4.8)	13 (2.5)	9 (1.7)
Below Average	1 (0.2)	2 (0.4)	2 (0.4)	1 (0.2)
Unacceptable	0	0	0	0
Not Enough Time	34 (6.6)	34 (6.6)	34 (6.6)	34 (6.6)
Missing	126 (24.4)	123 (23.8)	123 (23.8)	123 (23.8)
Med Students N (%)				
Outstanding	113 (32.3)	126 (36.0)	196 (56.0)	192 (54.8)
Above Average	102 (29.1)	97 (27.7)	41 (11.7)	45 (12.9)
Average	28 (8.0)	22 (6.3)	8 (2.3)	9 (2.6)
Below Average	1 (0.3)	2 (0.6)	2 (0.6)	1 (0.3)
Unacceptable	0	0	0	0
Not Enough Time	19 (5.4)	19 (5.4)	19 (5.4)	19 (5.4)
Missing	87 (24.9)	84 (24.0)	84 (24.0)	84 (24.0)
PA Students N (%)				
Outstanding	67 (40.1)	70 (41.9)	79 (47.3)	105 (62.9)
Above Average	42 (25.2)	40 (24.0)	29 (17.4)	8 (4.8)
Average	4 (2.4)	3 (1.8)	5 (3.0)	0
Below Average	0	0	0	0
Unacceptable	0	0	0	0
Not Enough Time	15 (9.0)	15 (9.0)	15 (9.0)	15 (9.0)
Missing	39 (23.3)	39 (23.3)	39 (23.3)	39 (23.3)