Table 1. Impact of the change to a four-year program on academic or leadership position and scholarly output, OR (95% CI).

	Academic position*	Peer reviewed publication at graduation	Peer reviewed publication, one year post-graduation	Leadership position**	Publications & presentations	Academic position excluding fellowship	Peer reviewed publication at 48 months†
Four-year program	2.14 (0.72-6.32)	3.86 (2.06-7.23)	8.79 (2.37-32.62)	12.65 (2.02-79.36)	8.51 (2.28-31.78)	3.32 (0.94-11.71)	3.24 (1.44-7.30)
Advanced degree	4.31 (1.60-11.60)	2.45 (0.72-8.28)	3.55 (0.87-14.42)	3.48 (1.16-10.44)	1.06 (0.29-3.82)	3.29 (1.23-8.80)	2.84 (0.84-9.62)
USMLE Step 1§	1.03 (0.99-1.07)	1.00 (0.98-1.02)	0.98 (0.96-1.01)	–	1.03 (0.98-1.07)	1.02 (0.99-1.05)	1.00 (0.98-1.03)
Female	1.62 (0.59-4.44)	1.91 (0.94-3.88)	1.62 (0.69-3.81)	2.28 (0.93-5.60)	0.36 (0.07-1.82)	2.08 (0.76-5.71)	1.75 (0.85-3.61)
N	92	92	92	92	81	92	92

All data stated as odds ratios with 95% confidence interval (in parentheses). ** USMLE was collinear with four-year program and so was dropped; † Compares publication at graduation for four-year program and one year after graduation for three-year program; §USMLE, United States Medical Licensing Examination; *OR,* odds ratio; *CI,* confidence interval.

3 Impact of Medical Students Notes on Emergency Department Billing

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Background: On 2/2/18, the Centers for Medicare and Medicaid Services (CMS) announced a revision allowing teaching physicians to use student documentation for billing if the teaching physician verifies the documentation. There is limited data on the efficacy of medical students notes used in billing for Emergency Medicine. While more institutions are permitting billable medical student notes, the effects have not been studied.

Objectives: The aim of the study is to compare the change in Emergency Department efficiency, measured in relative value units (RVUs), when notes were written by medical student (2019) compared to resident/attending (2018). We predict medical student notes are as effective or superior to resident or attending physician notes. A secondary aim is to determine whether the number of notes written by medical students has changed. To understand the impact of the Centers for Medicare and Medicaid Services rule change allowing medical students notes to be used for Emergency Department billing

Methods: This project is a retrospective before-after study in the ED of a tertiary teaching university. Notes with medical student authors were identified for the pre (3/2018-5/2018) and post (3/2019-5/2019) periods. This time period was selected as our institution adopted the CMS policy for utilizing the medical student note for billing in 01/2019. Outcomes included RVUs per note and number of notes written per medical student. Wilcoxon rank sum tests and generalized estimating equations clustered on note author assessed for pre-post differences in note quality (RVU) and quantity.

Results: After the intervention, there was a 0.32 increase (95%CI 0.13 to 0.51, p=0.001) in RVUs per note compared to before the intervention. Number of notes written per medical student was higher in the post-intervention group (median 51 notes [IQR: 42-57]) compared to the pre-intervention group (median 7 notes [IQR: 3-8.5])(p<0.001).

Conclusions: Medical student notes result in higher RVU totals after the CMS revision. Medical students wrote more notes when they were used for billing.

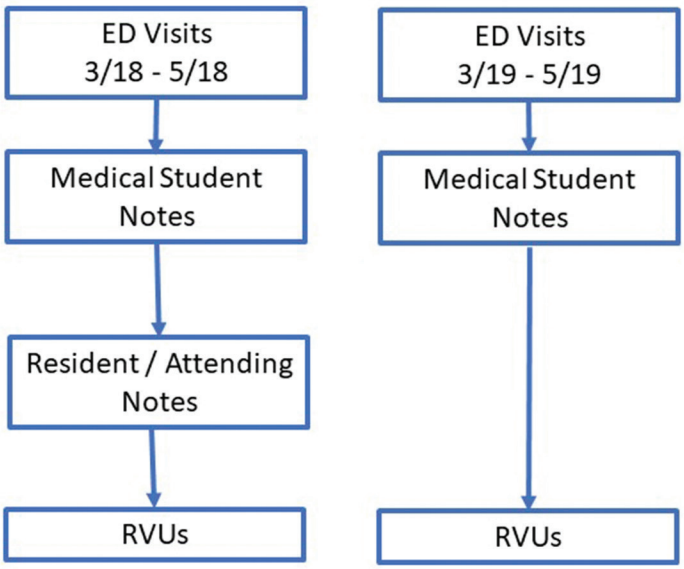

Figure 1.

4 Implementation of a Modified NCAT-EM shift card on Completion Rates of Assessments by Faculty in an Emergency Medicine Clerkship

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Background: One of the biggest challenges facing Emergency Medicine (EM) Clerkship Directors is acquiring meaningful clinical assessments from the faculty. Both at our institution and nationally return rates have been as low as 20% (Lawson eval). We created a modified NCAT-EM shift card that combines a validated nationally standardized tool in EM with a traditional shift card with which students themselves fill in patient initials, chief complaints, comments and procedures with a goal that this would inspire quality formative feedback and motivate improved compliance.

Objectives: Improve completion rates by using a new tool, a modified NCAT-EM shift card that combines a validated nationally standardized tool in EM with a traditional shift card. The primary objective in this study is to determine the impact of implementation a new EM Clerkship shift evaluation tool in an EM Clerkship. We aim to identify improvements in compliance rates as well as quality of data using the new tool in comparison to the prior electronic platform.

Methods: We reviewed data over 24 months in the pre-implementation period to determine a baseline. We present

the initial 6 months of post-implementation data. This is an implementation, time (AB) series design study, comparing data before and after changing to the modified NCAT-EM shift evaluation tool.

Results: A total of 1521 of the requested 3536 evaluations and a total of 947 of the requested 1081 evaluations were analyzed in 6 month post-implementation time period. Following our timeline pre implementation the average compliance rate From April 2017 through March 2019 was 43% (range 28-58%). Post implementation, over the 6 months following adoption of the modified NCAT-EM, the compliance rate improved to an average of 88% (range 82-94%). This shows a 104.6 % increase.

Conclusions: Implementation of the modified NCAT-EM shift card to acquire faculty evaluations of fourth year medical students on a required Emergency Medicine Clerkship showed an improvement in compliance from a baseline mean completion rate of 43% to 88% in the post-implementation period. Our strategy and tool was simple to implement, and offers an approach to improve compliance with faculty evaluations in the clinical setting.

5 The Effectiveness of Teaching Evidence Based Medicine to Medical Students Using a Journal Club Curriculum

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Background: Evidence-based medicine (EBM) is identified by the Association of American Medical Colleges as an Entrustable Professional Activity for medical students entering residency, yet competency is only achieved 63.8% of the time in incoming residents. To help prepare students for residency, the ACE Tool--a validated instrument for assessing EBM competence--was used as an initial needs assessment to measure students' knowledge. The authors then implemented a new EBM curriculum in a mandatory fourth-year emergency medicine (EM) clerkship, using a weekly journal club format. This interactive "flipped classroom" module was selected to allow problem- and team-based learning and reflection on articles relevant to the current practice of EM, including endovascular intervention for stroke, contrast associated nephropathy, and the HEART Pathway. After implementation, the ACE tool was again used for assessment of the students' knowledge.

Objective: To determine if this curriculum effectively increased the knowledge of EBM in fourth-year medical students. The hypothesis was that ACE would be significantly improved. To determine if the implementation of an evidence-based medicine curriculum in the format of a journal club effectively increased the knowledge of evidence-based medicine in fourth-year medical students.

Methods: This study retrospectively examined and compared the ACE scores of all fourth-year medical students enrolled in the EM clerkship from June 2017 to May 2019, a total of 304 students. The EBM curriculum was implemented in June 2018. The distribution of scores was not normal, so a Mann-Whitney U test was used to look for a difference in ACE test scores.

Results: All eligible students were included in the study with none excluded. There was a statistically significant difference in mean ACE scores of students not exposed to the new EBM curriculum (60.4%) compared to those who were (68.7%) ($p < 0.00001$).

Conclusion: Our focused EM-clerkship-based EBM curriculum improved knowledge in fourth-year medical students, as measured by the ACE tool. This curriculum is feasible and effective and could be implemented at other institutions.

6 Using the QSAT to Generate Multi-Source Feedback on an In-Situ Pediatric Simulation Case

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Background: Multi-source Feedback (MSF) is a suggested evaluation method by the Accreditation Council for Graduate Medical Education (ACGME). The Queen's Simulation Assessment Tool (QSAT) has been validated to discriminate between resident performances in a simulation (sim) setting. Our prior published work has demonstrated excellent inter-rater reliability (IRR) using the QSAT for MSF with an adult case in the sim lab.

Objectives: Using the QSAT, this study seeks to determine the degree of agreement of MSF on a single pediatric (peds) sim case conducted in-situ in the Emergency Department (ED).

Methods: This IRB approved study was conducted at a four year EM residency which trains 13 residents a year. A peds resuscitation case was developed with specific behavioral anchors on the QSAT, which uses a 1-5 scale in each of 5 categories. Data was gathered from each of 6 participants in the sim. The resident lead self-evaluated and also received MSF from each of a junior resident peer, a fixed peds ED nurse (RN), a random ED RN, and 2 faculty (one fixed, the other from a dyad). Reported are the mean scores and standard deviation (SD) for each. IRR is reported as Intraclass Correlation Coefficients (ICC) with 95% Confidence Intervals (CI) and are interpreted based on Cicchetti et al.

Results: The sim was run on 35 separate days over 2 academic years. Mean QSAT scores are in Table One. Table Two demonstrates ICC with fair IRR. Here all ICC CI's overlap, suggesting no statistically significant difference between sources of feedback. Removing self-evaluation led