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Emergency Medicine Career Outcomes and Scholarly Pursuits: The Impact of Transitioning From a Three-year to a Four-year Niche-based Residency Curriculum

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Best of the Best Oral Abstracts

1 Association of Videolaryngoscopy Utilization and Junior Trainee Intubation Attempts: A National Emergency Airway Registry Study

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Learning Objective: We seek to determine whether there is any association between the frequency with which videolaryngoscopy (VL) is utilized at particular institutions and the proportion of first intubation attempts given to junior trainees.

Methods: We performed a secondary analysis of prospectively collected observational data in the National Emergency Airway Registry from January 1, 2016 to December 31, 2018. The primary outcome measure was the percentage of first and second attempt intubations performed by intubators at the PGY1 training level, stratifying institutions by quintile according to the proportion of VL intubations they performed. We performed logistic regressions to see if increased hospital-level VL use is associated with a higher likelihood of first or second attempt intubation being performed by PGY1. We calculated and graphed the estimated proportions of PGY1 intubations and corresponding 95% CI for each quintile using marginal estimation methods. We reported general descriptive statistics as well odds ratios with cluster-adjusted 95% confidence intervals.

Results: 19,071 completed intubations were recorded at 25 institutions, 156 (0.8%) did not record a device, of which 18,897 were first attempt intubations, 2,315 were second attempt and the remaining 645 were third or attempt or higher. We found the proportion of first attempt PGY-1 intubations was 6.89% in the first quintile, 13.44% in the second, 13.39% in the third, 18.32% in the fourth and 8.67% in the fifth. We fit logistic regressions to estimate associations between institutional ranking of percent first attempt VL and percentage of PGY1 first and second attempt intubations at that institution. We found that relative to first quintile, institutions ranked in the fourth quintile of VL intubations are significantly more likely to have first attempt and second intubation performed by a PGY1 level intubator with ORs of 3.03, (95% CI 1.62 - 5.65) and OR 1.94, (95% CI 1.09 - 3.44).

Conclusion: This analysis shows an association between higher institution-specific utilization of VL and a higher rate of either PGY-1 first attempts or PGY-1 second attempt intubations.

2 Emergency Medicine Career Outcomes and Scholarly Pursuits: The Impact of Transitioning From a Three-year to a Four-year Niche-based Residency Curriculum

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Background: Emergency Medicine residency programs exist in both three- and four-year training formats, the majority of which are three-year programs. It is unclear what impact training program length may have on residents' scholarly activity and longer-term career goals. In 2008, our residency transitioned from a three-year to a four-year training format.

Objectives: We hypothesized that a three-year to four-year curriculum format change would lead residents to be more scholarly productive and more frequently attain academic jobs and leadership positions in their first post-residency positions. To determine the effect changing our EM residency program from a three- to four-year format had on residents' likelihood of being scholarly productive and attaining an academic job and leadership role in their first post-residency position

Methods: This was a retrospective analysis of residents (N=95) who graduated from a single residency program that underwent a curriculum change from a three-year to a four-year training format. Three cohorts prior to (N=36) and five cohorts after (N=59) this transition were included. The primary outcome of interest was the setting (academic or not) of graduates' first post-residency position. Secondary outcomes included completion of scholarly activity during training and attaining a leadership role in the first post-residency position.

Results: Of the four-year program graduates, 44% obtained an academic position vs 28% of three-year program graduates. After controlling for confounders (gender, test scores, additional advanced degree(s)), this difference was not statistically discernible (OR 2.14 [95% CI, 0.72-6.32]). Residents in the four-year format had a higher likelihood of producing scholarly work by graduation (OR 8.51 [95% CI, 2.28-31.78]) and of obtaining a leadership position immediately after graduation (OR 12.65 [95% CI, 2.02-79.36]).

Conclusions: Compared to three-year residency graduates, graduates of our four-year curriculum were more likely to produce scholarly work and to secure a leadership position immediately after graduation.

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.

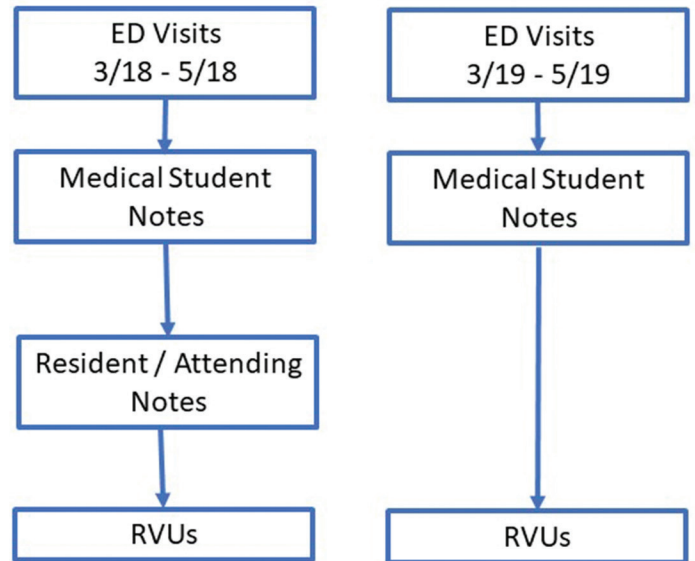


Figure 1.

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

Schlein S / University of Vermont

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