Table 1: Relative value of topics for inclusion in EM curriculum, according to residents

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL
Palliative Care in the ED	0.00% 0	3.33% 1	6.67% 2	60.00% 18	30.00% 9	30
Quality Improvement and Patient Safety	0.00% 0	0.00% 0	0.00% 0	63.33% 19	36.67% 11	30
Resident as Teacher	0.00% 0	0.00% 0	13.33% 4	43.33% 13	43.33% 13	30
Professionalism	0.00% 0	3.33% 1	10.00% 3	50.00% 15	36.67% 11	30
Journal Club	0.00% 0	0.00% 0	3.33% 1	53.33% 16	43.33% 13	30
Billing and Coding	0.00% 0	0.00% 0	13.33% 4	63.33% 19	23.33% 7	30
Medicolegal	0.00% 0	0.00% 0	3.33% 1	60.00% 18	36.67% 11	30
Business of EM	0.00% 0	6.67% 2	20.00% 6	53.33% 16	20.00% 6	30
EMS	0.00% 0	3.33% 1	16.67% 5	63.33% 19	16.67% 5	30
Communication Skills	0.00% 0	6.67% 2	0.00% 0	53.33% 16	40.00% 12	30
Event Medicine	0.00% 0	0.00% 0	43.33% 13	46.67% 14	10.00% 3	30
Advocacy in EM	0.00% 0	0.00% 0	20.00% 6	60.00% 18	20.00% 6	30
Wilderness Medicine	0.00% 0	3.45% 1	27.59% 8	62.07% 18	6.90% 2	29
Sports Medicine	0.00% 0	3.33% 1	26.67% 8	63.33% 19	6.67% 2	30
Self Assessment and Coaching	0.00% 0	3.45% 1	20.69% 6	51.72% 15	24.14% 7	29
Evidence-Based Medicine	0.00% 0	0.00% 0	0.00% 0	33.33% 10	66.67% 20	30
Research Skills	0.00% 0	0.00% 0	26.67% 8	56.67% 17	16.67% 5	30
Ethics in EM	0.00% 0	6.67% 2	13.33% 4	53.33% 16	26.67% 8	30
Team Management	0.00% 0	0.00% 0	0.00% 0	53.33% 16	46.67% 14	30
Systems Based Practice	0.00% 0	3.33% 1	0.00% 0	63.33% 19	33.33% 10	30
Wellness	0.00% 0	6.67% 2	10.00% 3	43.33% 13	40.00% 12	30
Time Management	0.00% 0	0.00% 0	6.67% 2	50.00% 15	43.33% 13	30

Table 2: Relative value of potential CORD curricular toolkits according to faculty

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL
Palliative Care in the ED	0.00% 0	4.08% 2	20.41% 10	42.86% 21	32.65% 16	49
Quality Improvement and Patient Safety	0.00% 0	5.77% 3	11.54% 6	38.46% 20	44.23% 23	52
Resident as Teacher	0.00% 0	1.92% 1	23.08% 12	46.15% 24	28.85% 15	52
Professionalism	0.00% 0	7.69% 4	30.77% 16	36.54% 19	25.00% 13	52
Journal Club	0.00% 0	15.38% 8	38.46% 20	28.85% 15	17.31% 9	52
Billing and Coding	0.00% 0	1.92% 1	19.23% 10	32.69% 17	46.15% 24	52
Medicolegal	0.00% 0	1.96% 1	25.49% 13	29.41% 15	43.14% 22	51
Business of EM	0.00% 0	1.92% 1	21.15% 11	36.54% 19	40.38% 21	52
EMS	0.00% 0	9.62% 5	46.15% 24	32.69% 17	11.54% 6	52
Communication Skills	3.85% 2	3.85% 2	28.85% 15	36.54% 19	26.92% 14	52
Event Medicine	7.69% 4	21.15% 11	36.54% 19	26.92% 14	7.69% 4	52
Advocacy in EM	0.00% 0	13.46% 7	36.54% 19	28.85% 15	21.15% 11	52
Wilderness Medicine	7.69% 4	13.46% 7	44.23% 23	25.00% 13	9.62% 5	52
Sports Medicine	1.92% 1	13.46% 7	34.62% 18	32.69% 17	17.31% 9	52
Self Assessment and Coaching	1.96% 1	3.92% 2	37.25% 19	33.33% 17	23.53% 12	51
Evidence-Based Medicine	3.92% 2	5.88% 3	21.57% 11	35.29% 18	33.33% 17	51
Research Skills	3.92% 2	7.84% 4	19.61% 10	49.02% 25	19.61% 10	51
Ethics in EM	0.00% 0	6.00% 3	26.00% 13	52.00% 26	16.00% 8	50
Team Management	0.00% 0	3.92% 2	25.49% 13	43.14% 22	27.45% 14	51
Systems Based Practice	1.96% 1	7.84% 4	31.37% 16	47.06% 24	11.76% 6	51
Wellness	1.96% 1	9.80% 5	25.49% 13	43.14% 22	19.61% 10	51
Time Management	0.00% 0	3.92% 2	35.29% 18	27.45% 14	33.33% 17	51

Innovations Abstracts

1 Peer-Guided Lightning Electrocardiogram Curriculum

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Background: Electrocardiogram (ECG) competence is widely recognized as an important and necessary component of emergency medicine (EM) training, but there is no standard educational curriculum. Residents are neither confident nor accurate in their ability to interpret ECGs.

Educational Objectives: We aimed to evaluate the effectiveness of a novel educational curriculum to improve EM interns' ECG interpretation competence and confidence.

Curricular Design: EM interns (n = 18) were randomly assigned two specific ECG topics to review and discuss during a month-long educational orientation (total of 36 topics). Subjects were instructed to prepare a "lightning talk"(< 10 minutes) for each of their assigned topics, highlighting the salient features of at least five ECGs, and to distribute them beforehand. In this manner, traditional classroom lectures were replaced with peer discussions. A baseline examination was administered prior to the orientation month, followed by another immediately after completion of the curriculum. A third examination was administered six months later. The three examinations were administered in a proctored classroom using the web-based RoshReview application, each with 20 questions of equivalent difficulty. We used a paired t-test to compare the scores of participants who completed all three examinations. Surveys using a visual analog scale (VAS, 0-100) assessed interns' confidence in ECG interpretation before and after completion of the curriculum. We analyzed survey results using the Mann-Whitney U test.

Impact/Effectiveness: Fifteen interns completed all three examinations (83.3%). The mean baseline, post-orientation, and six-month scores were 72.5%, 88.8%, and 81.1%, respectively. Both the post-orientation and six-month scores were significant higher than baseline (16.3%, 95% confidence interval [CI], 6.82 to 25.84; p = 0.002; 8.6%, 95% CI, 2.11 to 15.08; p = 0.013). Six-month scores were significantly lower than the post-orientation scores (-7.7%, 95% CI, -14.9% to -0.6%, p = 0.036). Fourteen interns completed both surveys (78%). ECG interpretation confidence was significantly greater after completion of the curriculum (median VAS 80 vs 45, p = 0.01).This study provides preliminary evidence for the effectiveness of a non-traditional, peer-guided, "lightning talk" educational curriculum for improving the ECG interpretation skills and confidence in EM interns.

thoracotomy on a simulator. They were given a standardized prompt and their performance was evaluated in real time via a dichotomous, previously validated checklist. A score of 90.4% of checklist items correct was derived using the Mastery Angoff approach and was set as the minimum passing standard. All EM residents not involved with the development of the checklist were invited to participate. We compared the percentage of checklist items completed by postgraduate year (PGY) and self-reported prior experience with emergent thoracotomy, using one-way analysis of variance.

Results: Of eligible residents**,** 52/56 (92.8%) completed the needs assessment testing. Overall average performance on the checklist was 47% of actions performed correctly. We found a significant difference in performance by level of training ($p<0.01$). Trainees who had previously witnessed or performed an EDT performed significantly better than those who had not ($p<0.01$). No resident met the previously established minimum passing standard.

Conclusion: Baseline performance of residents performing an EDT is poor with no residents meeting the minimum passing standard. Senior residents (PGY-3 and PGY-4) performed better compared to junior residents (PGY-1 and PGY-2). Residents with prior exposure or experience to EDT performed better compared to residents without exposure or experience. However, routine training in residency is insufficient to ensure successful performance of this procedure. Further education regarding ED thoracotomy is necessary in residency training.

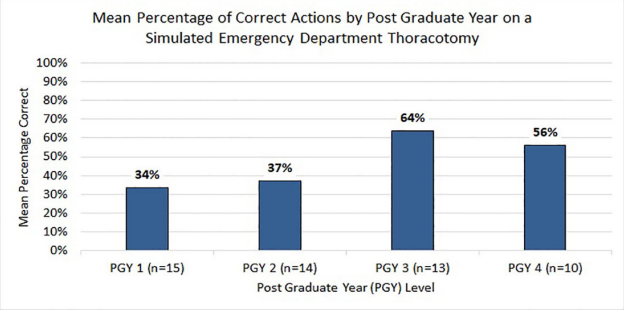

Figure 1: Comparison of Mean Percentage of Correct Actions by Post Graduate Year on a Simulated Emergency Department Thoracotomy by Emergency Medicine Trainees ($p<0.01$).

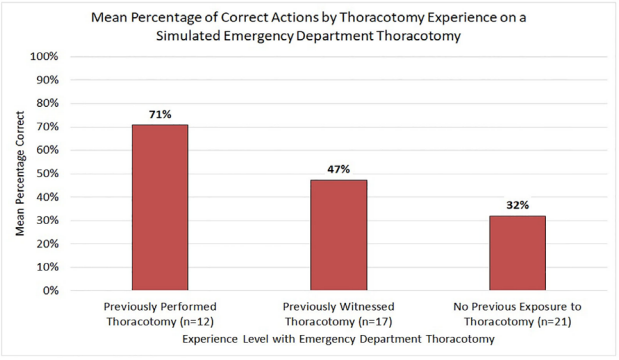

Figure 2: Comparison of Mean Percentage of Correct Actions by Thoracotomy Experience on a Simulated Emergency Department Thoracotomy by Emergency Medicine Trainees ($p<0.01$).

31 A Needs Assessment for the Development of "Orphan" Topic Curricular Toolkits

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Background: The Council of Residency Directors in Emergency Medicine (CORD) Education Committee was tasked with the development of curricular tool kits for dissemination to all emergency medicine (EM) programs. To understand existing educational gaps, the Curricular Toolkit Subcommittee sought to perform a targeted needs assessment.

Objectives: Our goals were to identify "orphan" curricular topics that are not effectively taught but are regarded as important for inclusion in the residency curriculum, and to determine which instructional methods are considered best for conveying the educational content for each "orphan" topic.

Methods: We conducted a national survey of EM residents and program faculty. Questions were developed iteratively by members of the Curricular Toolkit Subcommittee, with example topics chosen from the American Board of Emergency Medicine Model of Clinical Practice, as well as from the expert opinion of the subcommittee members. The survey was piloted among the membership of the CORD Education Committee, with feedback from the pilot incorporated into the final version, which was distributed to the CORD listserv in September 2018.

Results: There were a total of 105 respondents, of whom 58 (55%) were faculty, and 47 (45%) were residents. Fifty-one (49%) identified their primary training site as "university," 20 (19%) as "community," 16 (15%) as "county," and 18 (17%) as"hybrid." Seventy-eight (74%) described the setting of their primary hospital as urban, and 74 (70%) were from three-year programs. Resident respondents most strongly agreed that evidence-based medicine (67%), team management (47%), and resident as teacher (43%) should be included in the EM curriculum, of which resident as teacher was rated as most ineffectively taught (13%). Faculty responded that a dedicated curricular toolkit provided by CORD would be of highest value for billing and coding (46%), quality improvement (44%), and medicolegal (43%) topics. Both faculty and residents favored in-person lectures for medicolegal and billing & coding vs small groups for quality improvement as the best instructional method.

Conclusions: We found discordance between residents and faculty as to which "orphan topics" are more important to include in the residency curriculum, but more of a consensus with regard to best instructional method for each topic.