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Slack Intern Curriculum Supports Intern Preparedness and Bridges Curriculum Gaps due to COVID-19

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Table 1. Descriptive Characteristics of the Data

Characteristic	Overall (n = 58, 802)	Early (n = 31, 866)	Late (n = 18, 933)	p-value
Age, years (median, IQR)	55.00 (35.00, 70.00)	55.00 (36.00, 70.00)	54.00 (33.00, 69.00)	<0.001
Male (n, %)	23,479 (48.2)	14,635 (45.9)	8,844 (46.7)	0.086
ESI (n %)				<0.001
1	2,853 (3.8)	1,350 (4.9)	1,273 (6.7)	
2	17,893 (34.8)	10,989 (34.5)	6,804 (35.4)	
3	26,951 (53.1)	17,264 (54.2)	9,687 (51.2)	
4	3,250 (6.4)	2,011 (6.3)	1,239 (6.5)	
5	95 (0.2)	95 (0.2)	40 (0.2)	
Time to disposition, hours (median, IQR)	2.99 (1.75, 4.01)	3.25 (1.90, 5.04)	2.62 (1.51, 4.31)	<0.001
Log of time to disposition (median, IQR)	1.10 (0.56, 1.57)	1.10 (0.64, 1.62)	0.96 (0.41, 1.45)	<0.001
Arrival (n, %)				<0.001
Daytime arrival	19,271 (37.9)	14,831 (46.6)	4,440 (23.6)	
Evening arrival	22,798 (44.9)	12,381 (38.8)	10,405 (55.0)	
Oversight arrival	8,745 (17.2)	4,657 (14.6)	4,088 (21.6)	
Weekend (n, %)	13,729 (27.0)	8,569 (26.9)	5,160 (27.3)	0.375
Quarter (n, %)				0.02
Q1	13,145 (25.9)	8,205 (25.7)	4,940 (26.1)	
Q2	12,574 (24.8)	7,796 (24.5)	4,778 (25.2)	
Q3	12,194 (24.0)	7,717 (24.2)	4,477 (23.8)	
Q4	12,899 (25.4)	8,151 (25.6)	4,738 (25.0)	
Type of Shift (n, %)				<0.001
Afternoon Shift A	10,942 (21.5)	6,218 (19.5)	4,724 (25.0)	
Afternoon Shift B	4,248 (8.4)	2,848 (8.9)	1,398 (7.4)	
Early Morning Shift	7,398 (14.8)	4,582 (14.4)	2,816 (14.9)	
Evening Shift	9,011 (17.7)	5,367 (16.9)	3,644 (19.1)	
Night Shift	10,024 (21.3)	6,942 (21.8)	3,082 (16.5)	
Regular Shift	8,381 (16.5)	5,882 (18.5)	2,499 (13.2)	

Table 1. Descriptive characteristics of the data.

Table 3. Adjusted Linear Mixed Model Coefficients

Adjusted log(OR) to sleep (Late Shift, Age, Gender, Arrival, Weekend, Quarter, Type Shift, clustered by attending ID)	Coefficient (exponentiated)	CI (exponentiated)	p-value
(Intercept)	1.958	1.863–2.056	<0.01
Late shift (hours 54)	0.840	0.835–0.862	<0.01
Age	1.000	1.000–1.001	0.06
Gender: Male	0.911	0.898–0.924	<0.01
ESI level (reference level ESI1)			
ESI2	1.715	1.661–1.775	<0.01
ESI3	1.846	1.793–1.910	<0.01
ESI4	0.964	0.943–1.006	0.04
ESI5	0.710	0.680–0.829	<0.01
Arrival (reference level Daytime)			
Evening	0.955	0.938–0.955	<0.01
Oversight	0.944	0.912–0.977	<0.01
Weekend	0.997	0.979–1.015	0.73
Quarter (reference level Q1)			
Q2	0.971	0.962–0.991	<0.01
Q3	0.982	0.962–1.002	0.08
Q4	0.942	0.929–0.961	<0.01
Type of Shift (reference level Afternoon Shift A)			
Afternoon Shift B	0.870	0.844–0.897	<0.01
Early Morning Shift	1.055	1.005–1.093	<0.01
Evening Shift	0.890	0.887–0.912	<0.01
Night Shift	0.916	0.896–0.947	<0.01
Regular Shift	0.956	0.929–0.982	<0.01

Table 3. Adjusted linear mixed model coefficients.

8 Slack Intern Curriculum Supports Intern Preparedness and Bridges Curriculum Gaps due to COVID-19

Slack Intern Curriculum; Alisa Hayes; Daniel Axelson; Frosso Adamakos; Herman Lee; *Jonathan Chan*; Michaela Salvo; Moira Davenport; Tazeen Abbas; Thaddeus Schmitt

Objectives: Assess the effectiveness of social media implementation of an Accreditation Council for Graduate Medical Education (ACGME) milestone-based curriculum during the spring 2020 U.S. COVID-19 surge. The hypothesis is that pre-interns will report improvements in PP regarding multiple ACGME milestone topics.

Background: Transitioning to residency involves translation of academic knowledge into clinical acumen, and is complicated by variable medical school experiences. The COVID-19 pandemic presented a new challenge by displacing students from clinical rotations. Virtual educational modalities such as the Slack Intern Curriculum (SIC) have

increased newly-matched “pre-intern” perceived preparedness (PP) for residency in prior years, but the SIC had never been implemented or evaluated in a pandemic with disrupted medical education.

Methods: The SIC was constructed using topics from 8 ACGME milestones in emergency medicine (EM), incorporated into 8 clinical scenarios. Residency recruitment occurred via national EM listservs; of 276 programs, 27 enrolled. Curricular implementation was on Slack workspaces. Cases included stimulus images and clinical questions. Ample discussion time, answers, and resources were provided. Trends in PP were calculated with descriptive statistics and the Wilcoxon Rank Sum test.

Results: Of 311 total pre-interns contacted, 289 (92.9%) completed a presurvey in April/May 2020, and 240 (77.2%) completed a post-survey in June/July 2020, for an 83.9% follow-through rate. Pre-interns reported statistically significant increases in PP both overall and regarding 14 of 21 milestones. See Table 1.

Conclusion: Amidst the educational disruption of the COVID-19 pandemic, pre-interns participating in the SIC reported statistically significant increases in PP. Limitations include absence of control or pre-pandemic data. Future directions include adapting the SIC to other specialties’ ACGME milestones for generalizability across all fields.

Milestone	Level	Pre-Survey	Post-Survey	Comparison	P-value*	
		Med	Mean (SD)	Mean (SD)	95% CI†	
Emergency Stabilization	Recognizing Abnormal Vitals	4	4.44 (0.695)	4.271 (0.756)	(-0.1948, 0.0514)	.28
	Recognizing an Unstable Patient	4	3.84 (0.787)	4.071 (0.659)	(-0.0007, 0.2462)	.15
Diagnosis	Forming a Diagnostic Plan	4	3.516 (0.838)	3.679 (0.738)	(-0.0289, 0.2983)	.03
	Forming a Differential Diagnosis	4	3.574 (0.851)	3.705 (0.807)	(-0.0083, 0.2769)	.07
Diagnostic Studies	Identifying Tests for Diagnostic Tests	4	3.414 (0.795)	3.562 (0.757)	(-0.0011, 0.2600)	.07
	Qualifying the Appropriateness of Tests	4	3.712 (0.799)	3.525 (0.781)	(-0.0222, 0.2187)	.09
	Interpreting Test Results	4	3.573 (0.815)	3.519 (0.832)	(-0.019, 0.2185)	.32
Pharmacology	Recognizing Pharmacology of Medications	3	3.099 (1.007)	3.142 (0.912)	(-0.0017, 0.2474)	.50
	Selecting Appropriate Medications	3	2.865 (0.935)	3.108 (0.914)	(-0.0088, 0.4009)	.002
Disposition	Recognizing need for Additional Resources	3	3.215 (0.969)	3.408 (0.919)	(-0.0324, 0.3552)	.01
	Recognizing need for Admission to Hospital	3	3.118 (0.878)	3.425 (0.845)	(-0.1598, 0.4519)	<0.001
General Approach to Procedures	Recognizing Appropriate Level of Care for Admission	3	2.837 (0.892)	3.267 (0.944)	(-0.2713, 0.5975)	<0.001
	Recognizing Relevant Anatomy for a Procedure	3	2.983 (1.029)	3.179 (0.979)	(-0.0245, 0.3604)	.02
Procedures	Identifying Indications/Contraindications for Procedures	3	2.879 (0.970)	3.167 (0.967)	(-0.1217, 0.4539)	<0.001
	Identifying Appropriate Equipment for Procedures	3	2.668 (0.979)	3.062 (0.960)	(-0.2385, 0.5606)	<0.001
Airway Management	Identifying Pharmacology of Airway Medications	3	2.664 (0.997)	3.158 (1.003)	(-0.3348, 0.6578)	<0.001
	Confirming Endotracheal Tube Placement	4	3.802 (1.004)	3.867 (0.828)	(-0.2685, 0.5214)	<0.001
	Recognizing Upper Airway Anatomy	3	3.076 (1.008)	3.283 (0.999)	(-0.0360, 0.3841)	.03
Other Diagnostic Procedures	Recognizing Indications for Ultrasound	4	3.519 (0.902)	3.404 (0.807)	(-0.1891, 0.4312)	<0.001
	Optimizing EKG Images	3	2.661 (1.165)	2.950 (1.108)	(-0.0945, 0.4837)	.003
	Interpreting US Images	3	2.799 (1.087)	3.154 (1.001)	(-0.1760, 0.5334)	<0.001
	Overall Perceived Preparedness for Residency	3	3.107 (0.861)	3.350 (0.856)	(-0.0974, 0.3681)	<0.001

Table 1. Wilcoxon Rank Sum Test summary data on perceived preparedness of United States emergency medicine-bound pre-interns. Pre-curriculum surveys were completed in April/May of 2020, and post-curriculum surveys were completed in June/July of 2020.

9 Serious Medical Outcomes due to Single Substance Opioid Exposures

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Objectives: The present study sought to evaluate the recent trends in the severe outcomes to single substance opioid exposures (SSO) reported to the U.S. poison centers (PCs).