Table 1. Descriptive Characteristics of the Data

Characteristic	Overall (n = 58, 802)	Early (n = 31, 869)	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 (49.2)	14,635 (45.9)	8,844 (46.7)	0.086
ESI (n %)				<0.001
1	2,823 (5.8)	1,550 (4.9)	1,273 (6.7)	
2	17,683 (34.8)	10,989 (34.5)	6,694 (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)	55 (0.2)	40 (0.2)	
Time to disposition, hours (median, IQR)	2.99 (1.75, 4.81)	3.25 (1.98, 5.04)	2.62 (1.51, 4.31)	<0.001
Log of time to disposition (median, IQR)	1.10 (0.56, 1.57)	1.18 (0.64, 1.62)	0.96 (0.41, 1.46)	<0.001
Arrival (n, %)				<0.001
Daytime arrival	19,271 (37.9)	14,831 (46.5)	4,440 (23.5)	
Evening arrival	22,788 (44.9)	12,381 (38.8)	10,405 (55.0)	
Overnight 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, %)				0.03
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 (23.6)	
Q4	12,889 (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 (14.6)	4,582 (14.4)	2,816 (14.9)	
Evening Shift	9,011 (17.7)	5,367 (16.9)	3,644 (19.1)	
Night Shift	10,824 (21.3)	6,842 (21.6)	3,982 (20.5)	
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(time to dispo) ~ Late_shift + age + gender + esicode + 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 5+)	0.849	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	1.713	1.651—1.775	<0.01
ESI3	3.648	3.791—3.910	<0.01
ESI4	0.982	0.948—1.026	0.44
ESI5	0.710	0.600—0.839	<0.01
Arrival (reference level Daytime)			
Evening	0.953	0.938—0.955	<0.01
Overnight	0.944	0.912—0.977	<0.01
Weekend	0.997	0.978—1.015	0.73
Quarter (reference level Q1)			
Q2	0.971	0.952—0.991	<0.01
Q3	0.982	0.962—1.002	0.08
Q4	0.942	0.923—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	1.050	1.005—1.060	<0.01
Evening Shift	0.890	0.867—0.912	<0.01
Night Shift	0.918	0.898—0.947	<0.01
Regular Shift	0.956	0.928—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.

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.

Milestone	Level	Pre-Survey Med	Pre-Survey Mean (SD)	Post-Survey Med	Post-Survey Mean (SD)	Comparison 95% CI*	Comparison p value†
Emergency Stabilization	Recognizing Abnormal Vitals	4	4.344 (0.695)	4	4.271 (0.736)	(-0.1948, 0.0514)	.28
	Recognizing an Unstable Patient	4	3.948 (0.787)	4	4.021 (0.659)	(-0.00007, 0.34621)	.15
Diagnosis	**Forming a Diagnostic Plan**	4	**3.516 (0.838)**	4	**3.679 (0.738)**	**(0.0289, 0.2983)**	**.03**
	Forming a Differential Diagnosis	4	3.574 (0.851)	4	3.708 (0.807)	(-0.00003, 0.27593)	.07
Diagnostic Studies	Identifying Need for Diagnostic Tests	4	3.433 (0.797)	4	3.562 (0.757)	(-0.00141, 0.26303)	.07
	Identifying the Appropriate Tests	4	3.412 (0.799)	4	3.525 (0.781)	(-0.0222, 0.2487)	.09
	Interpreting Test Results	4	3.563 (0.915)	4	3.605 (0.832)	(-0.0419, 0.2268)	.52
Pharmacotherapy	Recognizing Pharmacology of Medications	3	3.059 (1.007)	3	3.142 (0.917)	(-0.00017, 0.24741)	.50
	Selecting Appropriate Medications	3	2.865 (0.935)	3	3.108 (0.914)	(0.0058, 0.4008)	.002
	Recognizing need for Additional Resources	3	**3.215 (0.966)**	4	**3.408 (0.919)**	**(0.0324, 0.3552)**	**.01**
Disposition	**Recognizing need for Admission to Hospital**	3	**3.118 (0.870)**	4	**3.425 (0.845)**	**(0.1598, 0.4539)**	**<.001**
	Recognizing Appropriate Level of Care for Admission	3	2.857 (0.892)	3	3.267 (0.944)	(0.2783, 0.5875)	<.001
General Approach to Procedures	Recognizing Relevant Anatomy for a Procedure	3	2.983 (1.029)	3	3.179 (0.979)	(0.0245, 0.3684)	.02
	Identifying Indications/Contraindications for Procedures	3	**2.879 (0.970)**	3	**3.167 (0.967)**	**(0.1247, 0.4539)**	**<.001**
	Identifying Appropriate Equipment for Procedures	3	2.668 (0.979)	3	3.062 (0.960)	(0.2285, 0.5608)	<.001
Airway Management	Identifying Pharmacology of RSI Medications	3	2.664 (0.997)	3	3.150 (1.003)	(0.3340, 0.6573)	<.001
	Confirming Endotracheal Tube Placement	4	3.502 (1.004)	4	3.867 (0.828)	(0.2085, 0.5214)	<.001
	Recognizing Upper Airway Anatomy	3	**3.076 (1.008)**	3	**3.283 (0.999)**	**(0.0303, 0.3841)**	**.03**
Other Diagnostic and Therapeutic Procedures	Recognizing Indications for Ultrasound	4	3.519 (0.902)	4	3.804 (0.807)	(0.1391, 0.4312)	<.001
	Optimizing US Images	3	2.661 (1.165)	3	2.950 (1.108)	(0.0945, 0.4837)	.003
	Interpreting US Images	3	2.799 (1.087)	3	3.154 (1.001)	(0.1763, 0.5334)	<.001
	Overall Perceived Preparedness for Residency	3	3.107 (0.861)	3	3.350 (0.855)	(0.0974, 0.3881)	<.001

Abbreviations: Med, median; SD, standard deviation; CI, confidence interval; RSI, rapid sequence intubation; US, ultrasound.
*Confidence interval values reflect shift in location (estimated amount change) in the mean.
†Bold type indicates statistical significance.

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 2020.

9 Serious Medical Outcomes due to Single Substance Opioid Exposures

Aaron Frey; Christopher P. Holsteg; Kawai Tanabe; Moira Smith; Saumitra Rege; *Will Goodrich*

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).

Background: Misuse of prescription opioids continues to be a significant public health crisis globally. According to the Centers for Disease Control and Prevention (CDC), there were more than 72,000 overdose deaths in the United States (U.S.), with 49,068 involving an opioid.

Methods: The NPDS was queried for single substance opioid exposures that were reported to the U.S. PCs from 2011 to 2011. Cases with severe outcomes (SO) were defined as exposures that resulted in either a death or major clinical outcomes. We identified and descriptively assessed the relevant demographic and clinical characteristics. Poisson regression models were used to evaluate the trends in the number and rates (per 100,000 human exposures) of single substance opioid exposures resulting in SO. Percent changes from the first year of the study (2011) were reported with the corresponding 95% confidence intervals (95% CI). Logistic regression was utilized to study the risk markers of severe outcomes.

Results: Overall there were 308,202 single substance opioid-related cases reported to the U.S. PCs during the study period. The proportion of cases from ACH increased during the study period (32.9% vs 48.9%). Among cases with severe outcomes, ages between 20 and 29 years (27.9%) constituted the most common age group. Males accounted for 57.4% cases. Most exposures with SO occurred in a residence (83.7%). Hydrocodone (25.6%) was the most common opioid reported in cases followed by oxycodone (18.7%). Intentional abuse (48.4% vs 12.7%) and suspected suicides (24.7% vs 12.9%) were more common in exposures with SO compared to those without SO. Similarly, non-oral routes of administration were more common in exposures with SO (40.9% vs 8.1%). The rate of exposures with SO increased by 71.3% (95% CI: 63.4%, 79.9%, p<0.001). The risk of SO with single substance opioid-related exposures was the highest in cases between 50 and 59 years of age (Ref: 20 – 29 years) (AOR: 1.61, 95% CI: 1.52 – 1.71). Males were 16% more likely than females to have serious outcomes (AOR: 1.16, 95% CI: 1.12 – 1.20). The risk for severe outcomes with single substance opioid exposures was significantly elevated in hydrocodone (AOR: 2.43, 95% CI: 2.30 – 2.58), oxycodone (AOR: 1.64, 95% CI: 1.55 – 1.73) and tramadol (AOR: 1.80, 95% CI: 1.69 – 1.92) exposures. Other Important predictors of a single substance opioid-related SO were suspected suicides (Ref: Unintentional exposure) (AOR: 3.82, 95% CI: 3.67 – 4.09), non-oral routes of administration (Ref: Ingestion) (AOR: 2.94, 95% CI: 2.80 – 3.00) and exposure in the west census region of the U.S. (Ref: Northeast region) (AOR: 1.21, 95% CI: 1.16 – 1.28).

Conclusion: The number of single substance opioid exposures cases handled by the PCs decreased, but those with severe outcomes increased significantly. Hydrocodone and oxycodone were the most common opioid reported for the sample. Personalized evidence-based strategies, population level interventions, creation of protective environments, and better screening of patients are some key measure to limit this trend.

10 Patterns of SSRI Exposures Reported to the U.S. Poison Centers

Avery Michienzi; *Christopher P. Holstege*; Ryan Cole; Saumitra Rege

Objectives: We sought to characterize the SSRIs exposures reported to the U.S. National Poison Data System (NPDS).

Background: More than 20 million antidepressants were prescribed between October and December 2020, a significant increase compared to the same months in the prior year. In 2017, a selective serotonin reuptake inhibitors (SSRIs) was mentioned in 57,254 single-substance toxic exposures reported to United States poison centers (PCs).

Methods: The NPDS was queried for all human exposures to SSRIs reported to the U.S. Poison Centers (PCs) between 2015 and 2020. We descriptively assessed the demographic and clinical characteristics. Calls from acute care hospitals and hospital based EDs (ACH) were studied as a subgroup. Trends in SSRI exposures were analyzed using Poisson regression with percent changes being reported.

Results: There were 346,082 SSRI exposure calls made to the PCs from 2015 to 2020, with the number of calls increasing from 51,791 to 62,504 during the study period. Single substance exposures accounted for 45.5% of such SSRI exposures. Of the total SSRI calls, the proportion of calls from acute care hospitals and EDs decreased from 56.2% to 53.2% from 2015 to 2020. Multiple substance exposures accounted for 65.5% of the overall SSRI calls from acute care hospitals and EDs. Approximately 15% of the patients reporting SSRI exposures were admitted to the critical care unit (CCU), with 18.8% patients admitted to a psychiatric unit. Residence was the most common site of exposure (94.2%), and 63.9% of these cases were enroute to the hospital via EMS when the PC was notified. Among the patients, 66.7% were male, with individuals between ages 13 and 19 years (31%) predominantly reported SSRI exposures. Suspected suicides (58.5%) and therapeutic errors (18.6%) were commonly observed reasons for exposure, with the former accounting for 83% cases reported by ACH. Major effects were seen in 3.7% cases and the case fatality rate for SSRI was 0.3%. Sertraline was the most commonly observed SSRI (23.6%). The most frequently co-occurring substances associated with the cases were atypical antipsychotics (9.3%) and benzodiazepines (8%). Tachycardia (19.7%) and drowsiness/lethargy (15.6%) were commonly observed clinical effects. During the study