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Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title

Time Isn't Your FoCUS, Do Cardiac POCUS!

Permalink

<https://escholarship.org/uc/item/7442042t>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 25(3.1)

ISSN

1936-900X

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Publication Date

2024-03-24

DOI

10.5811/westjem.20430

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Methods: This planned secondary analysis of an IRB approved database enrolled EM residents from a PGY 1-4 residency. Both sims were toxic ingestions: an adult ACLS case conducted in the sim lab and a PALS case conducted in-situ in a pediatric ED. MSF feedback was generated using a Queens Simulation Assessment Tool (QSAT) specific to the case from self-evaluation, a junior resident, an EMS provider (adult), a nurse (2 peds) and two EM faculty. In both sims communication to a consulting toxicologist and admitting intensivist were measured using the 5C's model. The summed QSAT and 5C scores were correlated using Pearson's correlation coefficient with Fisher's z transformation; interpreted as weak (<0.3), moderate (0.3-0.7) and strong (>0.7). Significance was set at 0.05. Positive correlation indicates synchronous movement of scores.

Results: In the adult sim, 32 residents were enrolled (Table 1). There was a moderate positive correlation between attending QSAT and intensivist 5C scores [r=0.332, 95% CI (-0.032, 0.618)], the remaining correlation comparisons were weak, and all were without statistical significance. In the ped sims, 34 residents were enrolled. Those correlations, presented in Table 2, were all weak and without significance.

Table 1. Correlation of QSAT and 5C's score in all residents for adult simulations.

QSAT Metric	5C's Metric	n*	Standard Correlation Coefficient (r) ^a	Fisher's z Transformed Coefficient (zr) (95% CI) ^b	p-value ^c
Average (All Raters)	Average (Toxicologist & Intensivist)	30	0.249	0.254 (-0.122, 0.559)	0.1865
Average (Attending Only)	Average (Toxicologist & Intensivist)	30	0.026	0.026 (-0.338, 0.383)	0.8933
Average (Attending Only)	Toxicologist Only	32	0.135	0.136 (-0.224, 0.462)	0.4639
Average (Attending Only)	Intensivist Only	30	0.332	0.345 (-0.032, 0.618)	0.0728

*4 assessments were missing either the Tax or Int 5C's score, therefore the average score is also missing, which changes the n depending upon the correlation pairing

^aPearson correlation coefficient

^bFisher's z transformed Pearson correlation coefficient

^cp-value corresponds to the Fisher's z transformed correlation coefficient and 95% CI

Table 2. Correlation of QSAT and 5C's score in all residents for pediatric simulations.

QSAT Metric	5C's Metric	n*	Sample Correlation Coefficient (r) ^a	Fisher's z Transformed Coefficient (zr) (95% CI) ^b	p-value ^c
Average (All Raters)	Average (Toxicologist & Intensivist)	31	0.059	0.059 (-0.302, 0.405)	0.7554
Average (Attending Only)	Average (Toxicologist & Intensivist)	31	0.041	0.041 (-0.318, 0.390)	0.8275
Average (Attending Only)	Toxicologist Only	32	0.224	0.228 (-0.135, 0.531)	0.2194
Average (Attending Only)	Intensivist Only	34	-0.158	-0.159 (-0.471, 0.190)	0.3752

*4 assessments were missing either the Tax or Int 5C's score, therefore the average score is also missing, which changes the n depending upon the correlation pairing

^aPearson correlation coefficient

^bFisher's z transformed Pearson correlation coefficient

^cp-value corresponds to the Fisher's z transformed correlation coefficient and 95% CI

Conclusions: Based on this single site cohort, there does not appear to be a correlation between clinical performance and communication skill among EM residents on sim cases. This negative finding could be influenced by the sample size, though use of the Fisher's z transformation was an attempt to control for type two error. If correct, this suggests that residency programs should ensure that clinical and communication skills are measured independently.

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Background: Point-of-care ultrasound (POCUS) is a powerful diagnostic tool which can improve quality and efficiency of care. Clinicians often cite time as a limitation to performing a focused cardiac ultrasound (FoCUS) exam.

Objectives: The primary outcome of this study was to determine the amount of time to complete a quality FoCUS exam. Secondary outcomes evaluated time differences between different training levels.

Methods: Data came from six EDs within Prisma Health from July 1, 2019 - June 30, 2022. Groups included were EM residents (PGY1-PGY3), EM ultrasound (US) fellows, US fellowship-trained EM attendings, and EM attendings credentialed in US. An equal number of exams were randomly selected and reviewed from each group. Exams must have been performed for clinical purposes and received an image quality rating of 3 (average), 4 (good), or 5 (excellent) to be eligible. All patients were age 18 years or older. Time of acquisition was defined as the time difference between the first and final image clips (clips = 6 seconds). Chi-square, T-tests, analysis of variance, and linear regression were performed to evaluate the data obtained in the study.

Results: Of 600 exams, 34% had 3 views and 55.5% had 4 views. The majority of studies (78.9%) had quality ratings of 4 or 5. Attendings had a higher proportion of exams with a quality rating of 5, while residents had more exams with quality ratings of 3 and 4. The average time for all groups to complete a FoCUS was 3.4 minutes. Further analysis shows that residents took on average 3.8 minutes and attendings took 3.1 minutes. On average, PGY1s took 4.6 minutes, PGY2s took 4.0 minutes, and PGY3s took 2.8 minutes (p = <0.0001).

Conclusions: Our study shows it takes EM physicians on average 3.4 minutes to complete a quality FoCUS exam and residents took only 45 seconds longer compared to attendings. Our findings suggest that time should not be a limitation to perform a FoCUS exam on patients who present to the ED.