Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Trial Registration: This study was registered as RBR-5d4dj5 at ensaiosclinicos.gov.br

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Ethical approval and informed consent: The study protocol was approved by the local Ethics Committee (opinion number 3.990.817; CAAE: 30417520.0.0000.0068), which waived the need for written informed consent. We adhere to STROBE guidelines.

No, authors do not have interests to disclose

49 Comparing the Safety and Efficacy of a Rapid High-Sensitivity Cardiac Troponin I Protocol Between Hospital-Based and Free-Standing Emergency Departments

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Study Objectives: Significant variability exists in patient population and diagnostic capabilities of large academic tertiary, community-based hospital, and free-standing emergency departments (ED). Current high sensitivity cardiac troponin I (hs-cTnI) research has been conducted almost exclusively in hospital-based ED (HBED) settings and the translation of these protocols into the free-standing EDs (FSED) has yet to be explored. This study compared the safety, efficacy, and ED throughput of applying a 0/1-hour, rapid-rule out protocol using hs-cTnI for exclusion of acute myocardial infarction (AMI) in HBEDs and FSEDs.

Methods: This was a pre-planned, secondary analysis of a stepped wedge cluster randomized trial of patients evaluated for possible AMI in 9 EDs in an integrated health system from July 2020 through March of 2021. Five of the EDs were HBEDs and four were FSEDs. The trial arms included a new 0/1-hour rapid protocol using hs-cTnI versus standard care, which used a 0/3-hour protocol without reporting hs-cTnI values below the 99th percentile. All adult ED patients were eligible if the treating clinician ordered an ECG and cardiac troponin. We excluded patients with STEMI, a hs-cTnI >18 ng/L in the ED, or a traumatic cause of symptoms. The primary outcome was safe ED discharge, defined as discharge with no death or AMI within 30-days. Analysis included a mixed effect model adjusting for ED site, time, sex, age, and race. We report adjusted odds ratios (aOR).

Results: The trial included 32,609 patients, of whom 26,957 were seen in HBEDs and 5,652 were seen in FSEDs. Safe discharge from HBED occurred 53% (5947/11,062) of the time in the standard care arm and 50.4% (8,005/15894) under the rapid rule-out protocol (aOR 1.04, 95% CI 0.94 – 1.15, p = 0.5). Safe discharge from a FSED occurred 86.2% (2106/2443) of the time in the standard care arm and increased to 95.1% (3052/3209) under the rapid protocol (aOr 1.48, 95% CI 1.03 – 2.13, p=.033). Initiation of a rapid rule-out protocol had no significant impact on overall ED length of stay (aOR 1.00, 95% CI 0.98-1.03, p = 0.8). There was a statistically significant reduction in FSED length of stay with application of a rapid rule-out protocol (3.43 hours (2.55, 4.58) vs. 3.97 hours (2.88, 4.77) using standard care, aOR 0.91, 95% CI 0.87-0.95, p <0.001). The percentage of patients who rule-out with their initial hs-cTnI (<4 ng/L) at FSEDs (74%) was significantly larger when compared to hospital based EDs (54%), p<.001. Safe discharge data for all 9 ED sites is detailed in table 1.

Conclusion: Implementation of a hs-cTnI rapid 0/1-hour protocol to evaluate for AMI in FSEDs is feasible and had greater impact on safe ED discharge and length of stay compared to HBEDs.

		Overall	Standard of Care	RACE-IT	% Difference	Adjusted OR	*P*-value
Freestanding ED	Site 1	910 / 1,046 (87.0%)	686 / 800 (85.8%)	224 / 246 (91.1%)	+5.3%	1.73 (1.07-2.93)	0.032
	Site 2	342 / 416 (82.2%)	311 / 380 (81.8%)	31 / 36 (86.1%)	+4.3%	1.49 (0.59-4.60)	0.437
	Site 3	3,085 / 3,326 (92.8%)	687 / 810 (84.8%)	2,398 / 2,516 (95.3%)	+10.5%	3.65 (2.76-4.82)	<0.001
	Site 4	821 / 864 (95.0%)	422 / 453 (93.2%)	399 / 411 (97.1%)	+3.9%	2.39 (1.09-5.07)	0.017
	Total	**5158 / 5652 (91.3%)**	**2106 / 2443 (86.2%)**	**3052 / 3209 (95.1%)**	**+8.9%**	**1.48 (1.03-2.13)**	**0.033**
Hospital Based ED	Site 5	3,606 / 5,809 (62.1%)	2,533 / 3,937 (64.3%)	1,073 / 1,872 (57.3%)	-7.0%	0.71 (0.63-0.80)	<0.001
	Site 6	3,114 / 5,789 (53.8%)	384 / 704 (54.5%)	2,730 / 5,085 (53.7%)	-0.8%	0.99 (0.84-1.17)	0.901
	Site 7	2,778 / 6,718 (41.4%)	900 / 2,428 (37.1%)	1,878 / 4,290 (43.8%)	+6.7%	1.39 (1.24-1.55)	<0.001
	Site 8	1,822 / 4,176 (43.6%)	502 / 1,247 (40.3%)	1,320 / 2,929 (45.1%)	+4.8%	1.21 (1.05-1.39)	0.010
	Site 9	2,631 / 4,465 (58.9%)	1,628 / 2,746 (59.3%)	1,003 / 1,719 (58.3%)	-1.0%	0.95 (0.83-1.08)	0.401
	Total	**13951 / 26957 (51.8%)**	**5947 / 11062 (53.8%)**	**8005 / 15895 (50.4%)**	**-3.4%**	**1.04 (0.94 – 1.15)**	**0.500**
	All Sites	**19,109 / 32,609 (58.6%)**	**8,053 / 13,505 (59.6%)**	**11,056 / 19,104 (57.9%)**	**-1.3%**	**1.03 (0.94-1.13)**	**0.500**

Table 1: Comparison of safe ED chest pain discharge rates between standard care and RACE-IT arms in all 9 EDs.

Yes, authors have interests to disclose

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50 Hospital Admission Rates and Mortality Among Emergency Department Patients With COVID-19 Discharged With Remote Patient Monitoring With or Without HO2ME (home oxygen) – A Value-Based Approach

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Introduction: The pandemic caused by the novel Coronavirus 2019 (COVID-19) overwhelmed health care systems with emergency department (ED) and hospital crowding. Our hospital system was able to discharge a subset of COVID-19 patients home with remote patient monitoring (RPM) and home oxygen (HO_2ME) if needed, which opened up beds for the more critical patients. The objective of this study was to review the all-cause 30-day mortality and admission rates for patients chosen for our program, and to additionally examine the financial impact.

Methods: This was a retrospective cohort study of ED patients who tested positive for COVID-19, and who were discharged home on RPM with or without HO_2ME. For the primary statistical analysis, descriptive statistics were calculated and reported as medians with interquartile ranges. For the purpose of financial analysis, we filtered a subset of insured patients who were sent home with oxygen.

Results: 490 patients were enrolled with a median age of 62 years (interquartile range (IQR), 59-65 years), and median body mass index (BMI) of 31 (IQR 26-37). The most common co-existing conditions were obesity and hypertension (43%), followed by diabetes mellitus (23%). Of the 490 patients, 151 patients (31%) met requirements for home oxygen and were discharged with oxygen via nasal canula in addition to their RPM device. Over a median enrollment time of 15 days (IQR 10-22), patients discharged from the emergency department on the RPM program were observed to have an all-cause 30-day mortality rate of 3.2% (95% CI, 1.8%-5.2%). The observed rate of all-cause admission within 30 days was 17% (IQR 14-21). The financial analysis revealed that insurance companies saved and that was just a small subset of the enrolled patients.

Conclusions: This study demonstrated that rapidly deploying a RPM program for patients with acute COVID-19 infection allowed our health system to safely care for patients in their homes. The program opened hospital beds for more severe and critically ill COVID-19 patients who necessitated more intense monitoring and inpatient care, while simultaneously observing low 30-day all-cause mortality and admission rates.

No, authors do not have interests to disclose