The Impact of a Multidisciplinary Debriefing Protocol After In-hospital Cardiac Arrest on Healthcare Provider Perspectives

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Introduction

The 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care recommend that "*it is reasonable for in-hospital systems of care to implement performance-focused debriefing of rescuers after in-hospital cardiac arrest in both adults and children* (Class IIa, LOE C-LD)." [1]

Our institution recently implemented a protocol to guide multidisciplinary debriefing sessions after each in-hospital cardiac arrest (code blue) or emergency response team activation (ERT). The protocol helps providers assess key interpersonal and technical aspects of the resuscitation effort, focusing on systemic issues that can be improved.

We hypothesized that healthcare providers who participate in debriefing sessions guided by the protocol will experience improved communication, teamwork, and confidence when engaging in subsequent code blues/ERTs. [2,3]

Methods

- An anonymous survey was distributed to University Hospital employees who participate in code blue/ERTs assessing their experience and perspectives on resuscitation events.
- The survey assessed provider experience with post-code blue/ERT debriefing sessions.
- Participants were divided into those who participated in at least one debriefing session and those who did not.
- Primary outcomes were provider-reported teamwork, communication, and confidence in participating during code blue/ERTs.
- Secondary outcomes were provider-reported confidence in leading resuscitative efforts and knowledge of ACLS protocols, as well as provider-reported belief that his or her role is important to the success of the code blue/ERT response.
- Confidence, teamwork, and communication were quantified using a Likert scale ranging from 1-5, where 1 represented absolute lack of the attribute and 5 represented ideal degree of the attribute.

Results

Table 1. Provider characteristics and experience

	Overall	Participated in debriefing	Did not participate in debriefing	*p*
	n = 94	n = 54	n = 40	
Female gender	55 (59.8)	32 (60.4)	23 (59.0)	>0.99
Race/ethnicity				
Asian	45 (48.4)	25 (46.3)	20 (51.3)	
Black non-Hispanic	17 (18.3)	11 (20.4)	6 (15.4)	
Hispanic	9 (9.7)	5 (9.3)	4 (10.3)	NA
White non-Hispanic	17 (18.3)	10 (18.5)	7 (17.9)	
Other	5 (5.4)	3 (5.6)	2 (5.1)	
Role in hospital				
Attending physician	2 (2.1)	1 (1.9)	1 (2.5)	
Fellow	3 (3.2)	1 (1.9)	2 (5.0)	
Resident	39 (41.5)	25 (46.3)	14 (35.0)	NA
Nurse	38 (40.4)	25 (46.3)	13 (32.5)	
Respiratory therapist	3 (3.2)	1 (1.9)	2 (5.0)	
Other	9 (9.6)	1 (1.9)	8 (20.0)	
Post-graduate year (resident or fellow)*	2.11 (1.03)	2.33 (1.01)	1.71 (0.99)	0.075
Number of codes blue/ERTs in the past year*	6.01 (8.93)	6.37 (5.60)	5.53 (12.13)	0.652
Number of code blue/ERTs as a participant				
As a participant in the ICU*	2.87 (6.38)	2.67 (4.60)	3.15 (8.26)	0.719
As a participant on general wards*	2.84 (3.46)	3.19 (2.47)	2.38 (4.45)	0.264
As a participant in other location*	1.33 (5.94)	1.24 (6.60)	1.45 (5.01)	0.867
Number of code blues/ERTs as a leader				
As a leader in the ICU*	0.71 (3.31)	1.00 (4.29)	0.32 (0.94)	0.331
As a leader on general wards*	0.39 (1.00)	0.56 (1.09)	0.17 (0.81)	0.067
As a leader in other location*	0.30 (2.48)	0.52 (3.27)	0.00 (0.00)	0.320

*** Mean (standard deviation). All other variables are presented as count (percentage)**

Table 2. Multivariable regression for confidence in participating in code blue/ERTs

n = 81

Predictors	Estimates	CI	p
Participation in at least one debriefing session	0.52	0.05 – 0.99	0.031
PGY1	-0.27	-0.98 – 0.44	0.453
Nurse	0.14	-0.38 – 0.66	0.593
Female gender	-0.36	-0.85 – 0.12	0.141
Number of code blue/ERTs experienced in past year (per event)	0.02	0.00 – 0.04	0.012
R^2 / R^2 adjusted	0.182 / 0.128		

Limitations

- Small sample size
- Most providers who completed the survey were residents or nurses
- Other confounding factors may have not been captured in the survey
- Most surveys had at least 1 missing data point
- Serial observations were only available for 3 providers
- Surveys may have been completed inaccurately due to misunderstanding, memory deficit, or misperception of experiences

Figure 1. Provider perception of most recent code blue/ERT stratified by prior debriefing session

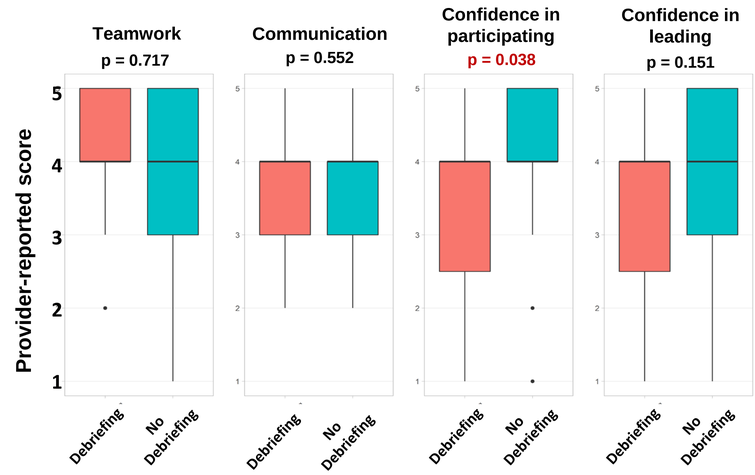
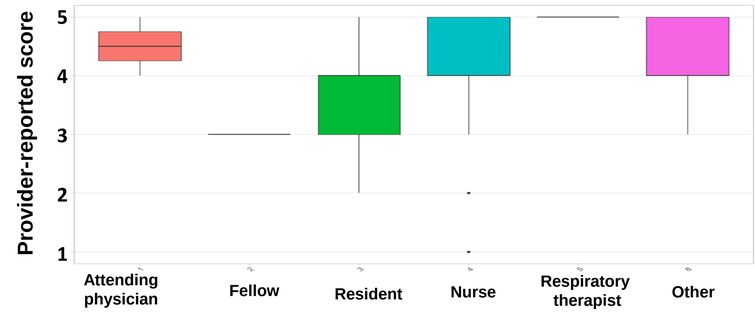


Figure 2. Confidence in participation in code blue/ERT by role in hospital



Conclusions

- In this pilot study, provider-reported confidence in participating in code blue/ERTs was independently associated with history of participation in at least one debriefing session, as well as the number of code blue/ERTs experienced in the past year, and it was not associated with PGY year or role as a nurse
- Additional study is needed to quantify the impact of debriefing on provider experience and skills, as well as in-hospital patient outcomes

References

1. SE Kronick, MC Kurz, S Lin, et al. Systems of Care and Continuous Quality Improvement. 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2015; 132[suppl 2]: S397-S413.

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3. DP Edelson, B Litzinger, V Arora et al. Improving In-Hospital Cardiac Arrest Process and Outcomes With Performance Debriefing. Arch Intern Med. 2008; 168(10):1063-1069.