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The Impact of the Implementation of Code-Blue Nurse Champions for Cardiac Arrest

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BACKGROUND

- The American Heart Association's (AHA) 2020 Impact Goals are to improve the cardiovascular health (CVH) of all Americans by 20%. An estimated 209,000 in hospital cardiac arrests (IHCA) occur each year in the U.S., with a survival rate of 24% (Andersen, Holmberg, Berg, Donnino, & Granfeldt, 2019).
- High-quality CPR is critical for survival from cardiac arrest.

PURPOSE

Does the implementation of a code-blue nurse champion role, as a cardiac arrest first responder, improve nursing self-efficacy to initiate cardiac resuscitation and survival of IHCA patients when compared to current practice among adult medical surgical patients in an acute care hospital in California over four-weeks?

METHODS

Quantitative quasi-experimental one-group pre and post education to assess the outcome effectiveness of the implementation of code blue nurse champions utilizing IHI rapid response education and cardiac arrest in situ simulation.

A sample of 18 RNs were trained as code blue nurse champions. The valid and reliable instrument used for this quality improvement project is the Knowledge and Attitude of Nurses in the Event of a Cardiorespiratory Arrest (CAEPCR) questionnaire (Tiscar-Gonzalez et al., 2019).

REFERENCES

1. Provided upon request

RESULTS AND OUTCOMES

Paired Samples t-test for Knowledge Total Score Results

Variable	Pre *M*	Pre *SD*	Post *M*	Post *SD*	*t*	*p*	*d*
Knowledge Total Score	8.67	1.41	9.00	1.37	-1.84	.959	0.43

Note. N = 18. Degrees of Freedom for the *t*-statistic = 17. *d* represents Cohen's *d*.

Spearman Correlation Results between Pre-Attitude Total Score, Post-Attitude Total Score, and Pre-Knowledge Total Score and Post-Knowledge Total Score.

Combination	r_s	95% CI	*p*
Pre- Attitude Total Score-Post-Attitude Total Score	0.60	[0.18, 0.83]	.009
Pre-Knowledge Total Score-Post-Knowledge Total Score	0.77	[0.48, 0.91]	< .001

Note. *n* = 18.

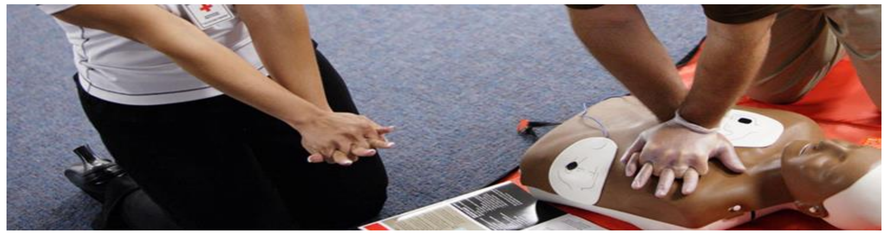
Chi-square association between pre- and post-implementation of code blue nurse champion role and activation of RRT.

Timepoint	RRT	No-RRT	Chi-Square test value	*p*-value
Pre-Code Blue	20 (62.5%)	127 (47%)	2.74	.098
Post-Code Blue	12 (37.5%)	143 (53%)		

Fisher Exact Test comparing pre- and post-intervention survival of IHCA.

Timepoint	Survived	Deceased	Total	*p*-value
Pre-Intervention	1 (50%)	1 (50%)	2	.667
Post-Intervention	1 (100%)	0 (0%)	1	

Note. '*' indicates the exact probability that results are significant at *p* value < .05.



DISCUSSION & CONCLUSION

- There was no statistically significant difference in the Pre- and Post-Knowledge and Attitude sections as shown in the data, although pre and post knowledge measures were correlated.
- There were proportionally less RRT activations post-intervention which was a non-significant finding.
- Data indicated a non-significant improvement in IHCA survival (p = 0.667).
  - Pre- implementation, survival for patients with IHCA was 50% (M = 1.50) and post-implementation, survival of patients with IHCA was 100%(M = 1.00).
- Conclusion: While statistical significance in IHCA survival was detected, a clinical significance emerged.

IMPLICATIONS FOR PRACTICE

Clinical significance demonstrated by the single change in percentage of survival of IHCA; a single life saved is a measure of success. Observations from the participants, during the rapid response education and cardiac arrest in-situ simulation, reflect positively on this innovative program. Additional projects are needed regarding self-confidence of medical–surgical nurses' responding to deteriorating patient conditions. Refinement on the current project would include providing education and cardiac arrest in-situ simulation to all RN staff within a department, not just a sample of nurses. Measure the sense of community; a recommendation for a future study is to measure the effect of code blue nurse champion roles with a sense of community in a single nursing department.

LIMITATIONS

The CAEPCR instrument knowledge questions were based on the European Resuscitation Council (ERC) 2010 guidelines for CPR; Small sample size: Participants (*N*=18) and IHCA events (*N*=3); Short timeframe: 4 weeks