

Effect of integrating the CPR Coach role in Pediatric Intensive Care Units Resuscitations

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INTRODUCTION

- In-hospital pediatric cardiac arrests affect approximately 5,000 to 10,000 children per year in the United States (Sutton et al., 2017).
- Survival rates in the pediatric population is <50%
- Studies show that compliance to AHA guidelines for high quality CPR are not consistently for in-hospital arrests in pediatrics
- Evidence shows that the addition of a CPR coach role in resuscitations improves adherence to AHA guidelines.

Problem

- Following AHA guidelines optimizes chances of survival in cardiac arrests
- Several studies show a lack of adherence to these guidelines for in hospital pediatric arrests
- There is no practice in place to monitor adherence to guidelines at this institution
- There is no role in place at this institution to oversee adherence to guidelines during resuscitation
- A needs assessment conducted from January – March 2020
 - This showed that recommended equipment is inconsistently met, compressors are switched out inconsistently, and that the number of pauses are not clear
- The CPR coach role developed to oversee adherence to AHA guidelines.

Aims

- Measure adherence to the AHA guidelines for pediatric resuscitation in the PICU and PCICU after establishing a CPR coach role
- Analyze resuscitation data to evaluate the impact the CPR coach role has made on adherence to AHA guidelines

Objectives

- Evaluate and compare results from surveys for resuscitations with a CPR coach and without a CPR coach over nine-months to compare adherence to AHA guidelines.
- Audit charts to compare patient's vital signs during resuscitations with and without a CPR coach over nine-months.
- Analyze the data collected to form meaningful conclusions on the outcomes associated with incorporating a CPR coach in resuscitations within the PICU and PCICU.
- Provide data analysis to the Division of Critical Care stakeholders.
- Develop practice recommendation regarding the CPR coach role and determine if permanent adoption of the role is appropriate for practice improvement.

METHODS

Plan

- Retrospective analysis of CPR events to evaluate the effectiveness of integrating the CPR coach role in resuscitations in the PICU and PCICU.
- Conducted based off surveys and chart audits; 20 surveys in total

Do

- Data collected and organized within a Microsoft Excel spread sheet.
- Sheets included: presence of a step stool, backboard, and defibrillator pads on patient (obtained from survey), if compressors switched every two minutes (obtained from survey), End diastolic blood pressure and ETCO2 (obtained from chart audit)

Study

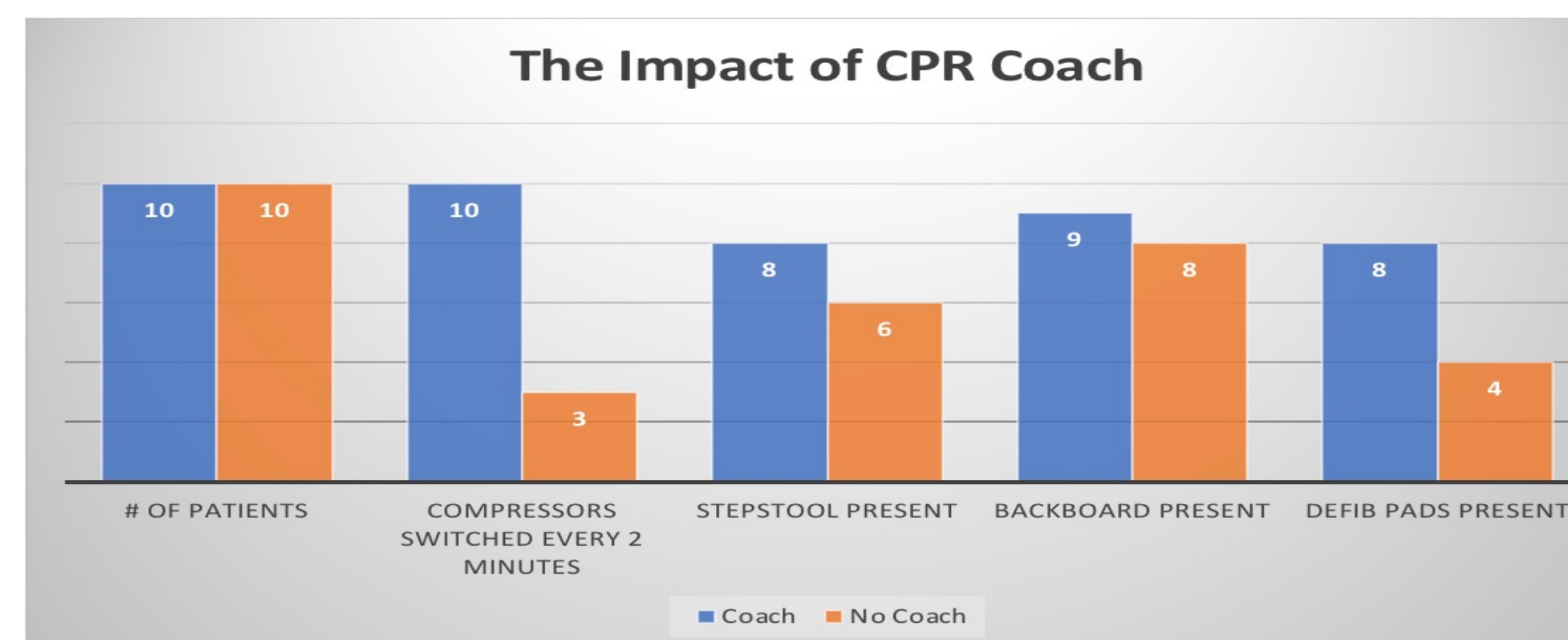
- Data was organized into CPR coach data and No CPR coach data
- All categorical data was then calculated into percentages to provide more meaningful conclusions with comparisons for resuscitations with a CPR coach and resuscitations without a CPR coach.
- A Chi-squared test and effect size was conducted on presence of a step stool, backboard, or defibrillator pads and if compressors were switched every two minutes

Act

- Adopt the CPR coach role as a mandatory role in both the PICU and the PCICU permanently and present the role for adoption hospital wide.
- Adapt the CPR coach role, making improvements based on the results of the data analysis, with further research conducted to determine if role should be adopted
- Abandon the CPR coach role in resuscitations in the PICU and PCICU

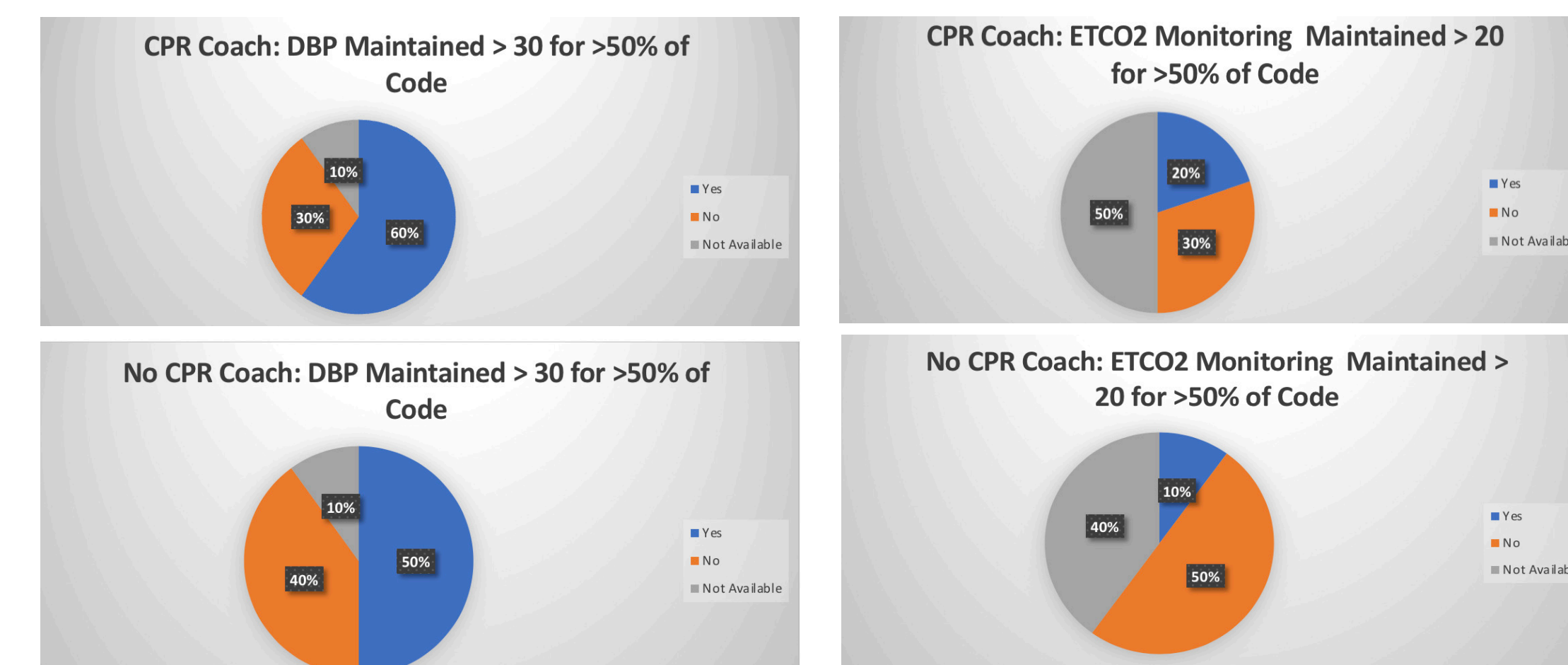
RESULTS

	Compressors switched every 2 minutes	Step stool present	Backboard present	Defibrillator pads on patient
Chi square	7.912	0.238	0.392	1.875
p-value	0.0049	0.6256	0.5312	0.1709
Statistically significant?	Statistically significant	Not statistically significant	Not statistically significant	Not statistically significant
Effect size	0.629 (large effect)	0.1091 (small effect)	0.14 (small effect)	0.3062 (moderate effect)



RESULTS

	CPR Coach Present	No CPR Coach Present
Compressors switched every 2 minutes	10(100%)	3(30%)
Step stool present	8(80%)	6(60%)
Back board present	9(90%)	8(80%)
Defibrillator pads on patient	8(80%)	4(40%)



IMPLICATIONS FOR PRACTICE

- All data points analyzed showed an improvement in resuscitations that had a CPR coach present, with an increased adherence to AHA guidelines and recommendations.
- Study has shown that the CPR coach role has an impact on adherence to AHA guidelines in resuscitations within the PICU and PCICU. More data is needed to be able to determine if the role should be formally adopted.
- Recommendation to reeducate staff on appropriate vital sign documentation in codes to improve future data collection and present data to staff members to emphasize the possible impact of CPR coach role to improve frequency of role usage.

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