

Background

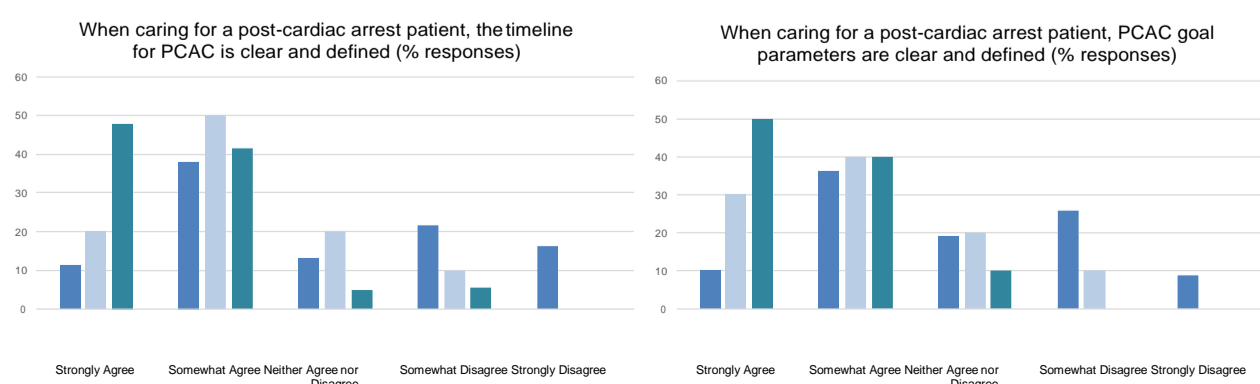
- Cardiopulmonary resuscitation (CPR) is performed in 15,000 hospitalized pediatric patients in the USA annually
- 7,000 children achieve return of spontaneous circulation (ROSC), 85% will develop **post-cardiac arrest syndrome (PCAS)**
 - Brain and myocardial dysfunction
 - Systemic ischemia/reperfusion
 - Secondary injury from precipitating pathophysiology
- The American Heart Association (AHA) endorses post-cardiac arrest care (PCAC) interventions to mitigate PCAS and improve long-term neurological and general outcomes

Purpose

- Purpose: to improve compliance of AHA PCAC guidelines in a 40-bed pediatric intensive care unit (PICU)
- Evidence-based PCAC guidelines emphasize avoidance of hyperthermia, hyper/hypoxemia, hyper/hypocarbica, and hypotension in 72-96 hours following ROSC
- Goal: to reduce incidence of post-cardiac arrest hyperthermia and hyperoxemia to zero percent

Development

- PCAC order set was introduced to the PICU in 2015 following publication of AHA guidelines, compliance remained poor
- Staff cultural assessment demonstrated a significant difference in perception of PCAC timeline and parameters among disciplines
- Results indicated a need for a central location to track PCAC goals following cardiac arrest



Methods

Structure Measures: Presence of order set in Epic, number of staff oriented to checklist

Process Measures: Checklist present, maintenance for full 96 hours, inclusion of goals in rounds

Outcome Measures: Arterial blood gases and core temperatures per standard unit protocol

Strategies & tactics: Education by a team of change champions, weekly updates, CPR journal club

Post-Cardiac Arrest Care Checklist

Date and Time of ROSC: _____
Date and Time of PCAC completion: _____

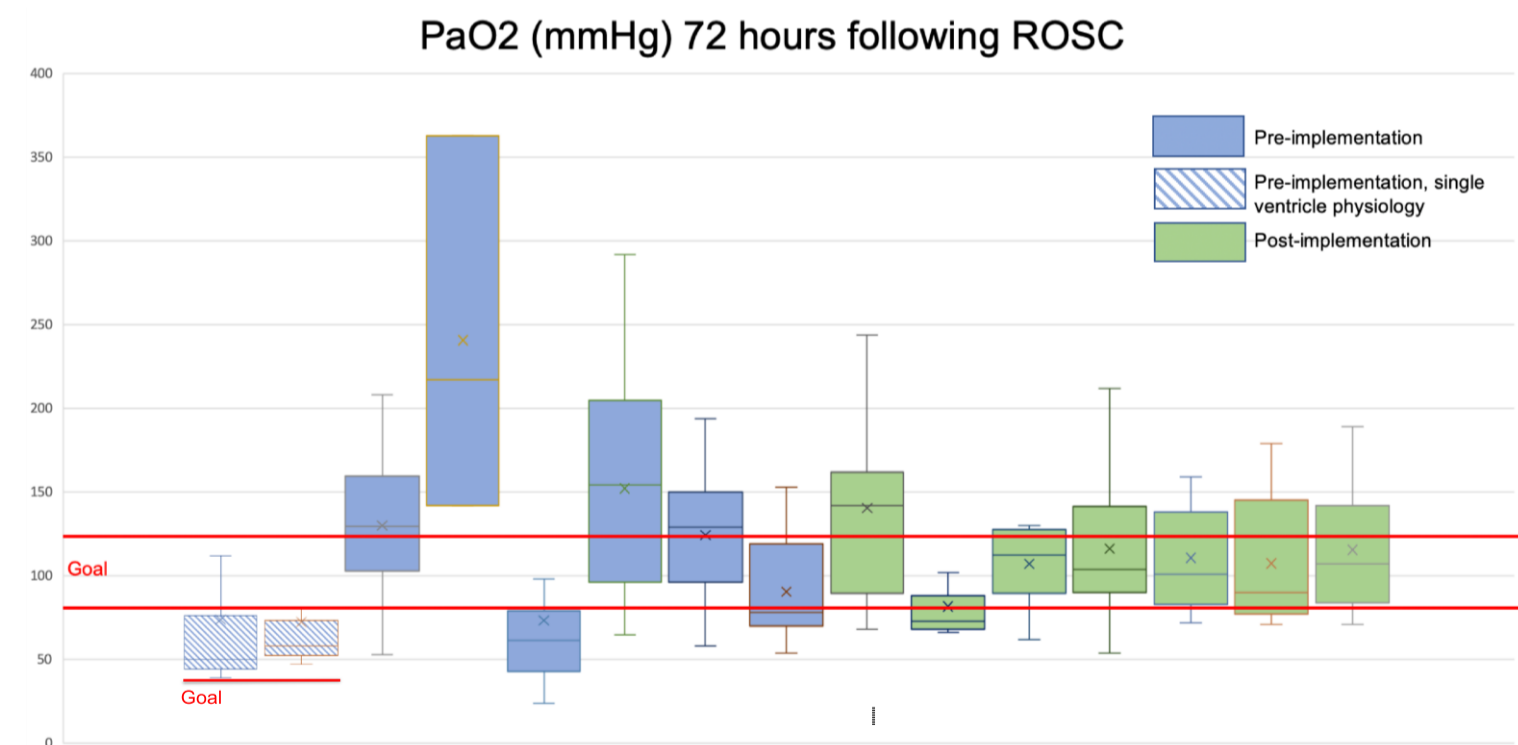
Hours	Target Ranges						Discussed in rounds?	PCAC order set in EPIC?
	Temperature	SPO2	SBP	MAP	PaO ₂	PaCO ₂		
Hours 0-24							Y/N	Y/N
Hours 24-48							Y/N	Y/N
Hours 48-72							Y/N	Y/N
Hours 72-96							Y/N	Y/N

Minimum BP Goals (5th percentile)

Age	MAP	SBP
<6 months	>45	>70
6mo-1yrs	>55	>80
1yrs-10 yrs	>65	>90
>10 years	>75	>100

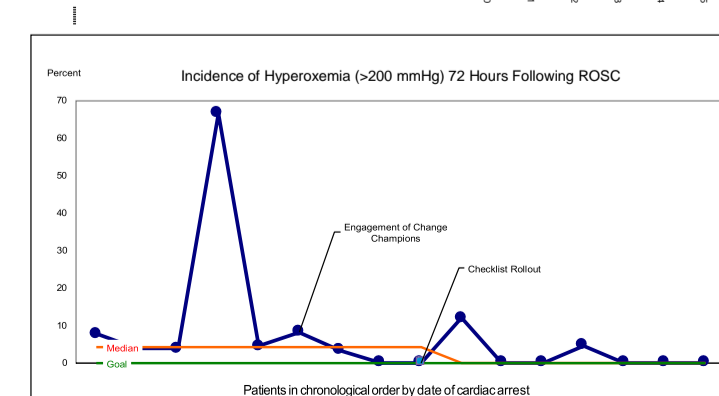
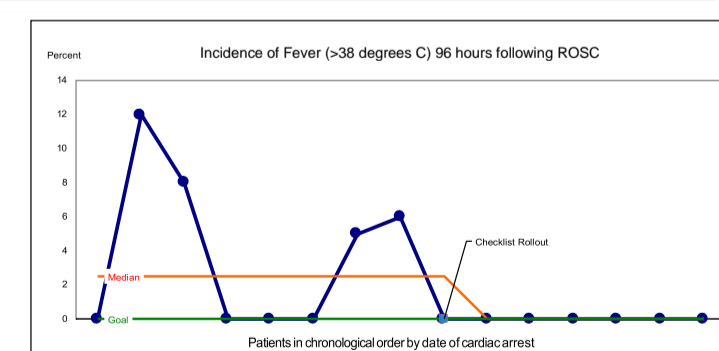
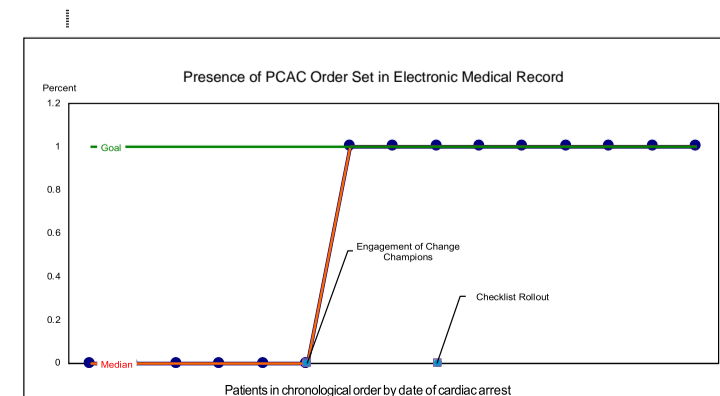
Scan for PCAC Fast Facts

Results



Patient Cohorts:

- Pre-implementation (n=8)
- Post-implementation (n=7)



Discussion

This is a novel checklist developed from AHA guidelines

Limitations:

- Small patient population, multiple outliers
- Competing projects in the PICU
- Risk of observation bias
- Group education limitations due to COVID-19 pandemic

Recommendations for Replicating:

- Standardize PCAC education for new staff
- Provide real-time feedback to checklist users
- Shift ownership of checklist education and maintenance to established workgroup

Conclusions

- The use of a bedside checklist improves compliance to PCAC guidelines and may improve long-term neurological and general patient outcomes
- Future QI projects may explore efficacy of checklist on other PCAC parameters, long-term adherence
- Education and ongoing multidisciplinary cooperation essential to ensure long-term culture change and sustainability

References

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Acknowledgments

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