

The First 5-Minutes: The Foundational Timeline During Cardiac Arrest



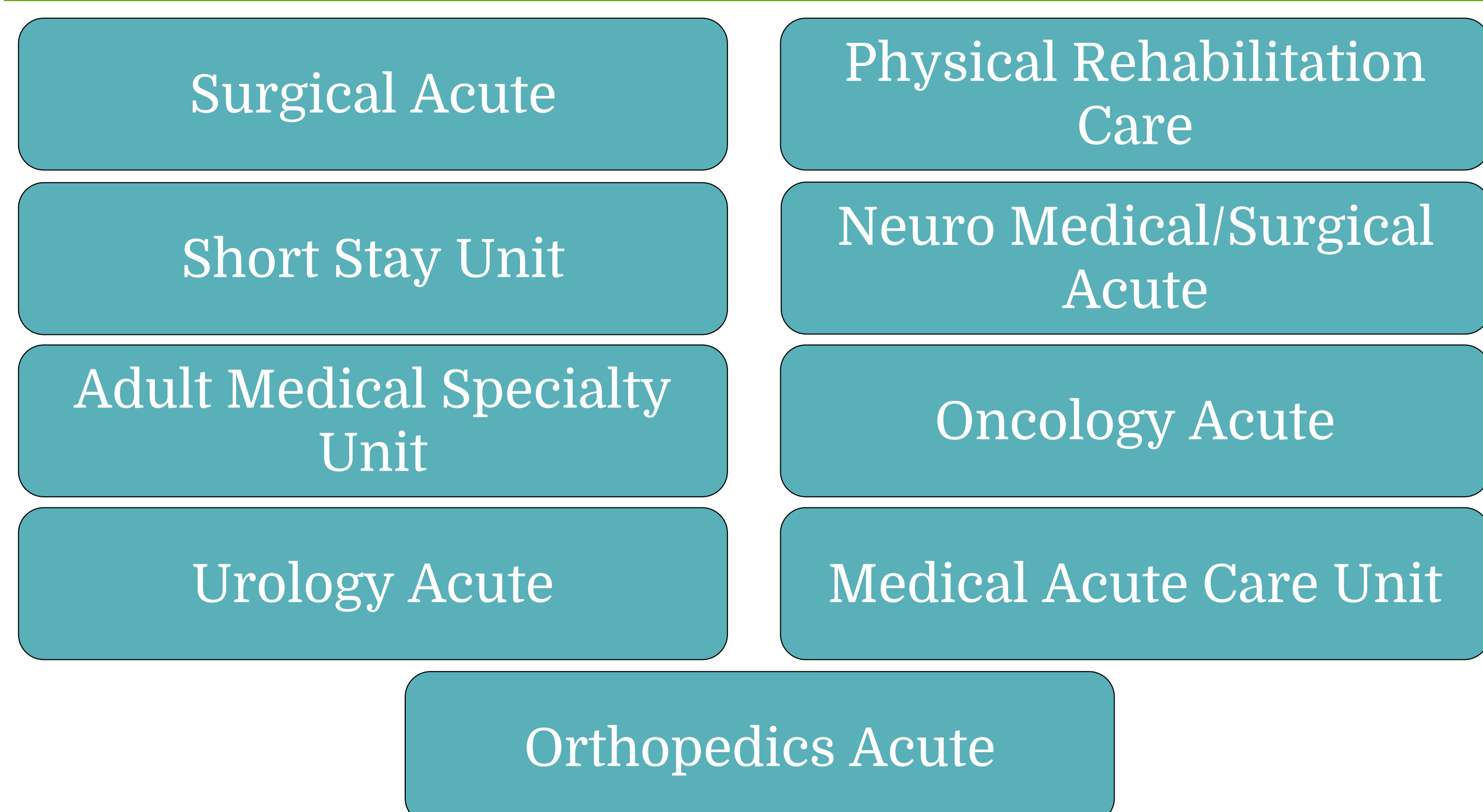
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Background

At OSF HealthCare Saint Francis Medical Center, the Medical Surgical division has implemented a division wide mandatory education day since 2014. This allows us to bring together nine unique Medical Surgical floors and work as a division to collaborate in education and build teamwork. In 2018 we implemented a "First 5-Minutes" skills station. This station focused on the Basic Life Support (BLS) skills needed to improve outcomes in cardiac arrests situations. As these situations are high risk, low volume events in the division, the feedback from the nurses was that this station was an overwhelming favorite and helped them grow in skills and confidence.

Departments Involved



Planning

In planning for the education days, there were many things to take in to consideration. First, was recognizing that this education was supplemental to their already completed BLS certification class and determining what baseline educational/skills gaps needed to be reviewed. Next, was to determine who needed to be involved and finding the local experts. The OSF SFMC Resuscitation Committee utilizes the American Heart Association (AHA) "Get with the Guidelines" Cardiopulmonary Arrest (CPA) criteria when collecting data to assess strengths, opportunities and post-cardiac arrest outcomes. A needs assessment was performed by subject matter experts and data was collected from the following: CPR Committee data, in situ code blue simulations and data pulled from defibrillators (Table 1).

A train the trainer method was used in which a Resuscitator facilitated a Rapid Cycle Deliberate Practice (RCDP) skills session with the unit educators in order to maintain standardization, consistency and quality (Figure 1). The First 5-minutes was chosen as the research has shown that High-Quality CPR and early defibrillation with minimal interruptions increases post-cardiac arrest survival to discharge rates (Table 2).

Methods

Why the First 5-Minutes?	
Cardiac Arrest survival rates decrease by 30% when compressions rates are not between 100-120	60% of in-hospital cardiac arrests are PEA/Asystole (non-shockable). High-Quality CPR, Epinephrine and revering the H's & T's is what will improve outcomes
Cardiac Arrest survival rates decrease by 10% for every minute there is a delay in compressions & defibrillation	Reducing pre-/post- shock pauses decreases the risk of refractory Ventricular Fibrillation
Cardiac Arrest survival rates decrease by 30% when compression depth is less than 2 inches	High Reliable Organizations focus on team dynamics, role delineation & Closed-Loop communication

(Table 2)

Needs Assessment & Gaps Identified	
Compression/Ventilation ratio of 30:2 not being performed during bag-mask ventilation	Pre-/post- shock pauses greater than 5 seconds
"Death by Hyperventilation" caused when breaths are given every 3-4 seconds instead of the recommended every 5-6 seconds	Lack of providing feedback on High-Quality CPR during the entire cardiac arrest
Delay in initiating CPR due to placing backboard, head of bed down, side rails down, removing gown and placing defibrillator pads	Lack of role delineation until the code team arrives
Pulse check after defibrillation	Delay in defibrillation related to placing 3-lead electrodes along with defibrillator pads

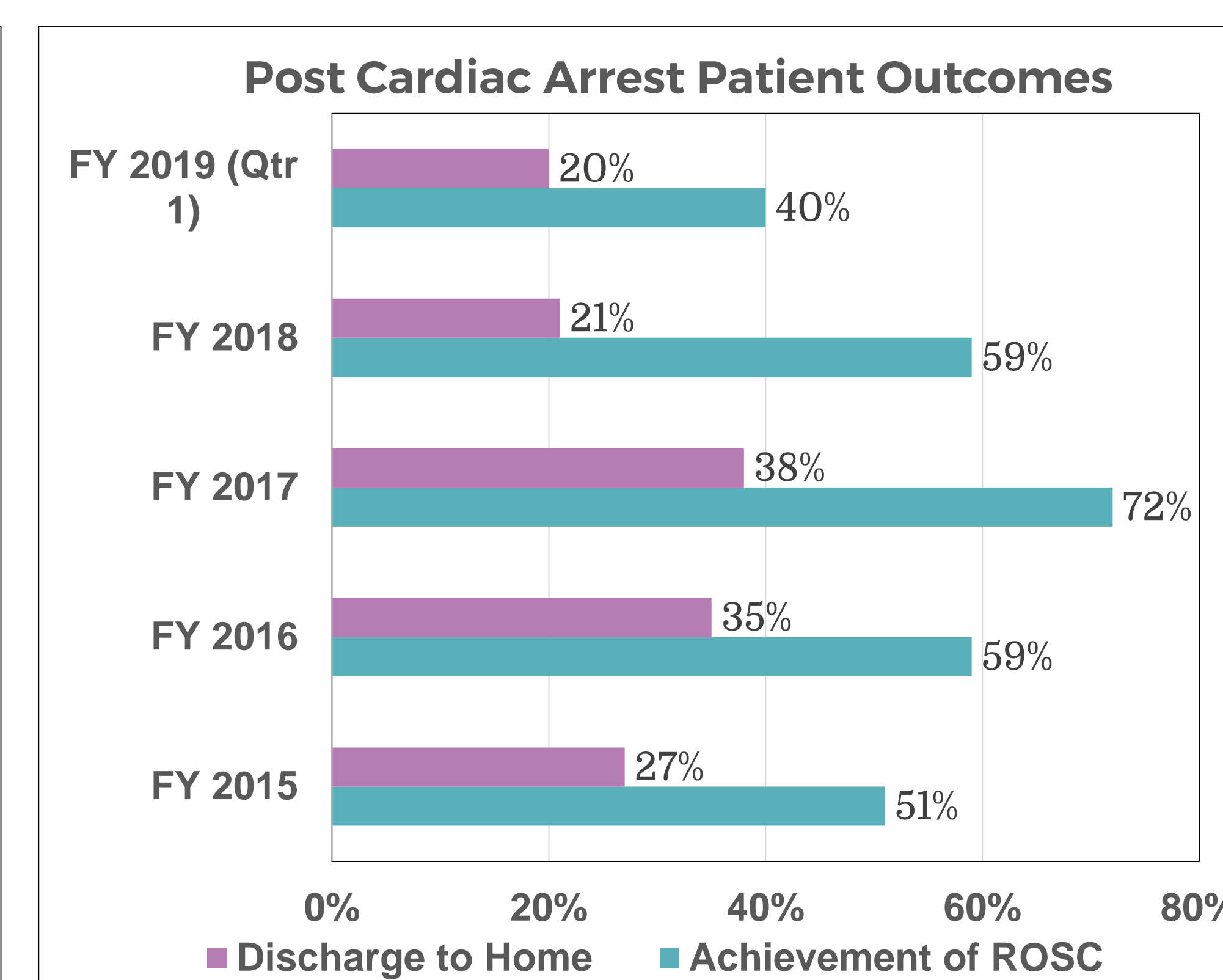
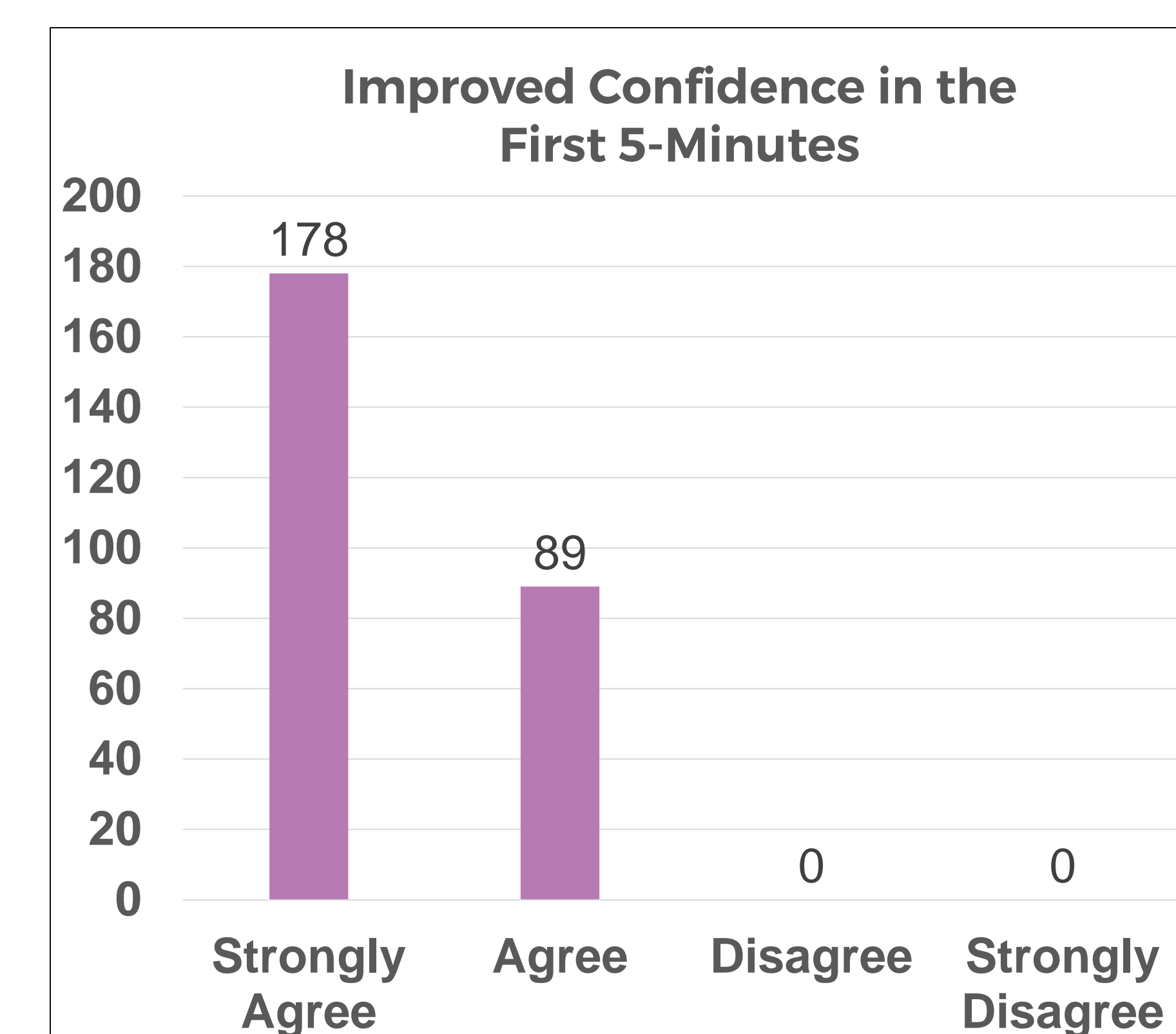
(Table 1)

Rapid Cycle Deliberate Practice (RCDP)



(Figure 1)

Results



Evaluation Comments
"I think the best was the code blue situation. Thorough and the start/stop method of teaching was effective."
"I love the code blue sim and crash cart explanation."
"Liked stopping frequently throughout the code and assessing at those times."
"The content was relevant. I liked the code portion. No pressure, just practice."

Next Steps

- ❖ Continue as an annual RCDP skills session
- ❖ Continue data collection to assess the Return on Investment (ROI)
- ❖ Analyze the data being collected to assess if BLS certification means competency in BLS

Acknowledgements

Gina Antonini, BSN, RN, CMSRN
Jennifer Doty, BSN, RN
Iulia Ghiorghias, MSN, RN, CMSRN
Rachel Horton, BSN, RN, CRRN
Monica Kinsey, MSN, RN, CMSRN
Rebecca Lawcock, BSN, RN, CNRN
Tiffany Lawson RN
Jennifer, Seils, BSN, RN
Hannah Tomblin, BSN, CMSRN
Misty Williams, BSN, RN

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