

Enhancing Clinician Adherence to Cardiac Surgical Unit-Advanced Life Support Protocols

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Background

- Cardiac arrests following cardiac surgery represent a low-frequency, high-risk emergency prompting well-practiced resuscitation protocols.
- Cardiac Surgical Unit-Advanced Life Support (CSU-ALS) is a guideline-based protocol designed to address the unique resuscitation needs of cardiac surgery patients.
- Certification classes in CSU-ALS are only required every two years, limiting exposure in the tailored emergency response.

Significance & Purpose

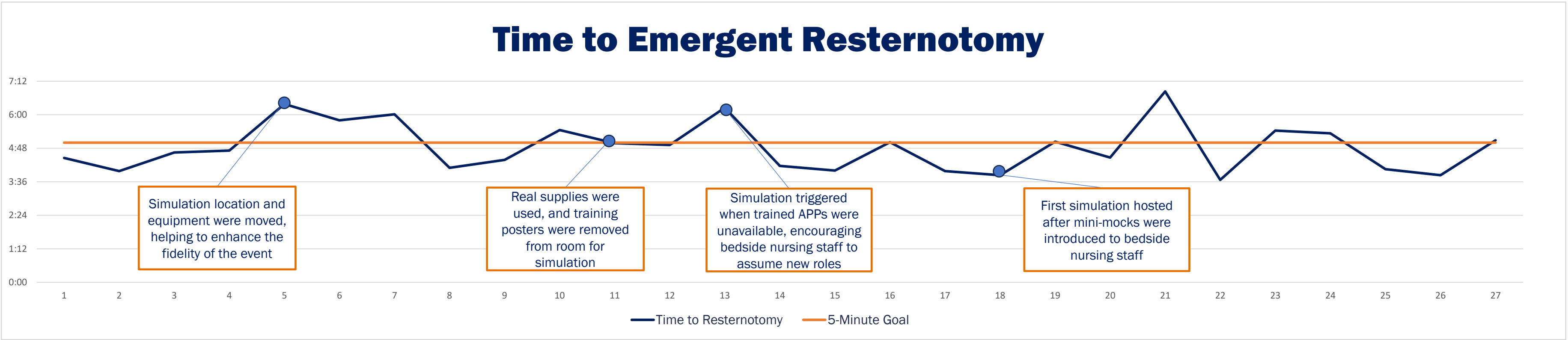
Through sporadic mock-codes and true emergency responses, clinicians receive variable exposure with the CSU-ALS protocol. More frequent, tailored training activities will improve exposure and knowledge saturation across team members to achieve optimal team performance and patient outcomes in cardiac arrest following cardiac surgery.

Methods

Implementation of “mini-mocks,” a marriage between conventional classroom-based training on CSU-ALS and in-situ simulation. Mini-mocks are hosted with individuals and small groups within the cardiothoracic intensive care unit at a large academic medical center to capture more staff in hands-on CSU-ALS training. Smaller sessions mimic conventional mock-codes but also facilitate real-time assessment of clinician competency, protocol practice, and performance feedback. Overall impact of mini-mock intervention on clinician performance against CSU-ALS protocol is then measured through full-scale simulation events using standardized observation, assessment, and team debrief.

Implementation & Results

- Increased frequency of in-situ simulations
- Competency verification record (CVR) format leveraged to develop “mini-mock” evaluation template and script
- “Mini-mock” intervention launched September 2024



Implementation & Results Continued

- Average time to emergent resternotomy: 4:50
- Of the 12 outcomes measured, eight (67%) were compliant with the protocol in at least 75% of simulated events
- 69 of 76 eligible ICU RNs (91%) completed “mini-mock” intervention, exceeding original goal of 85%
- Anecdotal feedback from attending surgeons, simulation and mini-mock participants is positive, encouraging
- Standardized simulation performance evaluation and debriefing structure now broadly used

CSU-ALS Assessment Simulation Timing & Evaluation

Date & Time: _____

Algorithm Triggered: _____

Trainer(s): _____

Participants: _____

Time to re-sternotomy (retractors in): _____

Time to delivery of third shock, if applicable: _____

- Time to transcutaneous pacing, if applicable: _____

Evaluation Items (Check Yes/No/NA):

Evaluation Item	YES	NO	N/A
Was a TEAM LEADER identified?			
Did someone escalate (call for Open Chest)?			
Was the correct rhythm/algorithm used?			
Were all active infusions stopped?			
Did the team initiate (external) CPR?			
Was the BVM used?			
Was amiodarone administered?			
Did the sterile providers initiate internal cardiac massage?			
Did the sterile providers provide internal defibrillations?			
Was the suction set up/functional?			
Were sterile supplies opened/available for sterile providers?			

CSU-ALS Assessment Simulation Timing & Evaluation

Performance Strengths
“What went well?”

Development Objectives
“What could have gone better?”

ADDITIONAL COMMENTS & THOUGHTS:

Discussion

- The data is variable and does not present a clear pre- and post-implementation measure of protocol compliance, in part because the method for data collection (simulation) was also a form of intervention.
- Protocol compliance noted at 67% reflects that staff are now compliant most of the time with protocol elements but suggests the need for long-term investment in continued performance improvement and sustainability.
- High participation in mini-mocks (91%) reflects both an investment on the part of CSU-ALS trainers, but also an appetite from nursing staff to engage with the content and review core protocol measures.
- To successfully promote emergency protocol adherence, we must maintain consistency through a multi-modal approach to training, integrating traditional, lecture-based education with simulation-based learning.

Contact Information

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Reference List

Please scan the QR code to review the complete reference list and guideline documents on CSU-ALS.

