TERESA WEISNECK BSN, RN, CCRN-CSC-CMC
DNP Chair Dr. Mary DiGiulio
DNP Co-Chair Dr. Michael Cane

RUTGERS
School of Nursing

Background & Significance

- Patient who are post-operative cardiac surgery requiring cardiopulmonary resuscitation do not receive the same BLS and ACLS protocols instead they receive a form of ASU-ALS which is recommended by the Society of Thoracic Surgeons (STS) this algorithm includes patients undergo an emergent re-sternotomy in the setting of cardiac tamponade.
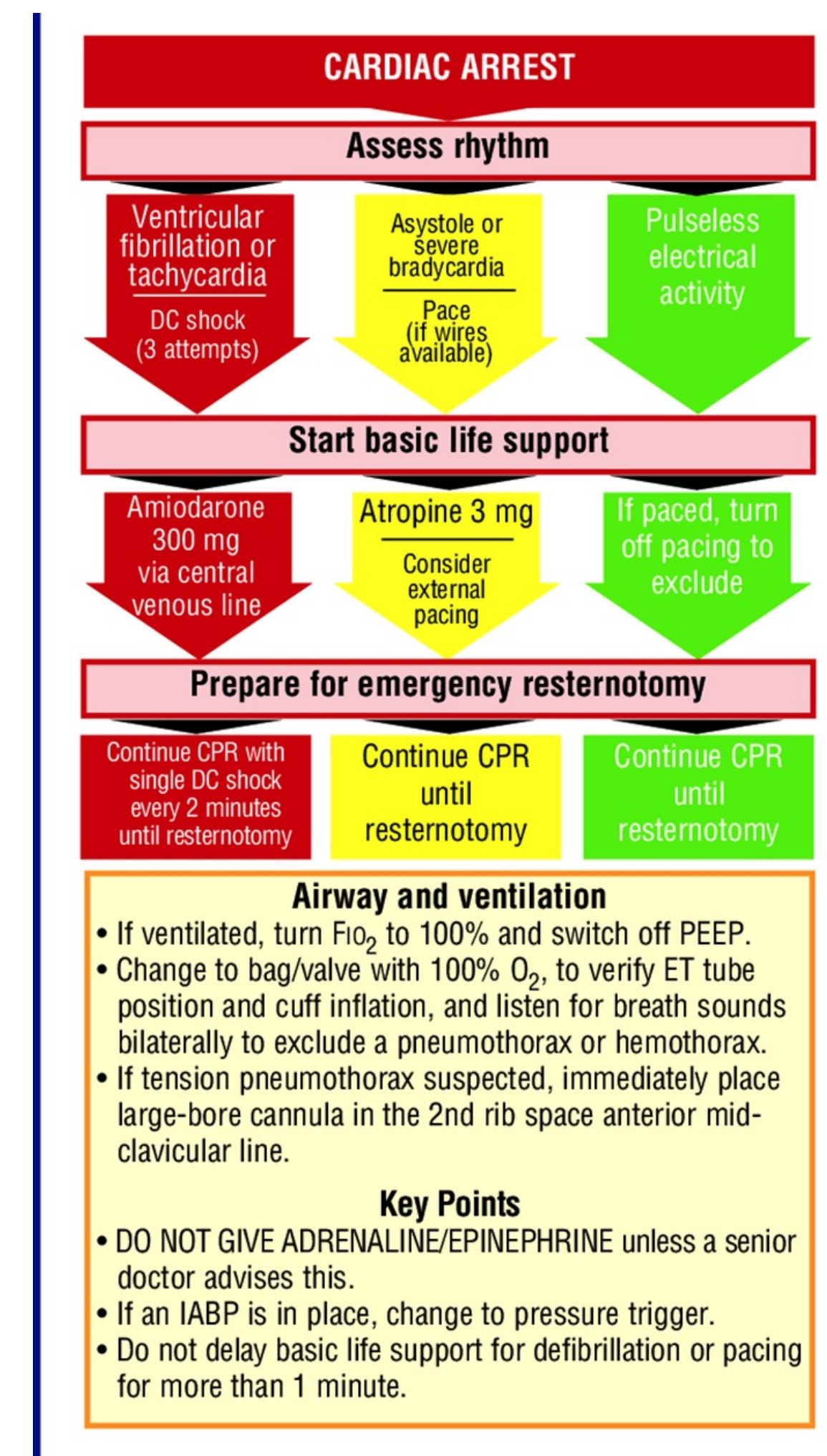
Objectives

Initiate preparing the patient for an emergent sternal re-entry and gain chest re-entry within 5 minutes

- Will simulation-based learning in the form of mock open chest codes with debriefing improve time to emergent chest re-entry in the cardiac surgery population
- Will debriefing after a mock open chest code be a useful tool in simulation-based learning?

Theoretical Framework
NLN Jeffries Simulation Theory
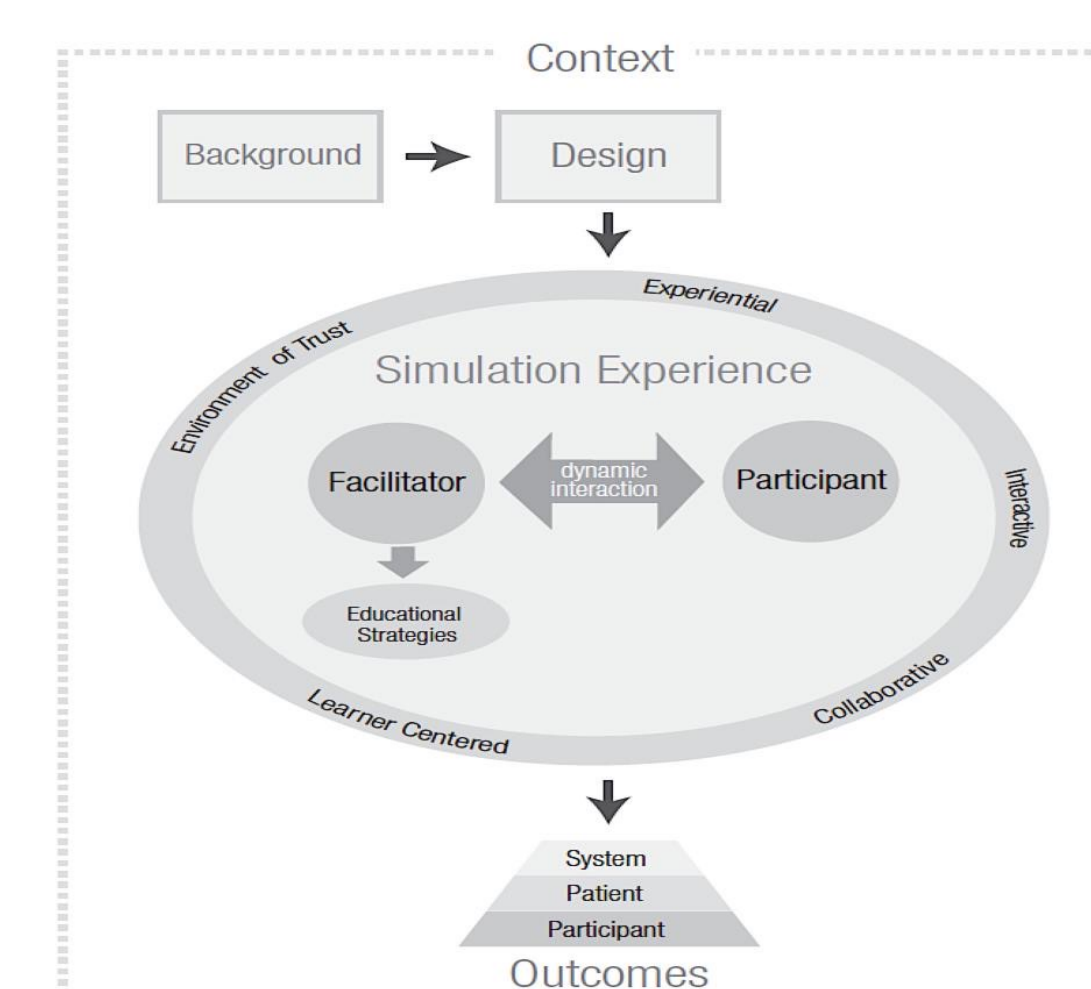
Methodology

- Method- development, implementation, and evaluation of a mock code involving sternal re-entry in the cardiac surgery unit with a debriefing

- Population- 10 nightshift Surgical ICU nurses who tend to immediate post operative cardiac surgery patients

- Setting- Acute Care Facility located in Southern New Jersey

- Developmental phase consisted of developing a mock "open" chest code based of the current policy at the facility and building a manikin to use for the simulation

- Implementation took place over approximately three consecutive weekend nightshifts which consisted of mock "open" chest codes with simulation-based technology, a debriefing between the pre/post mock "open" chest code, and a post debriefing survey

- Evaluation of the debriefing effectiveness was an anonymous survey which was handed into after the debriefing, pre/post mock "open" chest code times were recorded and analyzed to measure if there was a change in time before and after the debriefing

- Outcomes were measured between groups with pre/post test times

Results

- There was no increase in times for any milestone for any group.

- The average decrease in time to chest re-entry was 129.7 ± 79.2 seconds. Due to the small sample size the results are limited.

Time in seconds	Group 1			Group 2			Group 3		
	Before	After	Decrease	Before	After	Decrease	Before	After	Decrease
Time to get open chest cart	44	40	4	92	60	32	68	22	46
Time to sterile gown	236	92	144	144	110	34	143	88	55
Time to sterile drape	326	216	110	207	126	81	205	137	68
Time to sterile suction	438	236	202	270	179	91	235	166	69
Time to scalpel in hand	443	238	205	251	186	65	236	154	82
Time to chest re-entry	482	262	220	307	210	97	257	185	72

- All times were decreased after the debriefing sessions

Average Times Before and After Debrief
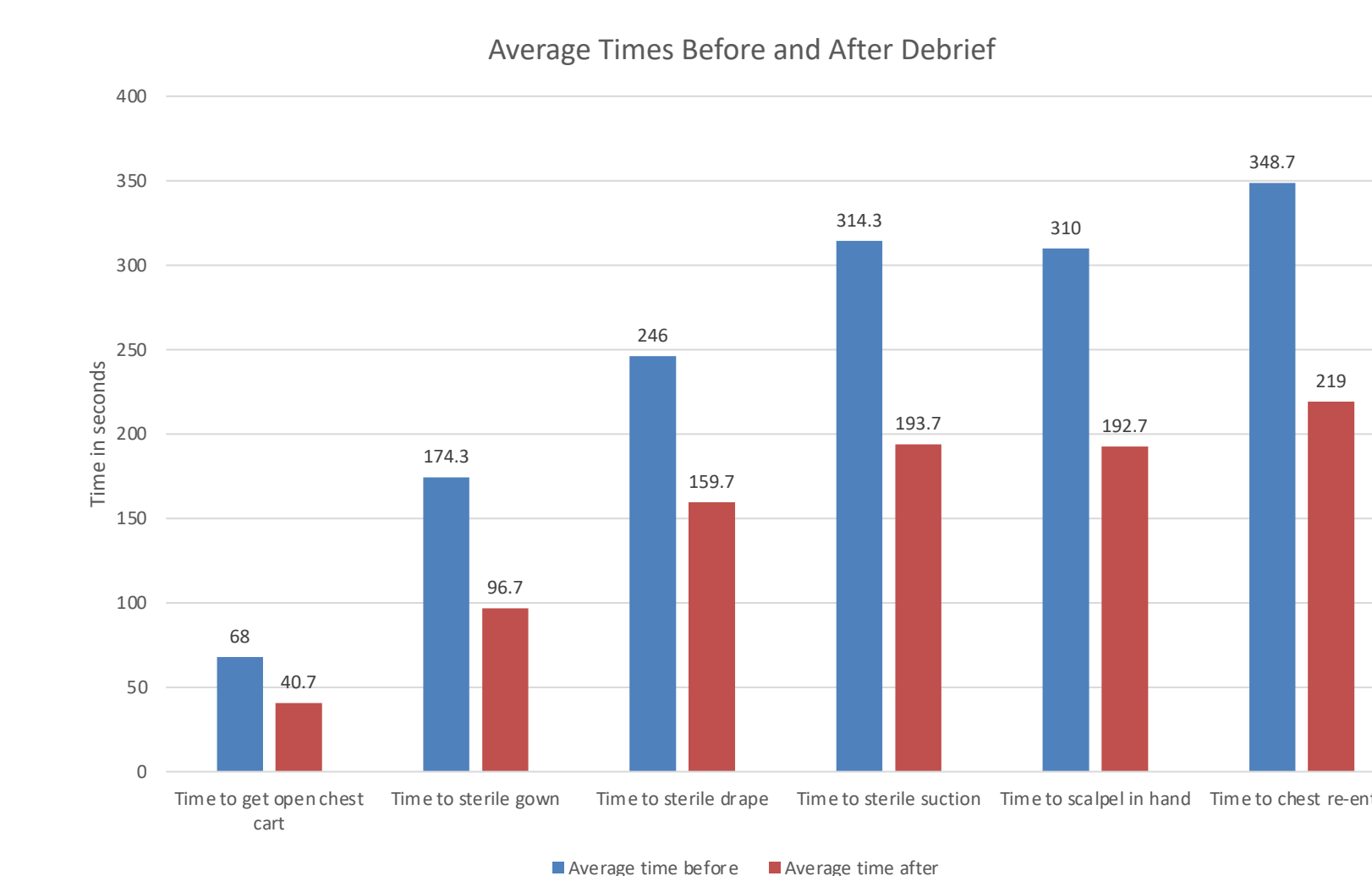
Table. Average times (seconds)			
	Average time before	Average time after	Average time decrease
Time to get open chest cart	68.0 ± 24.0	40.7 ± 19.0	27.3 ± 21.4
Time to sterile gown	174.3 ± 53.4	96.7 ± 11.7	77.7 ± 58.4
Time to sterile drape	246.0 ± 69.3	159.7 ± 49.1	86.3 ± 21.5
Time to sterile suction	314.3 ± 108.5	193.7 ± 37.2	120.7 ± 71.3
Time to scalpel in hand	310.0 ± 115.4	192.7 ± 42.4	117.3 ± 76.4
Time to chest re-entry	348.7 ± 118.1	219.0 ± 39.3	129.7 ± 79.2

Limitations

- Small sample size
- Time constraints

Facilitating Factors

- Facilitating factors of my project included the willingness of the staff to participate

Conclusion

Utilization of simulation-based technology in the form of mock "open" chest codes improved efficiency in chest re-entry. This was a pilot project and a larger sample size would be recommended for further study.

References

Contact Information

Teresa Weisneck BSN, RN, CCRN-CSC-CMC
taw129@sn.Rutgers.edu
Dr. Mary DiGiulio, DNP, APN, FAANP
mary.digiulio@rutgers.edu