Code Blue: In-Situ Near You

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Clinical Question

In the inpatient cardiology setting, does in-situ simulation based training for emergency situations impact staff confidence and skill in responding to actual patient emergencies?

Timeline

- **11/13/19:** 1st meeting with two Emergency Response Nurses, Chief Resident, and Director of Emergency Response
- **December 2019:** Literature Review
- **1/9/20 & 1/10/20:** Bridget attended the Interprofessional Faculty Development in Simulation course at the Clinical Simulation Laboratory at the University of Vermont
- **1/27/20:** 1st meeting of Miller 4 Staff Taskforce created using our NPG structure. This team was compiled of 8 nurses.
- **March 2020:** COVID Shutdown
- **3/17/21:** "First" In-Situ Mock Code Taskforce meeting
- **9/29/21:** First monthly mock code
- **1/5 & 1/6/22:** 4 additional team members attended the Interprofessional Faculty Development in Simulation course at the Clinical Simulation Laboratory at the University of Vermont

Evidence

Resuscitation Education	1. Hamilton	2. Hebers	3. Hunt	4. Josey	5. Knight	6. Mundell	7. Oermann	8. Panchal	9. Smith	10. Sullivan	11. Wallace	12. Wayne	13. Yang	Total: 13
Psychomotor Training/Simulation	x	x	x	x	x	x	x	x	x		x	x		11
Didactic teaching sessions (including video)	x		x								x			3
Deliberate Practice/Pre-knowledge of training by students			x				x	x	x			x		5
Immediate mannequin feedback	x		x	x	x	x	x	x		x	x			9
Case-based	x		x	x		x		x	x			x		7
Evaluated based on AHA ACLS guidelines		x		x	x		x	x	x			x		7
In-situ		x		x	x	x				x	x			6
Incorporated external distractions						x								1
Short training sessions (5-15min)		x	x	x		x	x	x		x				7
Long training session (>4hours)									x			x		2
Repetitive Training/Follow-up "booster" learning sessions				x	x	x	x	x		x				6
Every 3 months	x		x					x	x	x				5
Monthly					x		x							2
Post simulation debriefing		x		x	x	x			x	x	x	x		8
Team/Group Learning	x	x	x			x				x				5
Interdisciplinary/Interprofessional				x	x	x					x			4
Knowledge and skills decay after 6mo		x		x			x	x	x	x	x		x	8
Increased adherence to AHA standards/Improved quality of resuscitation efforts	x	x	x	x	x		x	x	x	x		x		10
Improved patient outcomes (improved survival to hospital discharge)				x	x						x	x		4
Increased staff confidence		x	x								x			3

Why is this project important?

- Data showing we needed the education
- Staff have identified lack of confidence
- Knowledge and skills degrade

The Planning Phase

- Creation of the project from previous mock code models
- Formulated the mock code binder that housed all scenarios
- Practiced and ran these codes as a team prior to implementation
- Determined debriefing criteria

Intervention Implementation

- In situ simulations were scheduled every two weeks
- A feedback mannequin, rhythm simulator, and mock code cart were used
- An emergency scenario was provided to one of the participating staff via notecard
- Accuracy in identifying the correct ACLS algorithm
- Staff members were asked to respond as they would in a live environment
- A guided group debrief session was held immediately following the simulation
- A post self-reflective survey was sent to each participant

Project work

MOCK CODE

Simulation training in progress.

Thomas was admitted yesterday for heart failure exacerbation. He received 2 doses of IV Lasix since admission. He has a history of CAD, DM, and systolic heart failure. He has not been requiring any supplemental O2.

SIMULATION 1 - STABLE VT: Thomas

FIRST RESPONDER:
- VS: 95/58, HR 141, SpO2 94% on RA
- Rhythm: VT (slow), HR 141, + pulse
- Patient: no CP, no SOB

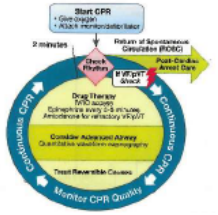
ADDITIONAL STAFF:
- VS: 83/46, HR 187, SpO2 89% on RA/96% on O2
- Rhythm: VT (fast), HR 187, + pulse
- Patient: new CP

A RECHECK:
- VS: 78/45, HR 187, SpO2 80% on RA/88% on O2
- Rhythm: VT (fast), + pulse
- Patient: moaning, feeling "horrible", pale, diaphoretic, nauseated

Skip to **C if Amiodarone bolus or synchronized CV done**

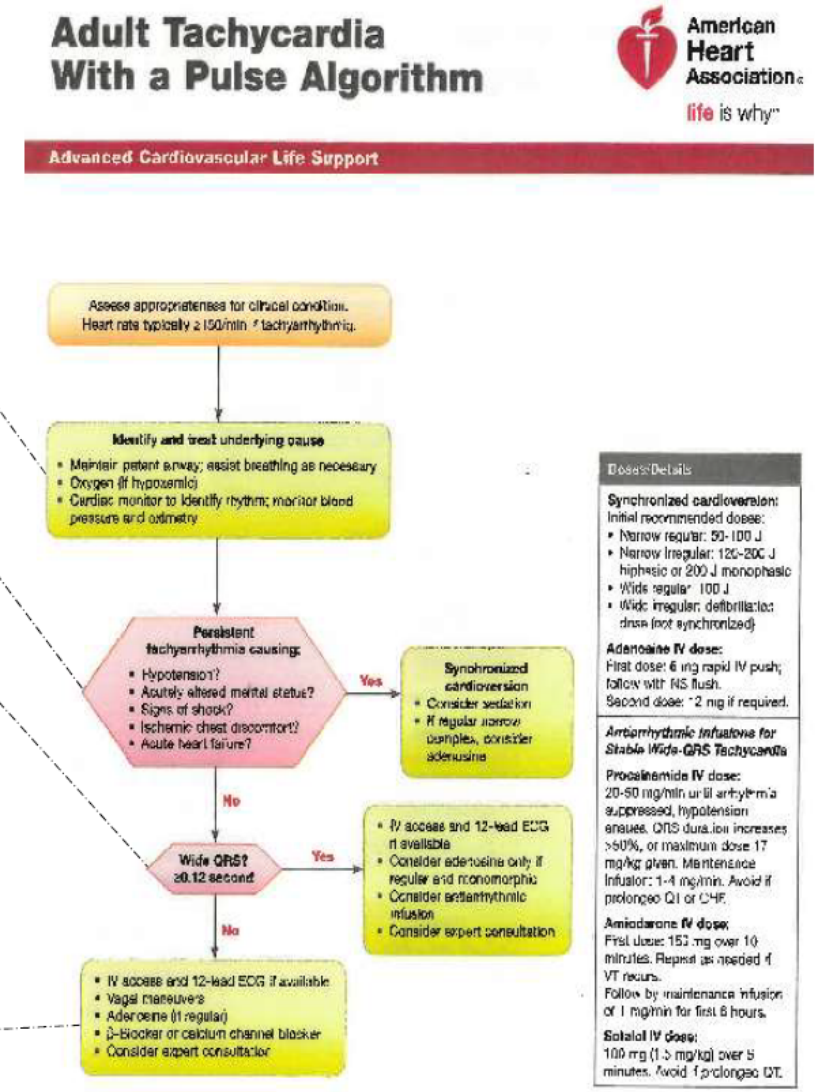
B RECHECK: **(CARDIAC ARREST ALGORITHM)**
- VS: VT 187, 0 RR
- Rhythm: VT (fast), - pulse
- Patient: dead

He remains in VT for 2 rounds of CPR with Epi and shock.
(This should last a minimum of 4 minutes.)



C **OR** AFTER SECOND SHOCK:
- VS: 88/56, HR 151, SpO2 87% on RA/92% on O2
- Rhythm: Aflutter, HR 151, + pulse
- Patient: dazed, lethargic, pale, moaning

*Scenarios were adapted from original scenarios created by
Amy Teleron, MD, FACP, Medical Director, UVMMC Clinical Emergency Response Teams



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Amy Teleron, MD, FACP, Medical Director, UVMMC Clinical Emergency Response Teams

Date: _____

SETUP: Sheet over bed with blanket, mannequin with lungs, attenuator attached to defibrillator, code cart in bathroom, mock code signage, first responder blue cards, simulator team cards,

NOTIFY: ANC, Patient Logistics, PAS, RRT, and Secretary. Make MDs on unit aware (so they do not respond).

DEBRIEFING IN-SITU UNIT BASED MOCK CODES: MILLER 4 CARDIOLOGY

* _____ Assign roles to specific people
* _____ Naming rhythm at start and at each pulse check
* _____ Naming ACLS algorithm at start and at each pulse check

Attendees: _____

_____

_____

*Debriefing tool adapted from original tool created by Amy Teleron, MD, FACP, Medical Director, UVMMC Clinical Emergency Response Teams

Debriefing Tool

Mock Code Pre-Survey

1. How would you rate the level of chaos during a code?

complete mayhem	confusing	same level of chaos as our normal workflow	some semblance of structure	calm and well-organized
◯	◯	◯	◯	◯

2. How often does the code team effectively use closed-loop communication during a code?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Usually
- ◯ Always

3. How often at the start of a code do you announce your role within the code team?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Usually
- ◯ Always

4. How confident are you in identifying the correct rhythm during a code?

- ◯ Not at all confident
- ◯ Not so confident
- ◯ Somewhat confident
- ◯ Very confident
- ◯ Extremely confident

5. How confident are you in identifying the correct ACLS algorithm within which to function during a code?

- ◯ Not at all confident
- ◯ Not so confident
- ◯ Somewhat confident
- ◯ Very confident
- ◯ Extremely confident

6. How often do we adhere to the time lines laid out within the ACLS algorithms? (for example, limiting pulse check between 2 minute cycles of CPR to 10 seconds or less)

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Usually
- ◯ Always

7. When were you last ACLS certified?

- ◯ I have not been ACLS certified
- ◯ in the last 6 months
- ◯ in the last year
- ◯ in the last 2 years
- ◯ my ACLS certification is outdated (>2 years ago)

8. What do you feel we (as a team) need to work on most in a code situation?

9. What do you feel you (personally) need to work on most during a code situation?

Mock Code Post-Survey

1. After the mock code scenario, my confidence level in correctly identifying the rhythm has increased.

- ◯ A great deal
- ◯ A little
- ◯ A lot
- ◯ Not at all
- ◯ A moderate amount

2. After the mock code scenario, my confidence level in verbalizing the correct algorithm has increased.

- ◯ A great deal
- ◯ A little
- ◯ A lot
- ◯ Not at all
- ◯ A moderate amount

3. After the mock code scenario, my confidence level in verbalizing my role within the code team has increased.

- ◯ A great deal
- ◯ A little
- ◯ A lot
- ◯ Not at all
- ◯ A moderate amount

4. What about the simulation was most helpful?

5. How can we make the simulation experience better?

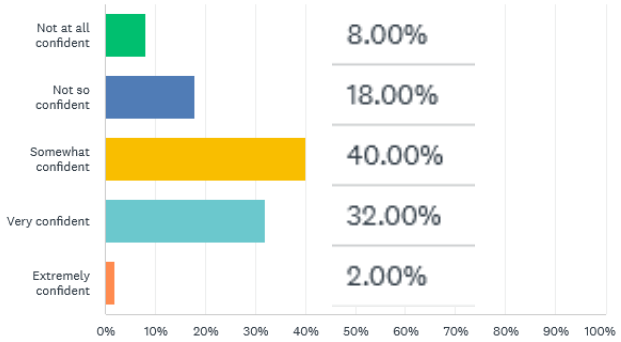
DONE

Results

- Over half of the staff submitted a pre-simulation self-assessment survey.
- Approximately half of the participants in simulation completed a post-simulation survey.
- Post surveys revealed an increase in staff confidence in each of these three areas.

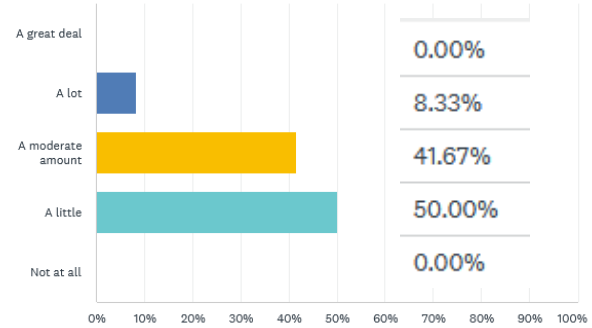
How confident are you in identifying the correct rhythm during a code?

Answered: 50 Skipped: 2



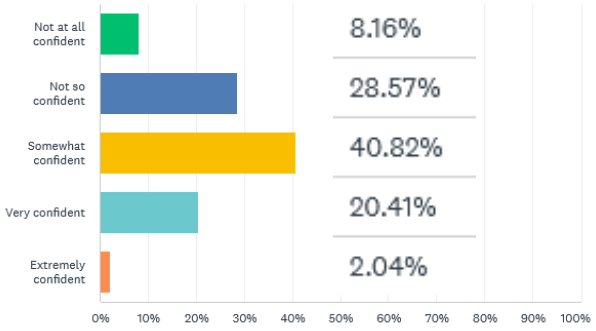
After the mock code scenario, my confidence level in correctly identifying the rhythm has increased.

Answered: 12 Skipped: 0



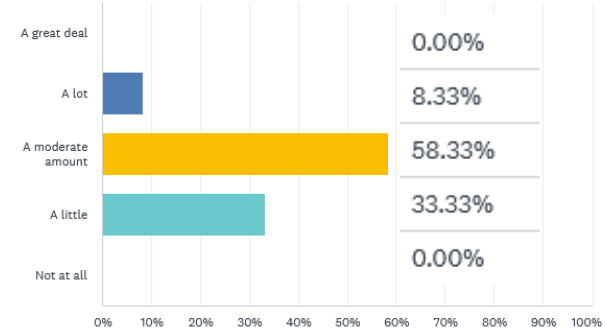
How confident are you in identifying the correct ACLS algorithm within which to function during a code?

Answered: 49 Skipped: 3



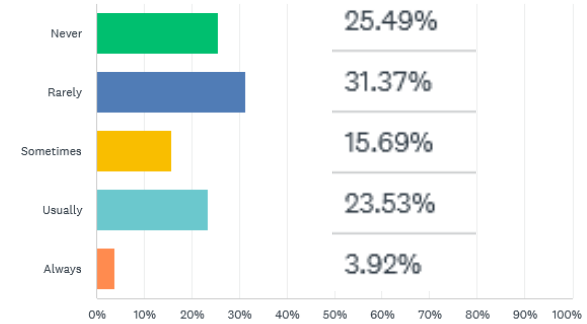
After the mock code scenario, my confidence level in verbalizing the correct algorithm has increased.

Answered: 12 Skipped: 0



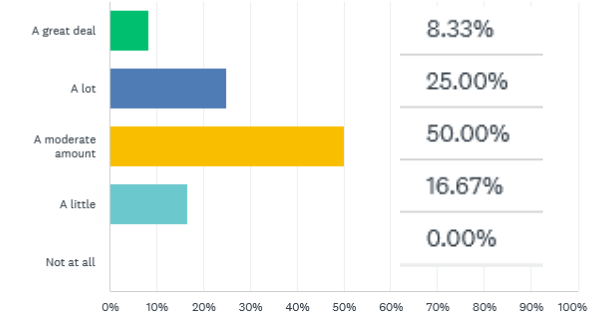
How often at the start of a code do you announce your role within the code team?

Answered: 51 Skipped: 1



After the mock code scenario, my confidence level in verbalizing my role within the code team has increased.

Answered: 12 Skipped: 0



Lessons Learned

What was difficult:

- Schedules of task force members
- Scheduling mock codes (not knowing the patient make-up or unit acuity in advance)
- COVID shutdown
- Who should participate
- Off-shift presence
- Endurance
- How many staff members were needed
- Tools that help scenario precision
- Increased staff participation
- ACLS algorithm review

Project Reflections

If we could go back and start over with the information we have now, how would we have done it differently?

Team Members

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