
# Practice makes perfect: Implementing Mock Codes in Hospitals

*Nicole Kupchik MN, RN, CCNS, CCRN, PCCN-CSC, CMC &*

*Chris Laux MSN, RN, ACNS-BC, CCRN, PCCN*

ECCU2017 Emergency Cardiovascular Care Update

CITIZEN CPR FOUNDATION
Helping citizens and communities save lives

# Objectives

- Discuss the value of performing mock codes
- Describe the importance of getting “buy-in”
- Describe what it takes to implement mock codes
- Discuss the importance of delineating team roles

# Background/Significance

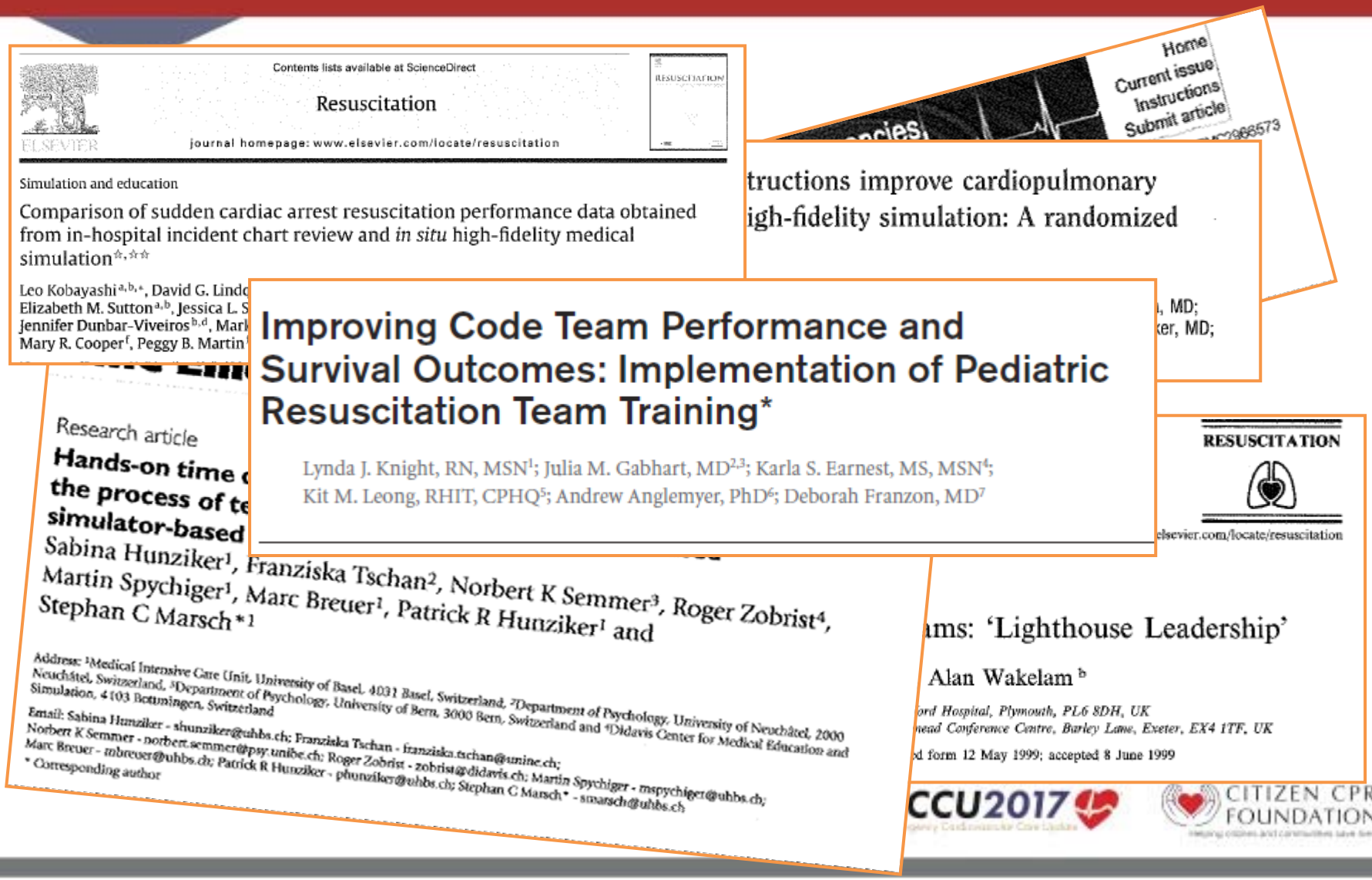
- Code Blue teams consist of health care providers who may not know each other
- They may have limited knowledge of each others' expertise
- Variability in role delineation often leads to confusion

# Background/Significance

Effective Code Blue Teams that are associated with improved patient outcomes:

- Rapid code team assembly
- High quality cardiac compressions/CPR
- Effective code team leadership

# How is an Effective Code Blue Team Developed??
## ...LOTS OF RESEARCH ON THE TOPIC!!!



Contents lists available at ScienceDirect

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation

Simulation and education

Comparison of sudden cardiac arrest resuscitation performance data obtained from in-hospital incident chart review and *in situ* high-fidelity medical simulation☆,☆☆

Leo Kobayashi[a,b,*], David G. Lindo
Elizabeth M. Sutton[a,b], Jessica L. S
Jennifer Dunbar-Viveiros[b,d], Mark
Mary R. Cooper[f], Peggy B. Martin[

Home
Current issue
Instructions
Submit article

tructions improve cardiopulmonary
igh-fidelity simulation: A randomized

, MD;
ker, MD;

Improving Code Team Performance and Survival Outcomes: Implementation of Pediatric Resuscitation Team Training*

Lynda J. Knight, RN, MSN[1]; Julia M. Gabhart, MD[2,3]; Karla S. Earnest, MS, MSN[4]; Kit M. Leong, RHIT, CPHQ[5]; Andrew Anglemyer, PhD[6]; Deborah Franzon, MD[7]

Research article

Hands-on time
the process of te
simulator-based

Sabina Hunziker[1], Franziska Tschan[2], Norbert K Semmer[3], Roger Zobrist[4], Martin Spychiger[1], Marc Breuer[1], Patrick R Hunziker[1] and Stephan C Marsch*[1]

Address: [1]Medical Intensive Care Unit, University of Basel, 4031 Basel, Switzerland, [2]Department of Psychology, University of Neuchâtel, 2000 Neuchâtel, Switzerland, [3]Department of Psychology, University of Bern, 3000 Bern, Switzerland and [4]Didavis Center for Medical Education and Simulation, 4103 Bottmingen, Switzerland

Email: Sabina Hunziker - shunziker@uhbs.ch; Franziska Tschan - franziska.tschan@unine.ch; Norbert K Semmer - norbert.semmer@psy.unibe.ch; Roger Zobrist - zobrist@didavis.ch; Martin Spychiger - mspychiger@uhbs.ch; Marc Breuer - mbreuer@uhbs.ch; Patrick R Hunziker - phunziker@uhbs.ch; Stephan C Marsch* - smarsch@uhbs.ch

* Corresponding author

RESUSCITATION

elsevier.com/locate/resuscitation

ams: 'Lighthouse Leadership'

Alan Wakelam [b]

ord Hospital, Plymouth, PL6 8DH, UK
nead Conference Centre, Burley Lane, Exeter, EX4 1TF, UK

d form 12 May 1999; accepted 8 June 1999

CCU2017

CITIZEN CPR FOUNDATION

# Effective Training Program

Ongoing multidisciplinary training program:

- Regular scheduled mock codes
- Initial & annual individual team role training
- Leadership training
- ACLS/BLS certification required for all members of the Code Blue Team

**Is this enough?**

- If CPR is performed infrequently, knowledge & skills are lost within weeks of training
- In-situ training programs every 3 months decreases median time to:
  - Start chest compressions (33 sec vs. 13 sec)
  - Defibrillation (157 sec vs. 109 sec)

Everett-Thomas, Nurse education in progress (2016)
Sullivan, et al, Resuscitation (2015)

# Various types of Resuscitation Practice

- New staff orientation
- Critical Care & Progressive Care Orientation
- Unit-based (Evaluate first responders)
- System-based (Evaluate Code Blue Team)
- Simulation Center
- Resident orientation

ECCU2017

CITIZEN CPR FOUNDATION

# Purpose of Resuscitation Drills

- Identify system issues
- Evaluate communication system
- Assess & evaluate team roles
- Evaluate quality measures:
  - How long does it take the code team to arrive?
  - Are essential people present?
  - Time to start chest compressions
  - Interruptions in chest compressions
  - Time to defibrillation
  - Airway management

Clinical Investigations

# Residents feel un aders of cardiac arrest teams in te ternal medicine residents*

Chris W. Hayes, MD, MSc; R. Leblanc, PhD; Randy S. Wax, MD, MEd

tical Care Medicine, 2007;35(7)

# Where do I begin?

Know your stats!

**Buy-in from essential people:**

- Administration
- Managers
- Physicians (Champion)
- Code team members
- Code Blue Committee
- Risk Management
- Patient Safety Officer

Equipment

- Functional mannequin
- Simulator (Rhythm generator)
- Agreement to use crash carts

ECCU2017

CITIZEN CPR FOUNDATION

# Mock Codes

- Started in 2007
- Goal 4x/month, day & night shift
- Announced as a real code
- Started low fidelity
- Using “in-situ” code blue simulations with a high fidelity, full-scale simulation mannequin
- Adult & pediatric scenarios
- Resuscitation experts observe & evaluate the code using a standardized form
- Debriefing after simulations

# Low vs. High Fidelity Simulation

## Low fidelity

- Equipment less expensive, more mobile
- Not as many staff resources are needed to run simulation (1 – 2 people)
- Less planning time
- Coordination of personnel for the mock code is decreased
- More effort to collect data
- Manual data collection

ECCU2017

CITIZEN CPR FOUNDATION

# Low vs. High Fidelity Simulation

## High fidelity

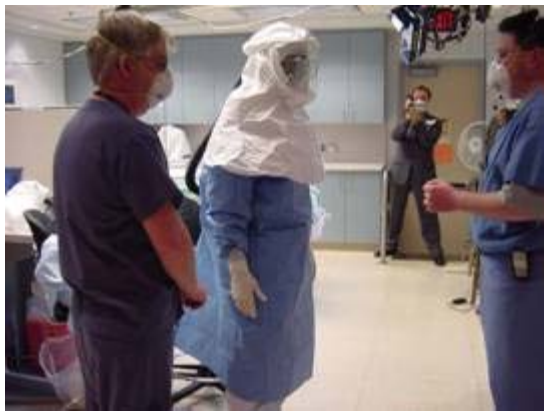
- Obtain objective data on compression quality
- Equipment is expensive
- Equipment is heavy & not easily moved around
- Need tech and educator support
- Scenarios are more realistic & increases critical thinking
- Decreases time to staff initiating code blue interventions

ECCU2017

CITIZEN CPR FOUNDATION

# Special Circumstances to drill

- Cath lab
- Isolation rooms
- TB isolation
- H1N1 Isolation
- Trauma braces (TLSO)
- Pediatrics
- Obstetrics
- Codes in public areas
- Clinic areas



# Debriefing

"Thanks to everyone for participating"

***Three questions:***

- What went well?
- What could the team do differently next time?
- Any safety or equipment concerns?

- Safe environment, places no blame
- Challenges in debriefing

ECCU2017

CITIZEN CPR FOUNDATION

# Evaluation Metrics


**Alert system**

- Paging operator
- Internal Unit
- Time to overhead or pagers

**First Responders/Code Team**

- Time of pulse check
- Time of compressions
- Time of 1st defibrillation
- Time of airway intervention

**Quality**

- Compression quality
- Defibrillation
- Ventilations

**Communication**

- Leadership
- Call-backs
- Roles

# Data Collection Form

## Code Blue Drill

**Date:**

_____

**Unit:**

_____

**Key people to notify prior to mock code:**

**Anesthesia lead (4-8800)**
**Nurse Manager of unit**
**Nursing supervisor 4-3932**
**Lead STAT RN 744-7134**
**Charge RT 744-7501**

| Critical Element: | Time: | Notes: |
|---|---|---|
| Code Blue called to operator | | |
| Code Blue announced overhead | | |
| Code Blue message reaches pager | | |
| Arrival of first responder | | |
| Arrival of MD | | |
| Arrival of anesthesia | | |
| Arrival of operations RN | | |
| Arrival of defib RN | | |
| Arrival of med RN (primary RN in ICU) | | |
| Arrival of RT | | |
| Arrival of pharmacy | | |
| Arrival of Lab | | |
| Assessment of airway & breathing | | |
| Pulse check | | |
| Application of oxygen | | |
| Establish IV or IO line | | |
| CPR initiated/CPR board used | | |
| Time to 1st defib (or N/A) | | |
| First Epi or Vasopressin | | |
| Documentation started | | |
| Other evaluation areas: | | |
| Overall communication | | |
| Identification of lead MD? | | |
| CPR quality: | | |
| % of hands on time | | |
| Depth of compressions | | |
| Compression rate | | |
| How many times was CPR interrupted? (Total time if possible) | | |
| Rate of breaths(not too fast) | | |
| Proper rhythm identification? | | |
| If PEA, was differential diagnosis/cause discussed? | | |
| Other issues: Supplies<br>Too many people in the room?<br>Not enough essential people in the room? | | |

ECCU2017

CITIZEN CPR FOUNDATION

# What did we learn?

# We needed to focus on the basics

- CPR Quality
- Defibrillation
- Application of Capnography
- SLOW down assisted ventilation rate
- Leadership

# Ideal Defibrillation

ECCU2017

CITIZEN CPR FOUNDATION

# How many combinations of teams could one hospital possibly have?

MICU Attendings + MICU residents: 60 people

MCICU RNs: 40 people

Anesthesiologists: 50 people

RTs [illegible] ople

Pha [illegible] ople

3 East RNs (Recorder): [illegible] people

5 East RNs (Defib): 22 people

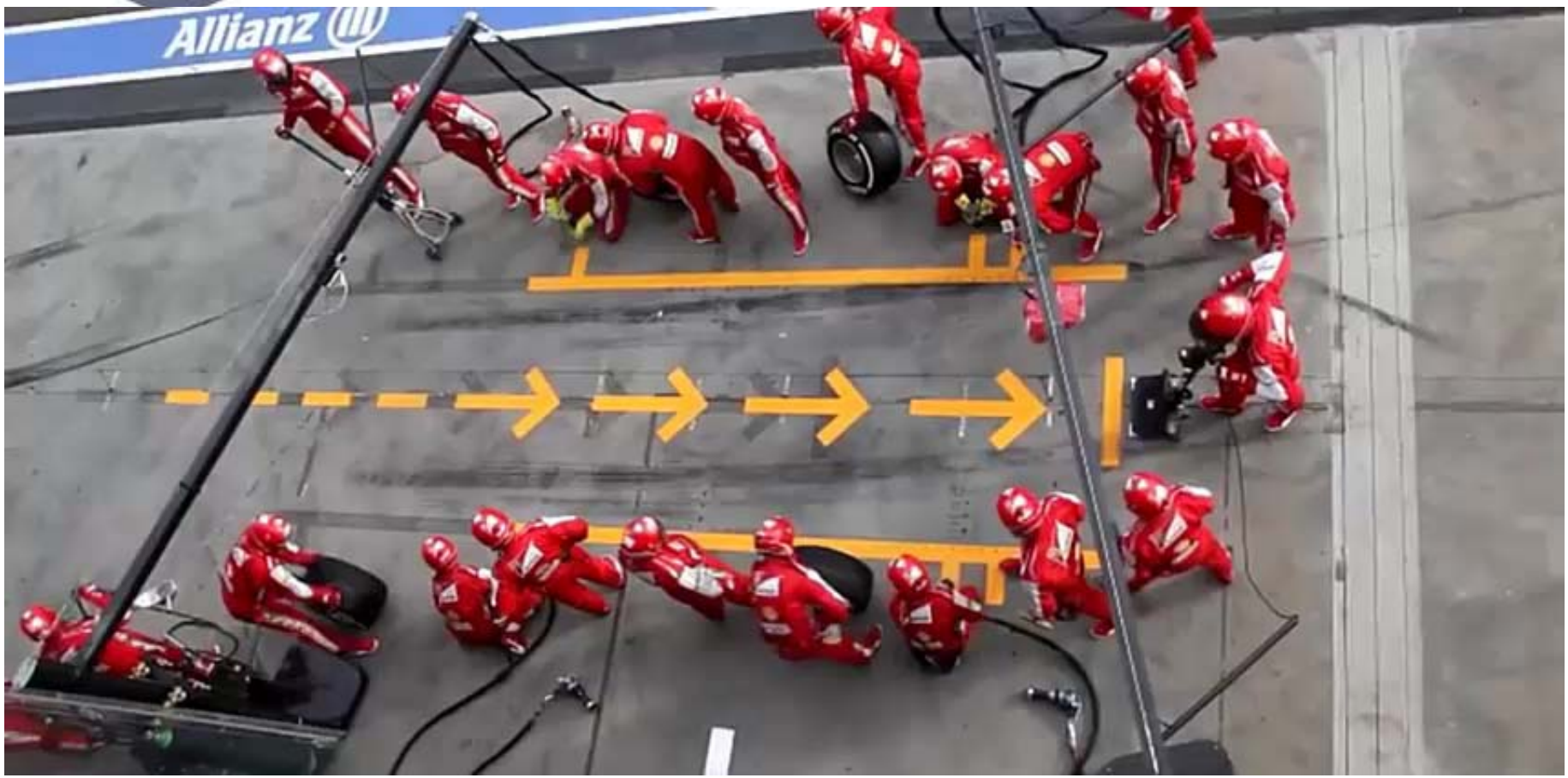
STAT RNs: 18 people

**Over 1 BILLION different combinations of Code Blue teams!!!!**

ECCU2017

CITIZEN CPR FOUNDATION

# Are humans as important as NASCAR?

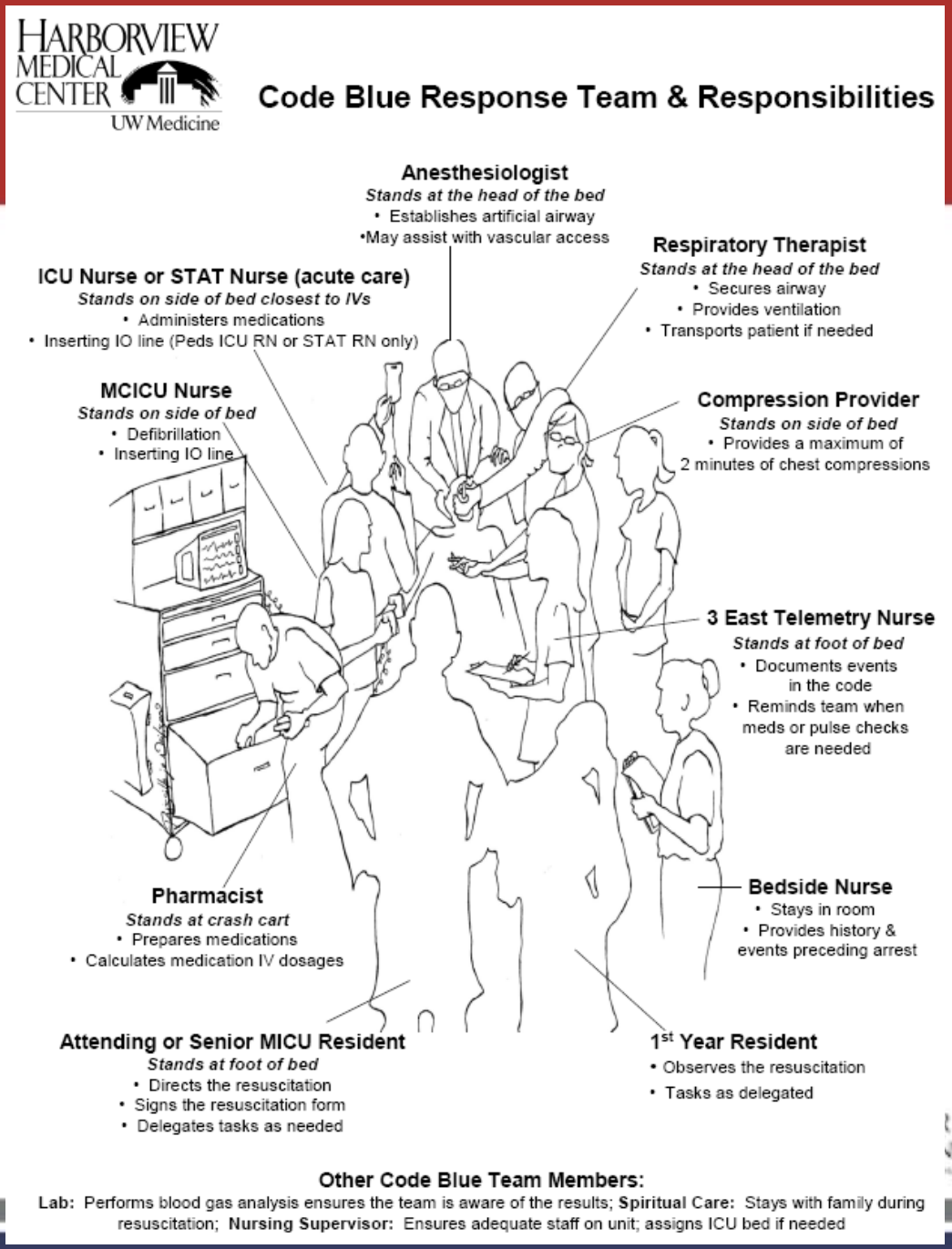



ECCU2017

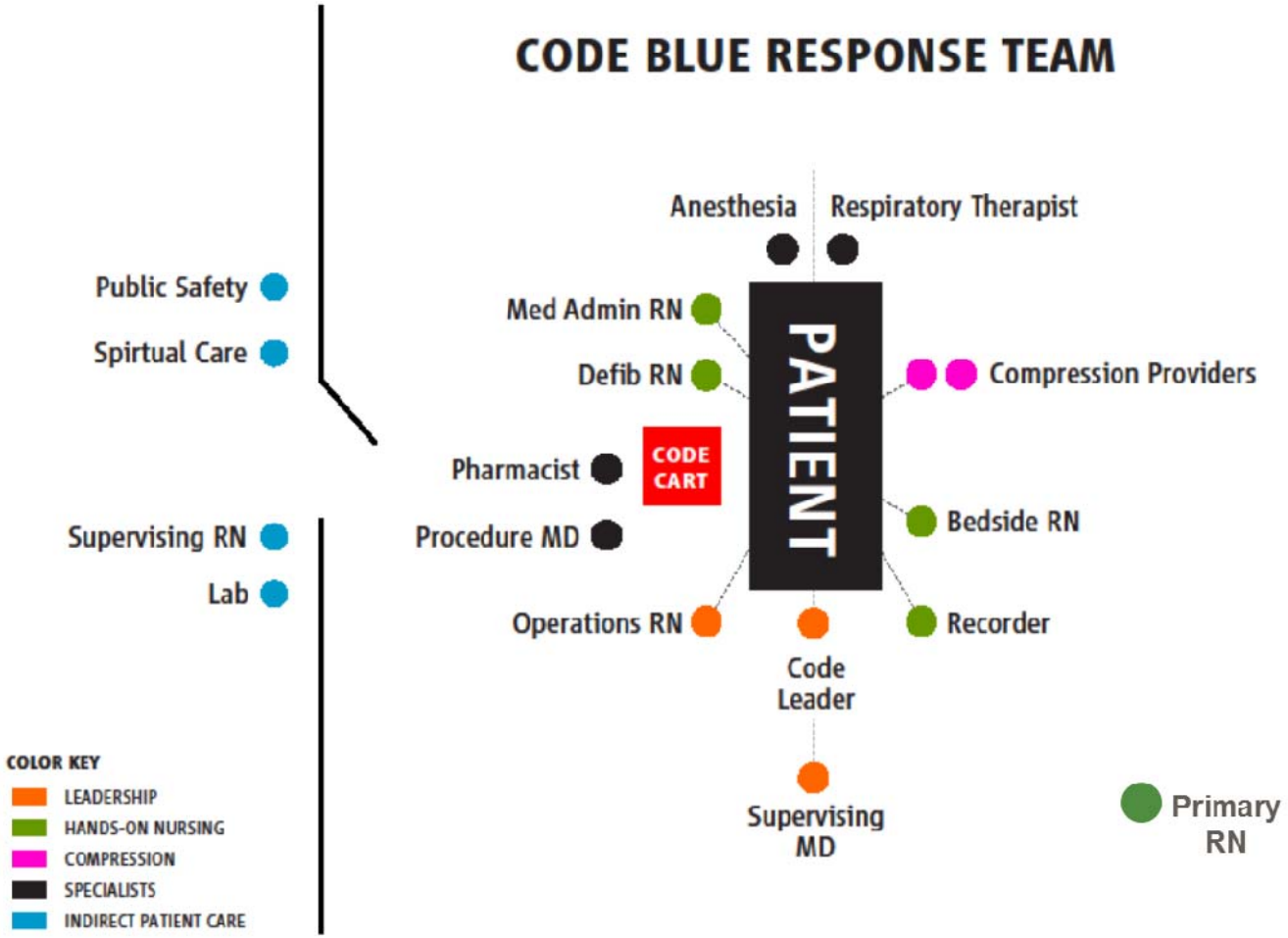
CITIZEN CPR FOUNDATION

**Other responders:**

- Lab
- Nursing Supervisor
- Security
- Chaplain
- Family



# Rapid Team Assembly
## Predetermined Roles




CITIZEN CPR FOUNDATION


ECCU2017

CITIZEN CPR FOUNDATION

# Effective Code Team Leadership

- Ability to coordinate activities of the members
- Give concise explanations
- Take charge: Announce they are the code leader
- Shared mental model
  - Think out loud
  - Summarize code process
  - Ask for suggestions
- Good communication skills
  - Assertive
  - Respectful communication tools
  - Closed loop communication
    - Give an order
    - Acknowledgement of order by team member
    - Indicate when intervention is completed

# Who shows up to your resuscitations?!

ECCU2017

CITIZEN CPR FOUNDATION

# Code Blue Team Identifiers

**The Nursing Supervisor is responsible for crowd control**



ECCU2017

CITIZEN CPR FOUNDATION

# Potential problems with Mock Codes

- High fidelity vs. low fidelity
- Taking the mock code seriously
- Administration buy-in
- Taking providers away from their patients
- Covering all shifts
- Data collected realistic?

ECCU2017

CITIZEN CPR FOUNDATION

# Mock Code Programs

## Positive

- Training increases staff satisfaction
- Simulation training increases compliance to AHA resuscitation standards
- Leadership training improves team dynamics & increases skill performance

## Negative

- Training takes resources: educators, equipment, staff time which increases non-productive costs
- Need to get administration & leadership buy-in
- Data collection – additional resources needed
- Do staff treat a mock code like a real code?
- Need to cover all shifts

Cooper & Wakelam, Resuscitation (1999)

# Take home points…

- This can be done at any facility!
- You need to do what works for your facility
- Need to practice low volume, high risk procedures

**Focus on:**

- CPR Quality
- Defibrillation time
- Ventilation
- Documentation
- Team dynamics & leadership
- Communication
- Debriefing

ECCU2017

CITIZEN CPR FOUNDATION

# Contact info:

Nicole Kupchik:

nkupchik@gmail.com

 Nicole Kupchik Consulting & Education

 @nicolekupchik

Chris Laux:

Christine.laux@overlakehospital.org

ECCU2017

CITIZEN CPR FOUNDATION