How to approach: CODE BLUE RAPID RESPONSE

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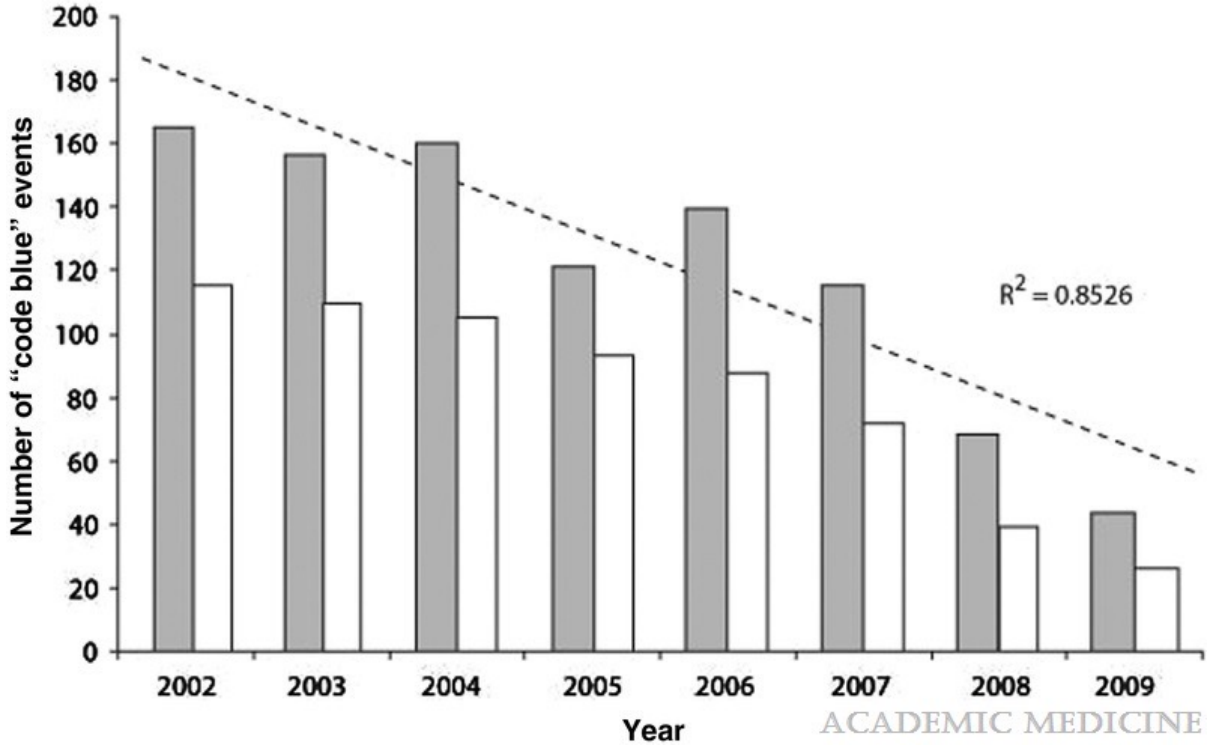
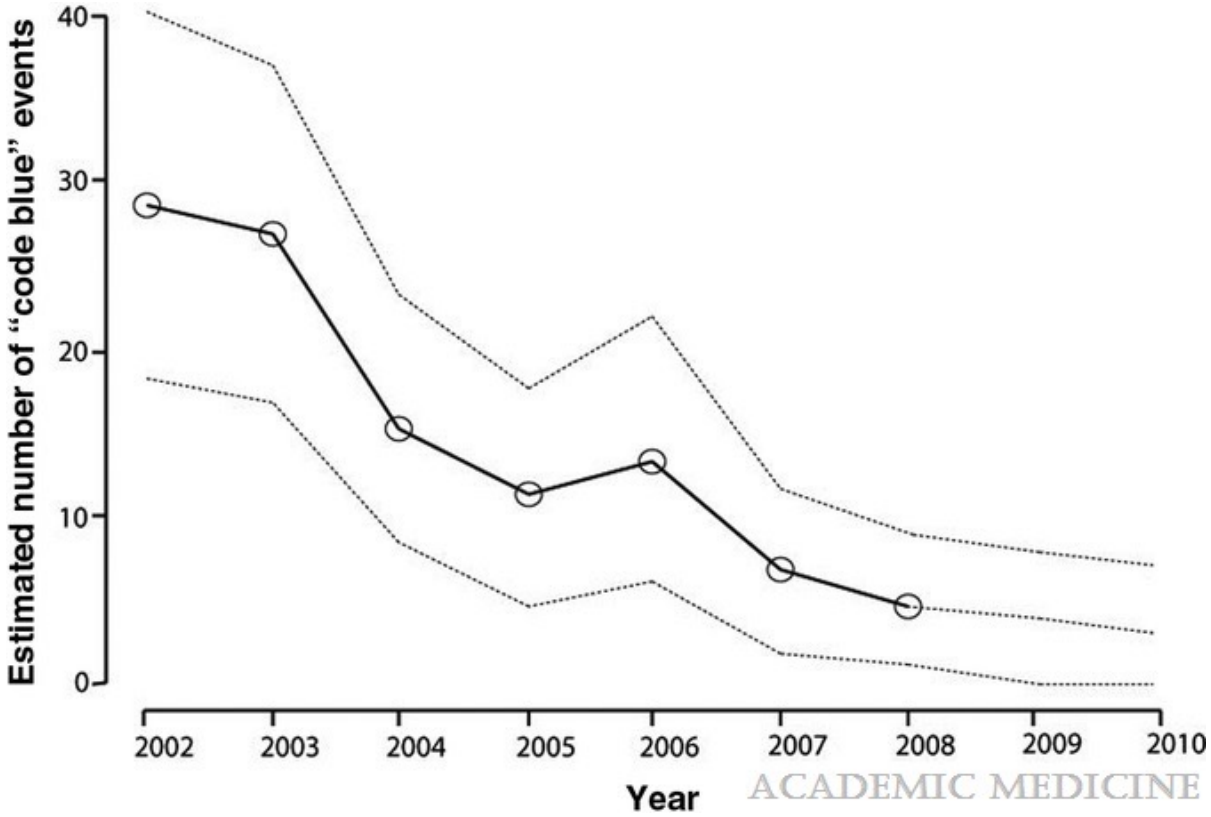
2020-2021 has been weird

Discussion | There are limited data on the characteristics and outcomes of cardiac arrest in patients hospitalized with COVID-19 in the US. In our study of 54 patients with COVID-19, there was a 100% mortality rate following CPR. The initial rhythm was nonshockable for 52 patients (96.3%), with pulseless electrical activity being the most common (44 [81.5%]). Despite 29 patients (53.7%) achieving ROSC, none survived to discharge.

doi:10.1001/jamainternmed.2020.4796

Code Blues were becoming less common before COVID





Academic Medicine86(6):726-730, June 2011.

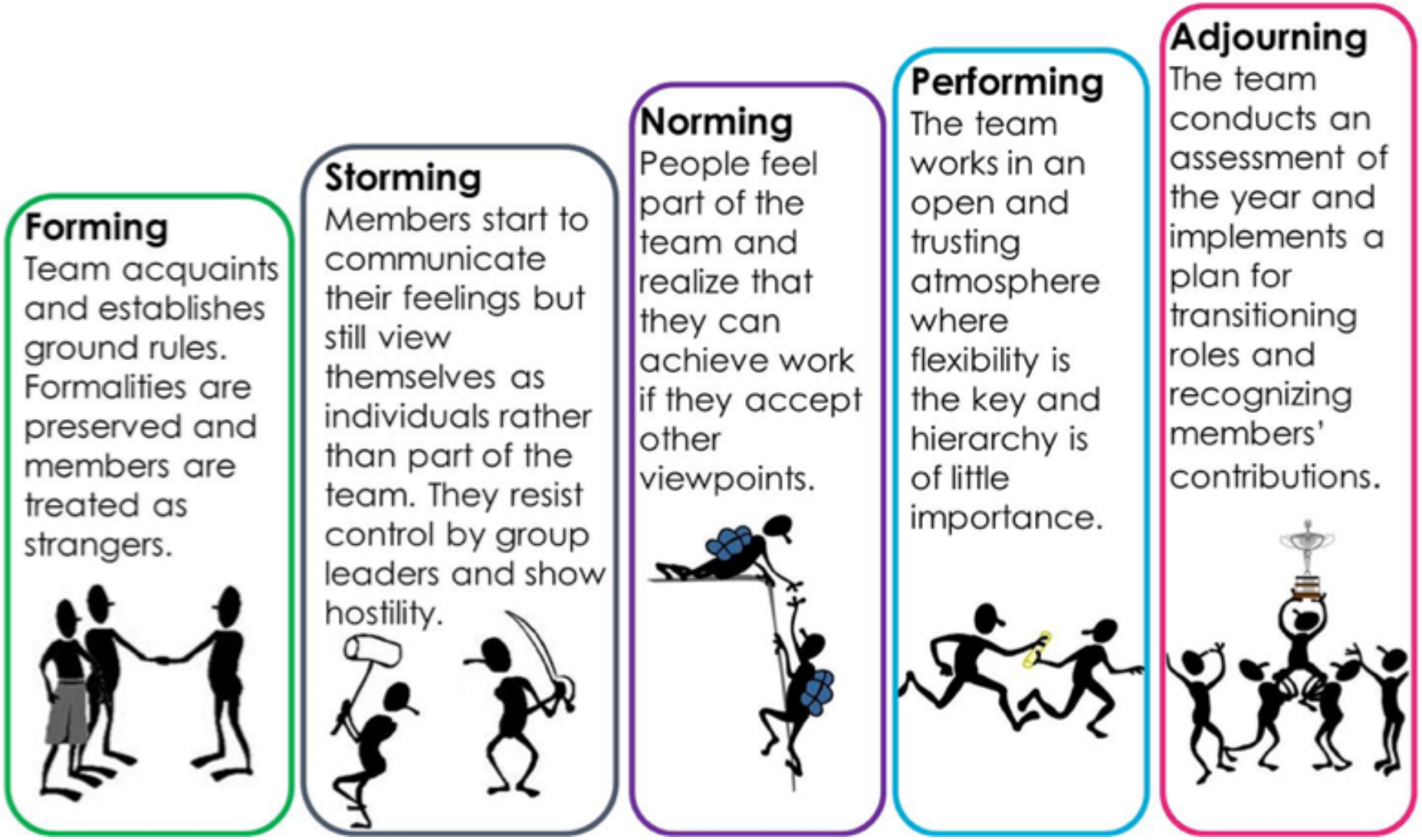
What makes codes/RRTs stressful

Learning objectives:

You should:

- Have phrases ready to help avoid some of the major team-dynamic problems that occur in RRTs / Codes
- Understand the key components to creating a productive team dynamic during a code
- Understand the key decisions that need to be made in a RRT or code
- Discuss a few medical pitfalls (if we have time)

Part 1: Team Dynamics



Tuckman's stages of group development (1965)

What's the big picture?

Hello, nice to meet you. Let's code

Table 3. Domains and Relevant Differences Distinguishing Rapid Response Teams at Top-Performing and Non–Top-Performing Hospitals

Domain	Relevant Differences
Team design and composition	Top-performing hospitals had dedicated RRTs without other clinical responsibilities and were staffed with members with broad and consistent expertise RRT members at bottom-performing hospitals had other competing clinical responsibilities
Surveillance of at-risk patients	Top-performing hospitals tended to have RRTs actively engaged with bedside nursing in surveillance of at-risk patients prior to clinical deterioration Bottom-performing hospitals seemed to engage less proactively with bedside nursing owing to competing responsibilities and seemed to struggle with appropriate timing and reasons for calling RRTs
Empowerment of bedside nurses to activate a rapid response	Top-performing hospitals empowered nurses to call RRTs based on their clinical judgment and expertise Staff at bottom-performing hospitals seemed concerned about potential consequences of calling RRTs
Collaboration between RRTs and bedside nurses during and after a rapid response	Top-performing hospitals partnered closely with bedside nurses for responses, debriefing, and education Bottom-performing hospitals tended to engage less with bedside nurses and "take over" patient care responsibilities

Abbreviation: RRTs, rapid response teams.

doi:10.1001/jamainternmed.2019.2420

ACLS isn’t hard… with some help from your friends

DOSES

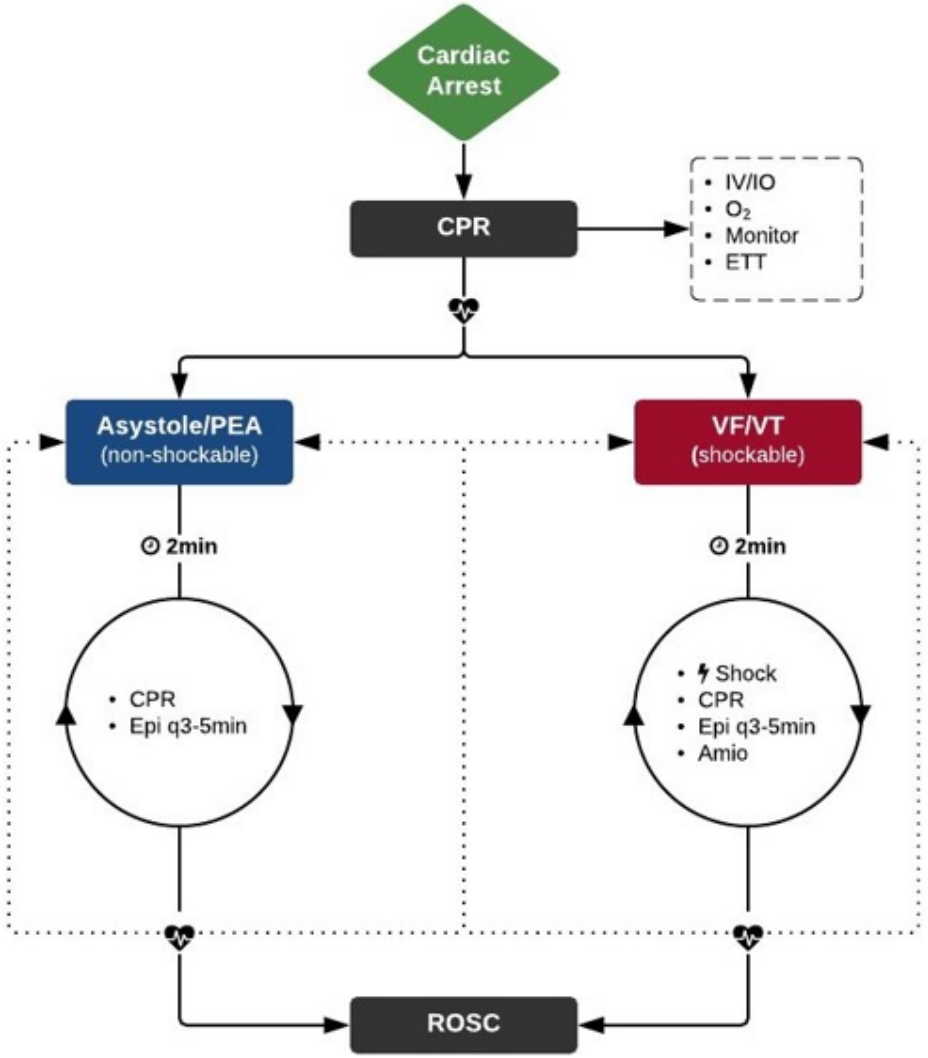
- Defibrillation: 200J
- Epinephrine: 1mg
- Vasopressin: 40 units
- Amiodarone: 300mg, 150mg

H's & T's

- Hypovolemia
- Hypoxia
- Hypo/hyperkalemia
- Hydrogen (acidemia)
- Hypothermia
- Thrombosis (coronary)
- Thrombosis (pulmonary)
- Tension pneumothorax
- Tamponade
- Toxin

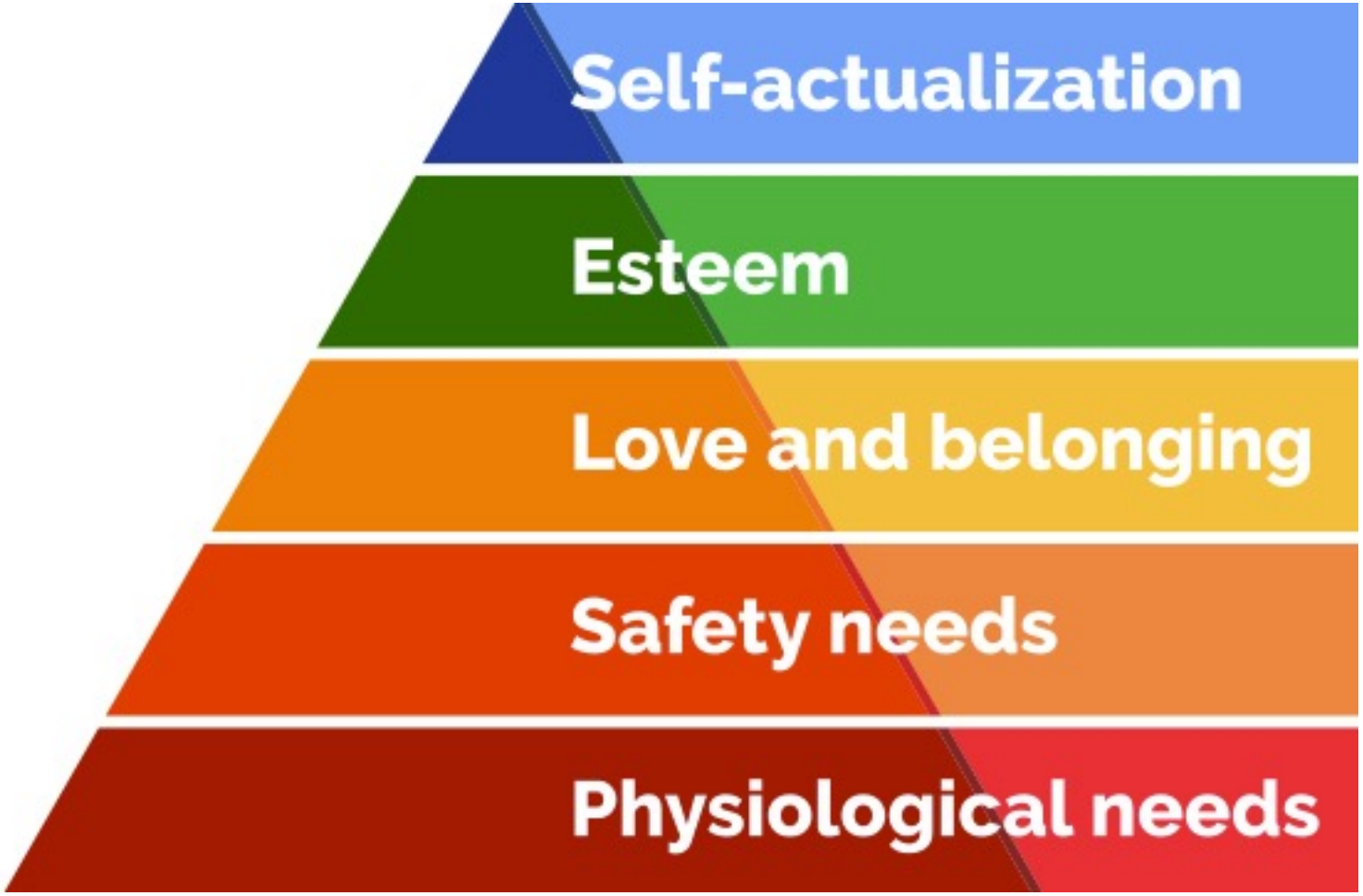
ROSC MANAGEMENT

- Reperfusion if STEMI
- Therapeutic hypothermia if not responsive
- Maintain oxygenation, SpO2 > 94% (ETT)
- Maintain perfusion, SBP >90mmHg (IVF, pressor)
- Admit ICU



ACLS isn’t hard… with some help from your friends

You want to immediately establish…



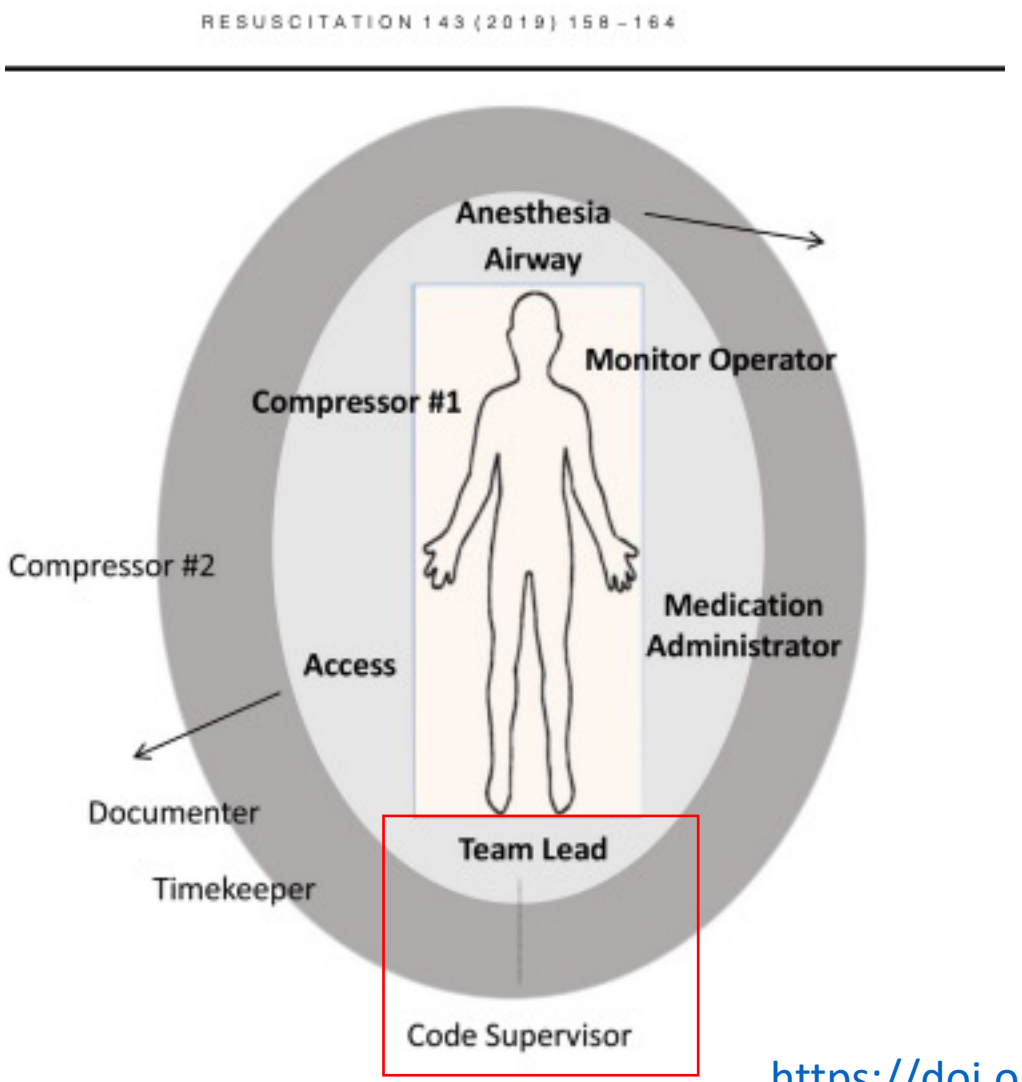
- Collaboration / Trust
- Lower the power distance
- Proper tone
- Are you the point person (in practice)?
- Are you running the code/rapid in theory?

Step 1: Are you running this code or not?

- "I'm Brian Locke, the resident on the the Code team/RRT. Is anyone running this code?"

- “OK, I’m running this code” or “Can I take over?"

Step 2. Signal that you will be the point person



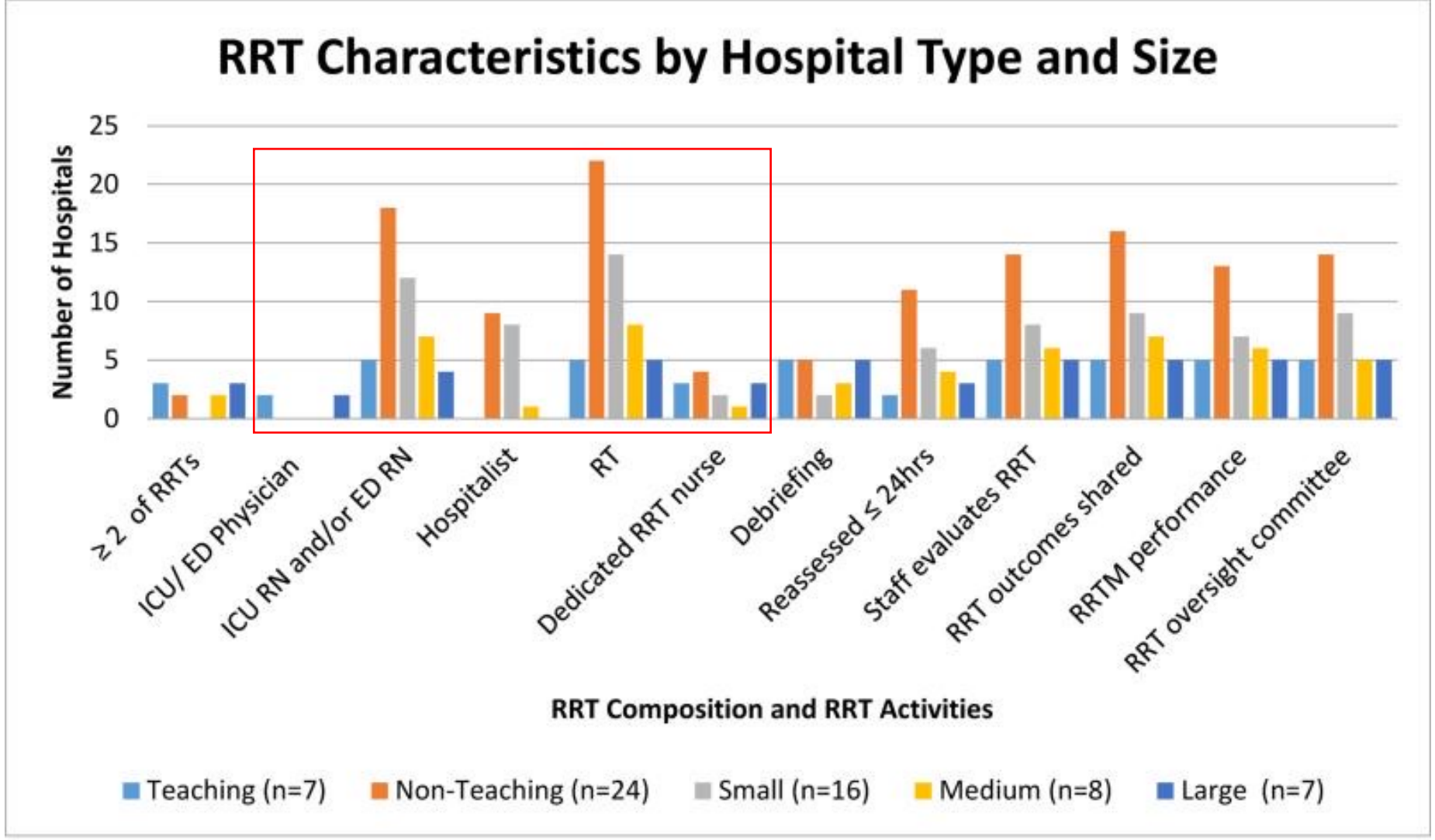
https://doi.org/10.1016/j.resuscitation.2020.11.018

Step 3: Set the proper tone - constructive

- Calm, collected, and in control
- Modulate your voice; no yelling
- Coach, don’t reprimand.
- Give encouragement.

Step 4: Lower the Power Distance

- Lead like a president not like a monarch.
- The first time anyone makes any suggestion that's not ludicrous address them and say: "great point/idea/catch .."
- “Thinking out loud …”



Note. Hospital Type: Teaching versus Non-Teaching; Hospital Size (number of beds licensed and staffed): S = 0 – 150; M= 151 – 500; L = ≥ 501; ICU = Intensive Care Unit; ED = Emergency Department; RN= Registered Nurse; RT= Respiratory Therapist; RRTM = Rapid Response Team Member

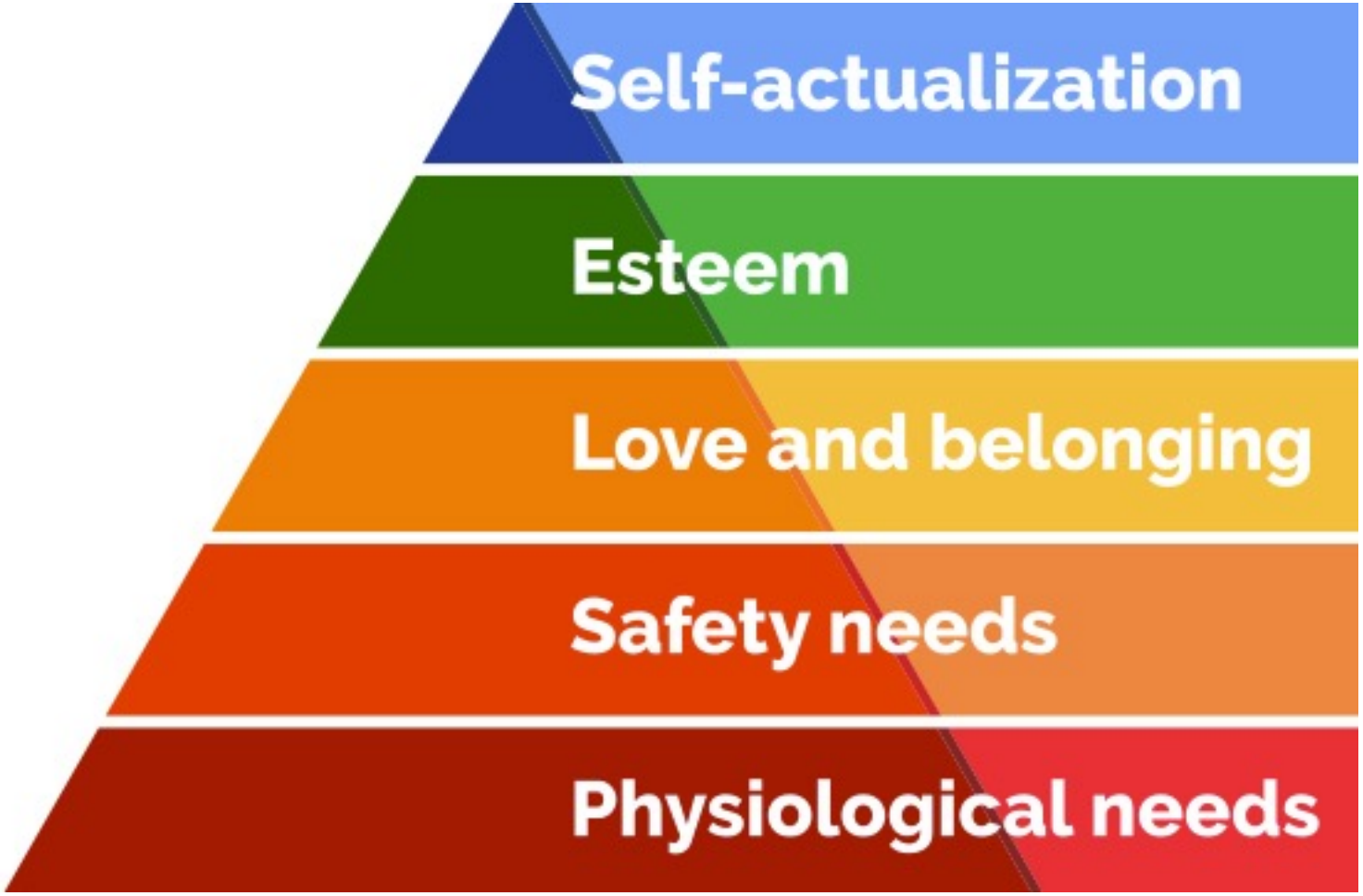
- No MD or Resident in many places
- The code could run without us– our role is to *add value*
- This is very different from our simulations

PMID: 25977203

In summary:

- Codes / RRTs are stressful for many reasons.
- The most common way for them to go wrong are problems with social dynamics, not with medical decision making
- To avoid the biggest pitfalls:
  - Establish who is the leader, first by designation then by action
  - Signal that you want people's input
  - Direct the group like a coach, don't rule like a queen/king
  - Use your social capital on things that matter

You want to immediately establish…



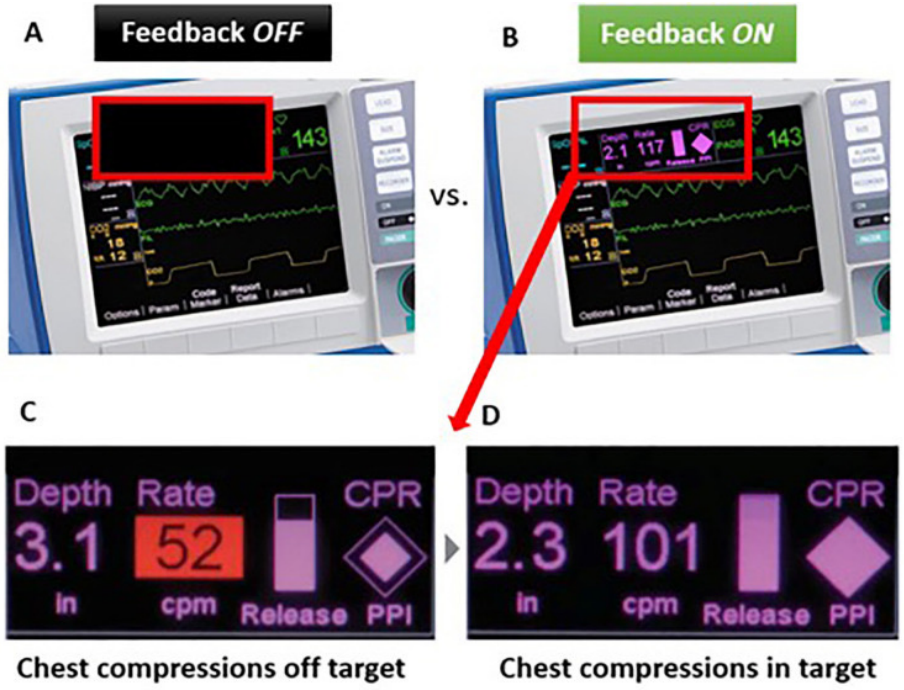
Where to use your social capital?

- Collaboration / Trust
- Are you open to input?
- Proper tone
- Are you the point person (in practice)?
- Are you running the code/rapid in theory?

What is the big picture?

<u>In a Code:</u>

1. If they don't have a pulse, someone is compressing the chest with high quality CPR. NO significant breaks.
    1. Minimize pauses to necessary position changes, pulse checks, and a little wiggle room to the Lucas or intubation (but only a little)
2. shock them if they have a shockable rhythm



What is the big picture?

Rapid Response:

1. Is this actually a code blue?
    1. will it be in the next 10 minutes? Do I need airway people here?
2. Do they need to be in an ICU?
    1. (this generally involves eyeballing the patient, asking orientation questions, and 1 set of vitals, and asking what happened leading up to the RRT). 10 minutes tops
    2. Do we need to do anything to stabilize them before they go to the ICU?
3. What immediate workup or stabilization do they need if staying put? Hand off to primary team

Scenarios

- A patient is in profound shock from GI bleeding. RRT called due to MEWS score of 8. There is ongoing bleeding. Transfer to ICU is initiated.
- Initial VS are HR 150 and BP 70/30. Then, HR 160 and BP 60/30. Then your colleague can't feel the femoral pulse so you start compression. After 1L of fluid and 1 prbc unit is pressured bagged in the patient regains a pulse.
- When you arrive at the ICU – the MICU fellow gives you snark "was this really an arrest"? What do you think?

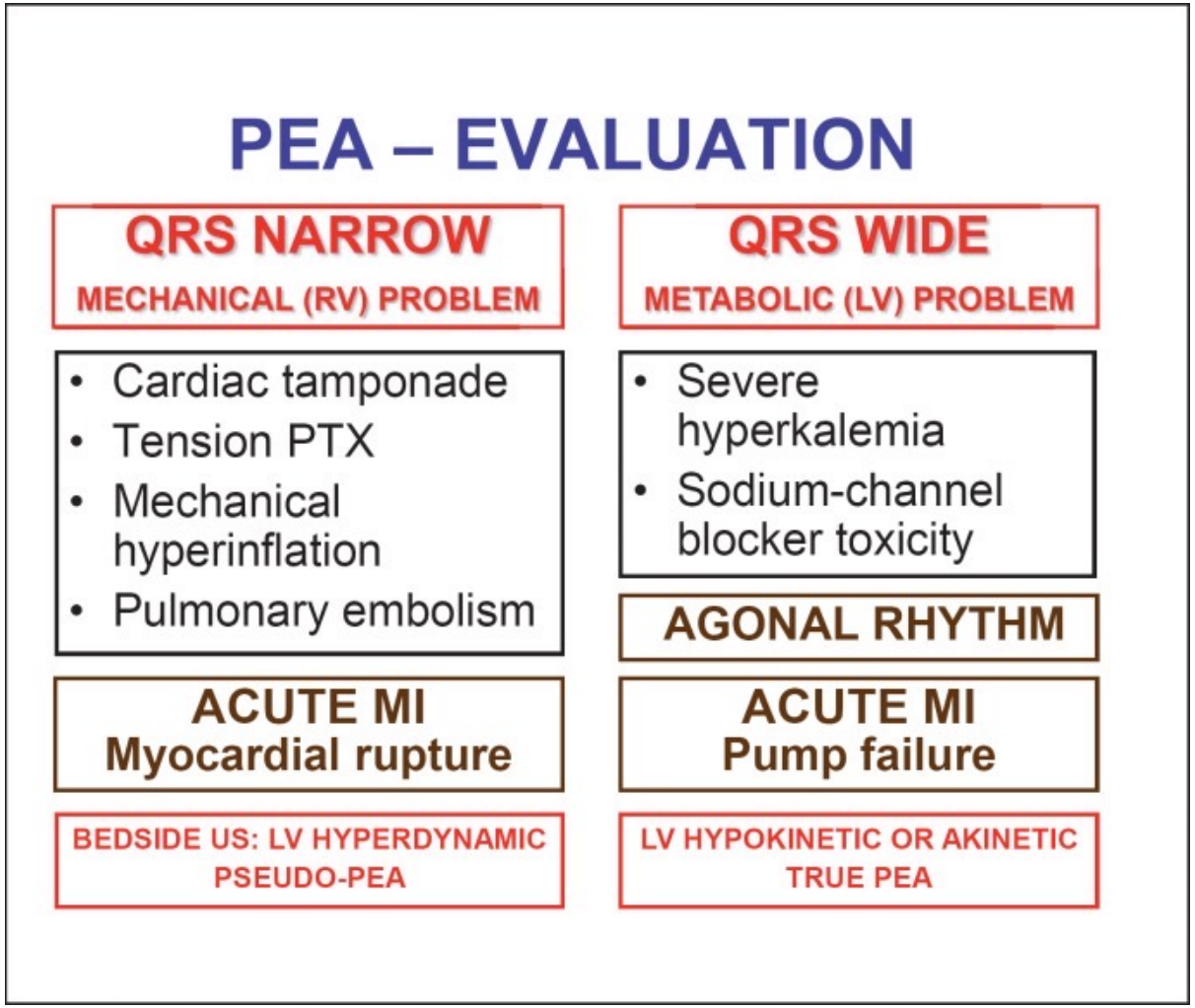
Mechanisms of PEA

- Electromechanical Dissociation
  - Think of what would happen if the heart muscles, but not the nerves, run out of ATP (or O2, or any other reagent)
- The extreme of shock
  - BY DEFINITION: this is shock so severe you can’t palpate a pulse. No BP criteria is needed
  - Beware of an art line telling you they have a BP of 40/20. If you can’t feel the pulse, that is not sufficient to perfuse and you should start compressions.

Forget the H's and T's

- Littman Approach
- Left column (narrow QRS) requires a mechanical fix
- Right column requires a medical fix

- doi: 10.1159/000354195



Scenarios

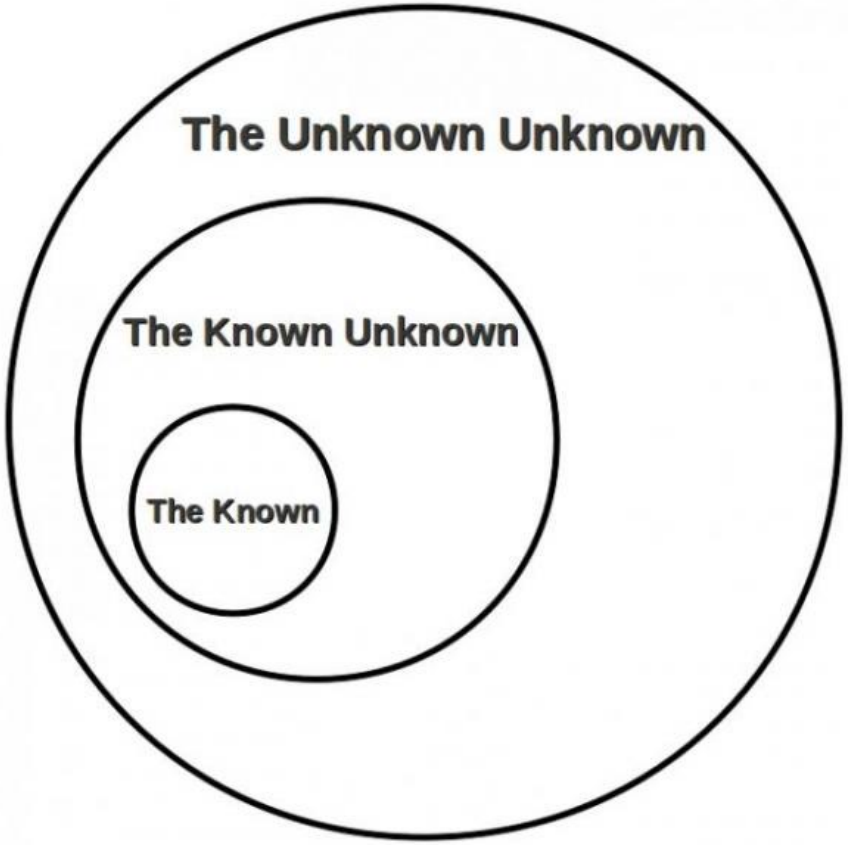
- Patient is 90 years old, has a single BP of 75/60. Is mentating ok, making good urine, lactate is normal. RRT is called. You see that the blood pressure cuff is clearly too large. You have them swap it out and the measured blood pressure is now normal without intervention.

- How do you address the RN that called the RRT?

Scenarios

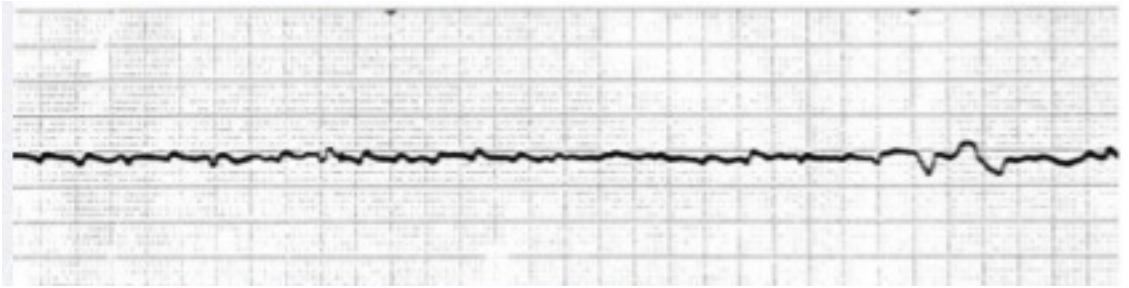
Try your best not to implicitly snark people for ‘over-reacting’. Why?

- People at lower levels of training are going to be less accurate at identifying big problems.
- To avoid errors of not calling a code/RRT, we need to tolerate errors of calling excessive codes/RRTs



Scenarios

- Pulse check
- What do you do?

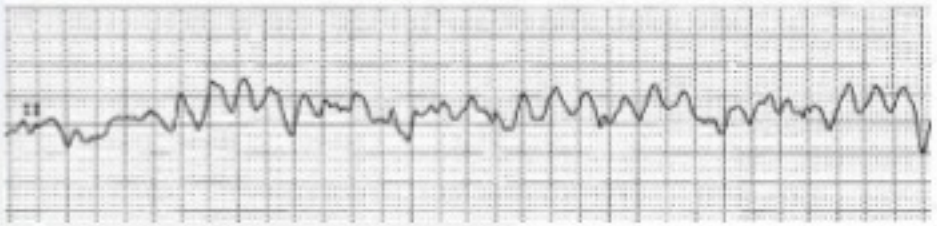


Scenarios

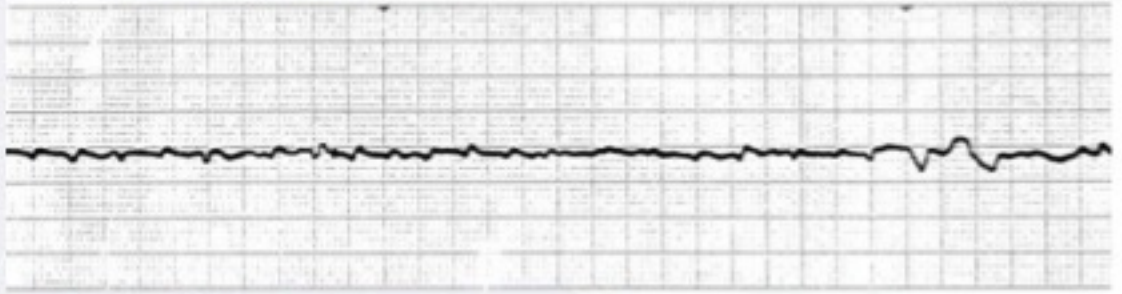
- Pulse check
- What do you do?

Ventricular Fibrillation

- Types
  - Coarse VF
    - Amplitude of > 3mm



  - Fine VF
    - Amplitude < 3mm
    - May be very difficult to differentiate from asystole



Scenarios

- Young patient with AIDs becomes hypokalemic and arrests. You code for a very long time and are not successful in getting ROSC.
- Eventually, you call the code. As soon as action stops, there is a very uneasy calm in the room and no-one is sure what to do next.

Debrief

- Thank you everyone for their efforts.
- “We’ll debrief in 5 minutes at the nursing station”

Summary Points

- “I’m <Name>, the resident on the code team. Who is running this code?” ”Can I take over?”
- Stand at the foot of the bed. Don’t move and don’t do tasks.
- Set the tone; give encouragement to sharing information/suggestions
- Keep the big picture in mind and use your social capital there:
  - Code: High quality compressions; shock if shockable
  - RRT: Is this a code? Does this patient need to go to the ICU?

Questions?

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