

LEADING CARDIAC ARREST RESUSCITATION

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- Cardiac arrest resuscitation is stressful, high stakes & requires coordination/leadership. Using a **PHYSICAL & TEMPORAL** structured approach can help smoothly lead resuscitation & rapidly identify/treat reversible causes of cardiac arrest.
- This OnePager assumes proficiency with ACLS algorithms; the purpose is not *what* to do, but how to do it *smoothly*.

THE FIRST MINUTE / ACLS FUNDAMENTALS

Perform a 5 second scan of the room: take mental note of circumstances: patient, equipment, team present. If you can't tell who is in charge, probably no one is...

Take charge/Set the tone: (5 seconds) "I'm ____ and I'm running this code"

Initial actions: ABCDEs for the code leader (the next 50 seconds)

A irway	"What airway do we have?"	Make eye contact & ensure that someone is assigned to each crucial role
B reathing	"Are we able to ventilate?"	
C ompressions	Is CPR adequate? Who is "on deck"	
D efibrillation	"Rhythm" & "are defib pads attached"	
E pinephrine (medications)	Do we have vascular access? Epinephrine (it is first in all ACLS algorithms) Other medications depending on rhythm.	

SUMMARY/TEAM UPDATE

Periodically, **Summarize** the situation, interventions performed, & working diagnosis.

"We're on cycle 2 of a PEA arrest, our working diagnosis is septic shock, we've given Epi once"

DIFFERENTIAL

Consider the **differential diagnosis** & potential treatments
Verbalize this thought process for team situational awareness

	DIAGNOSIS	INTERVENTION
<u>H</u> ypoglycemia	Blood glucose	D50W
<u>H</u> yperkalemia <u>H</u> ypokalemia	ABG, Chem10	Calcium, Insulin, D50W, others Potassium (if $K < 2$ mEq/L)
<u>H</u> +	ABG/VBG	NaHCO3
<u>H</u> ypoxemia	ABG/VBG	Intubation, oxygenation, <u>PEEP, etc</u>
<u>H</u> ypothermia	Core Temp	Active rewarming
<u>H</u> ypovolemia	POCUS, CBC	IVF, transfusions
<u>T</u> ension PTX	POCUS	Needle decompression, CT, <u>thoracostomy</u>
<u>T</u> amponade	POCUS	Pericardiocentesis
<u>T</u> hrombosis (PE, MI)	POCUS	Thrombolysis
<u>T</u> oxins	Med list, exam	Naloxone, other antidotes (TCA --> bicarb? CCB --> calcium?, etc)
<u>T</u> rauma	Exam, U/S, Hb	Chest tube, transfusion, ? procedures

SUMMARY/REASSESS

- Airway – definitive airway plan?
- Breathing – what is the ETCO2?
- Compressions – is CPR adequate?
- Defib – is pt an ECLS candidate?
- Medications – are specific tx indicated? Bicarb? Glucose?

PHYSICAL STRUCTURE & TEAM ROLES

PROCEDURE/POCUS

The **POCUS operator** can help to identify the etiology of arrest & perform essential procedures. A protocolized exam (e.g. CAUSE exam) should be used. Use a sub-xiphoid view Do NOT interrupt CPR. The **POCUS operator** should communicate findings to the team. IO access is usually the best, fastest to obtain.

THE CODE LEADER

The CODE LEADER is tasked with **thinking & leading** but should NOT be perform hands on tasks. Their primary focus is on providing clear concise direction to the team. The leader should address team members by name & have closed loop communications.

The CODE LEADER can be a physician or nurse. Delegate if needed in another role.

Effectiveness of CPR drops dramatically over time. Consider changing the person performing compressions **every** cycle. Have a relief person "on deck" Adequate CPR achieves ETCO2 > 20 mmHg, DBP > 20 mmHg, CPP > 25. (CPP = DBP – RAP)

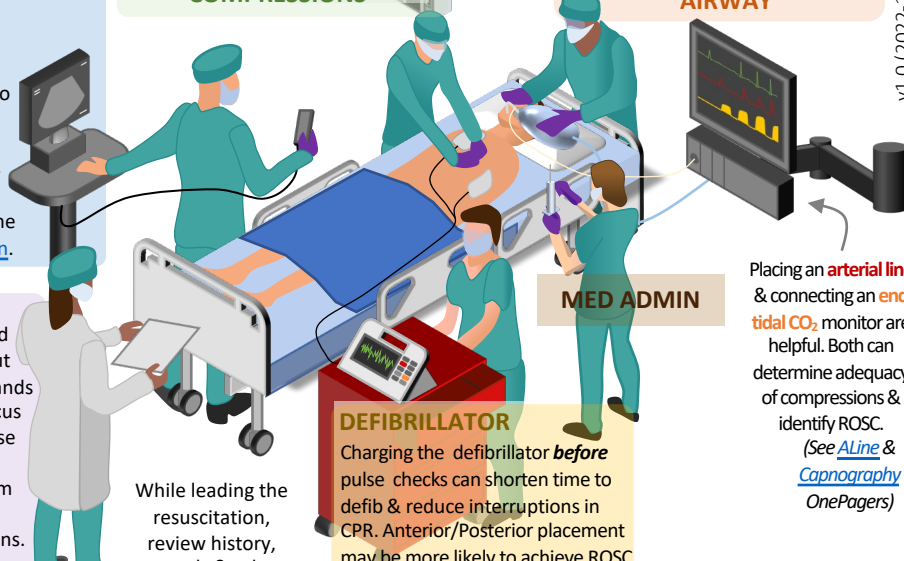
The CODE LEADER should assess the adequacy of CPR & give feedback

COMPRESSIONS

Review active infusions & stop any infusions that may have contributed to arrest.

Do NOT stop compressions to intubate. If unable to promptly place ETT, place a supra-glottic airway. Make sure all team members are wearing appropriate PPI.

AIRWAY



MED ADMIN

Placing an **arterial line** & connecting an **end tidal CO2** monitor are helpful. Both can determine adequacy of compressions & identify ROSC. (See ALine & Capnography OnePagers)

DEFIBRILLATOR

Charging the defibrillator **before** pulse checks can shorten time to defib & reduce interruptions in CPR. Anterior/Posterior placement may be more likely to achieve ROSC

While leading the resuscitation, review history, meds & ask bedside team about context.

TERMINATION OF EFFORTS

- ETCO2 < 10 mmHg after > 20 min of CPR
- Duration of arrest > 30 min without ROSC
- Severe acidosis/hyperkalemia (pH < 6.8, K > 10)
- Lack of cardiac motion on TTE (adjunct)

Consider family presence

Summarize & ask for suggestions, if none discontinue

TEMPORAL STRUCTURE

SUMMARY DIFFERENTIAL SUMMARY DIFFERENTIAL

CYCLE 1 CYCLE 2 CYCLE 3 ... CYCLE n

← 2 min → Shock if indicated ← Minimize interruptions in CPR

FAMILY PRESENCE IN RESUSCITATION

Family presence during CPR can be traumatic. If done well family presence reduces the incidence of anxiety & depression.

A team member should be assigned to support the family, explaining what is going on. Family should initially be removed from the room then **invited** to return to the room if willing.

ROSC vs TERMINATION OF EFFORTS

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