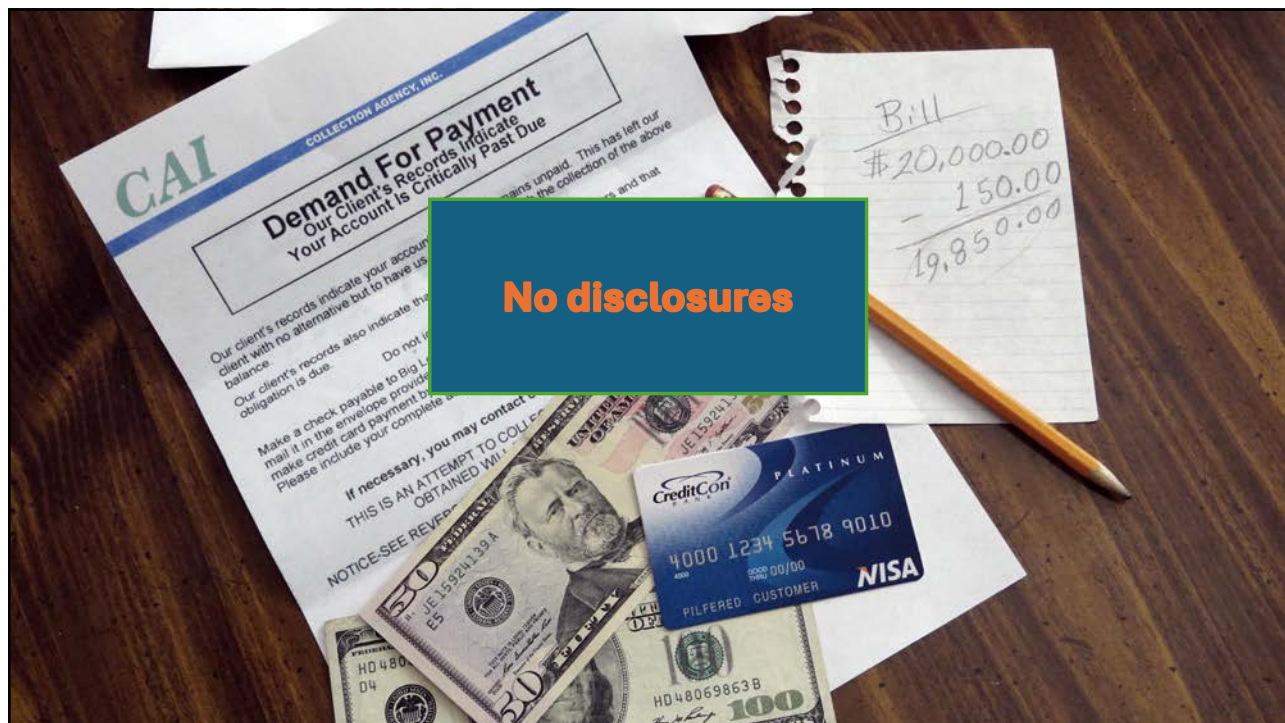




1



2

→ **Create** an approach:
“plan, prepare, & practice”

→ **Review** crisis
management

→ **Discuss**
post-arrest procedures



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3

Introduction



Sicker



Retention on CPL for CY 2024	
Description	
wr jaw w/graft	
wr jaw w/o fixation	
ict shoulder joint	
ict shoulder joint	
f hip tendons	
ict ankle joint	
trnspl knee w/scpe	
wrls p-art prs snr	
ovras vena cava filtr	
thyroid surgery	
, not leiomyomata	
ely payable dental surgical procedures	

↑Complexity



↑ Arrests

Mendez et al Beckers ASC 2024

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4

Cardiac arrest incidence—surgical patients

2008-2012 ACS NSQIP

- Intra-op 0.03%
- Post-op 0.33%
- 30-day death 1.25%

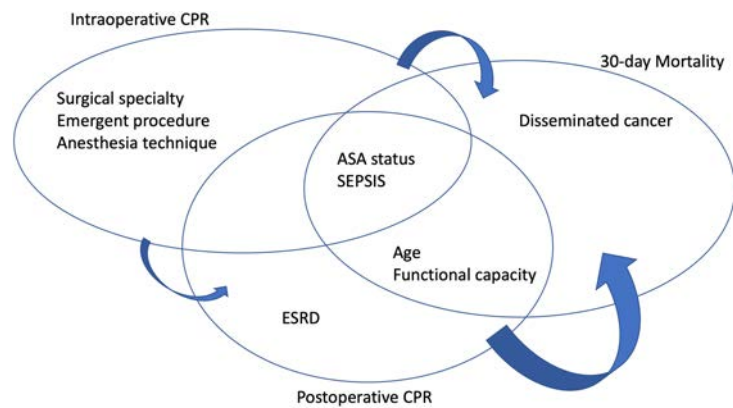


Fig 2. Schematic summary of the 5 main factors for prediction of intraoperative CPR, postoperative CPR, and 30-day mortality.
<https://doi.org/10.1371/journal.pone.0225939.g002>
 Kaiser et al 2020

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5

Cardiac arrest in surgical patients

Heinkelbein 2017

TABLE I.—Common situations and problems associated with perioperative cardiac arrests in adults [modified from Moitra et al.³].

Anesthesia-related problems

- Anesthetic drug overdose (e.g., inhalation or intravenous)
- Neuraxial block with sympathicolysis
- Systemic toxicity of local anaesthetic drugs
- Malignant hyperthermia
- Drug administration errors
- Respiratory problems
- Hypoxemia
- Severe bronchospasm
- Cardiovascular problems
- Vasovagal syncope
- Hypovolemia
- Gas embolism
- Acute electrolyte imbalances
- Transfusion-related complications
- Acute coronary syndrome
- Pulmonary embolism
- Severe pulmonary hypertension
- Pacemaker malfunction
- Prolonged Q-T syndrome
- Oculo-cardiac reflexes
- Electroconvulsive therapy (e.g., bradycardia, asystole)
- Tako-Tsubo Syndrome
- Severely reduced blood flow (acute reduced blood flow)
- Increased intra-abdominal pressure
- Tension pneumothorax
- High positive end-expiratory pressure
- Surgical maneuvers

All
Are
At
Risk

6

What we know

- Quick response = 10 seconds
- Brain death occur within 4-6 min



Reynolds 2011
Perlman 2023

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7

Plan, Prepare, Practice

"Best offense is a strong defense"

Uebele AORN 1986



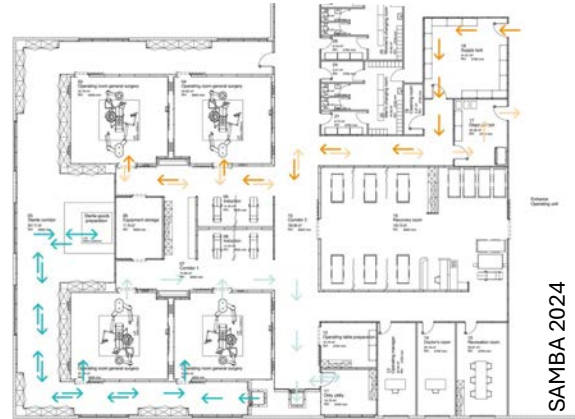
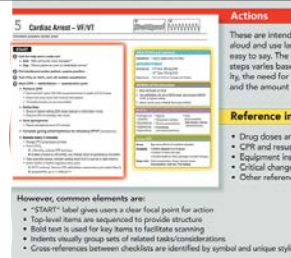
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8

Plan

- Facility layout
- Protocols
- Resources



9

Plan

- Staff competencies
- Emergency equipment



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Staff competencies

- Education & Training
 - BLS, ACLS, PALS
 - Certification/Licensure
- Evidence-based & frequent

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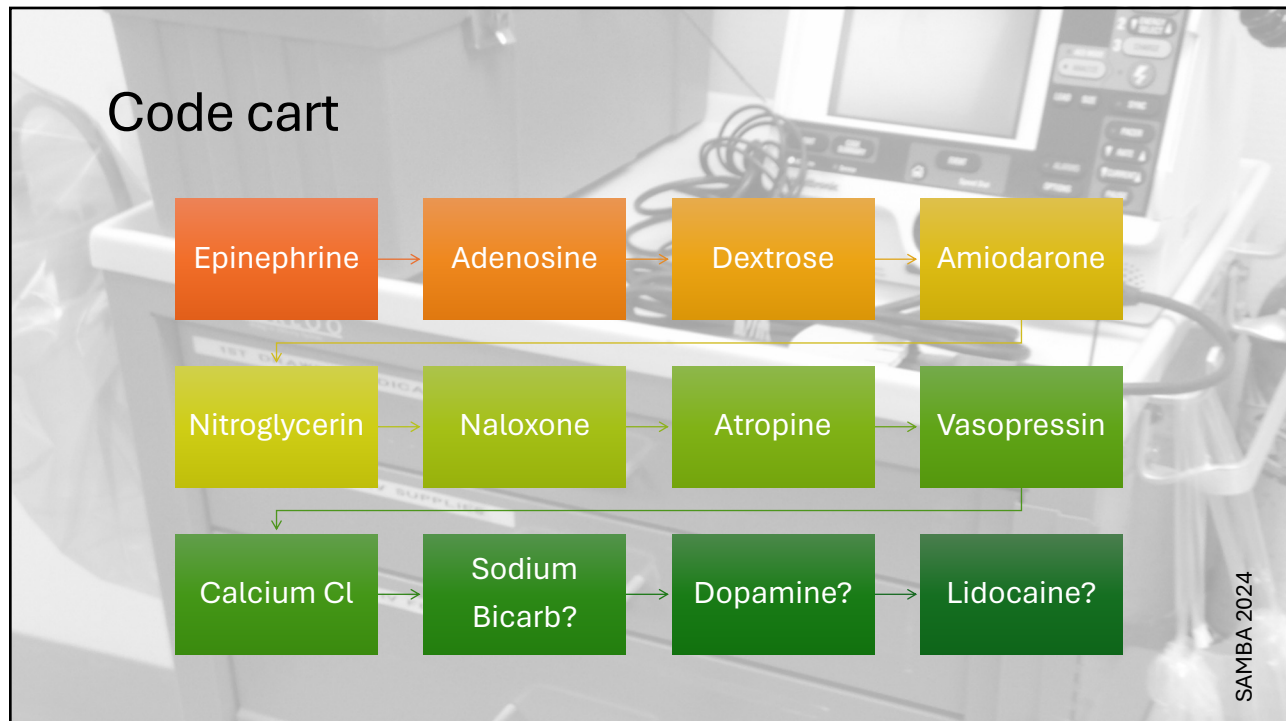
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Emergency equipment

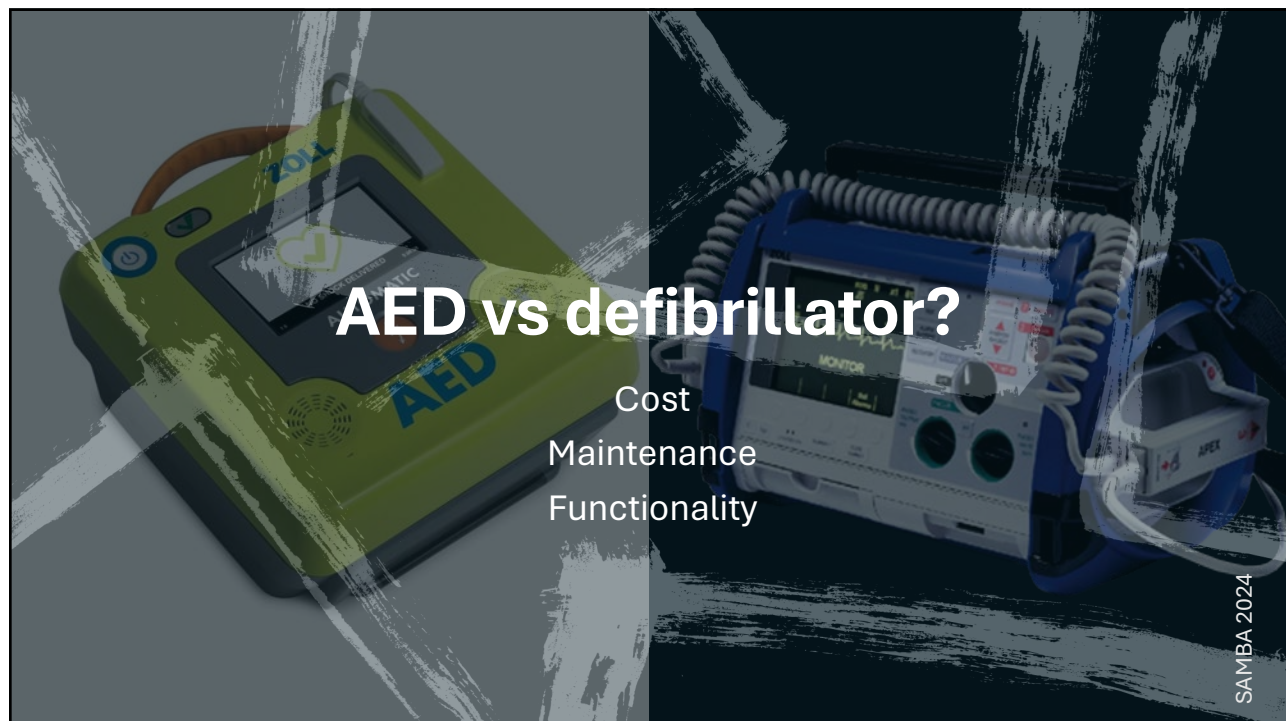


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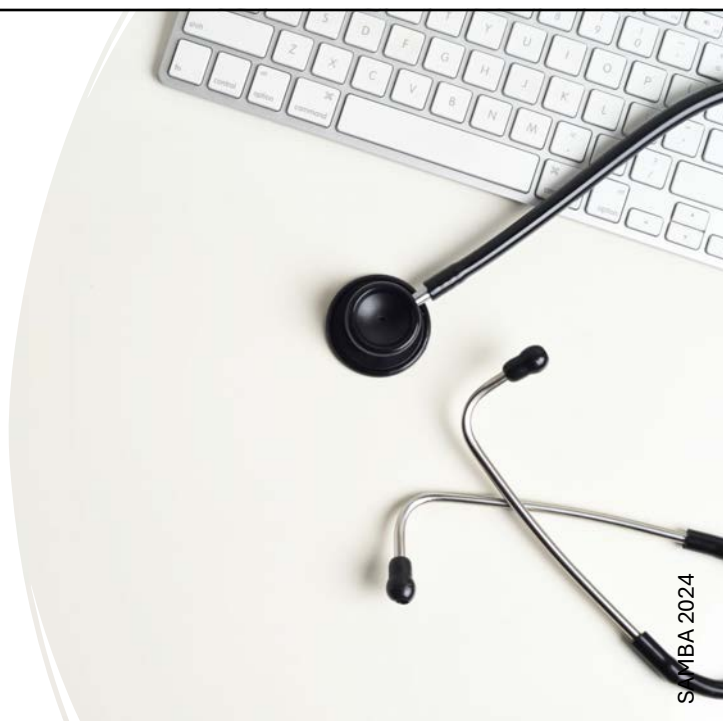
13



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Prepare

- Post cognitive aids
- Create a “code team”
- Assign roles
- Obtain & maintain hospital affiliation
- Routine equipment maintenance



15

Practice



Conduct mock
code drills



Pre-procedure
screening



Use protocols to
manage crisis

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Mock drills

- Simulation
 - Demonstrate & Practice
 - Familiarize
 - Identify problems
 - Debrief
- ↓Anxiety & fear



17

Pre-procedure screening

- Identify at-risk patients:
 - ASA PS III+
 - Social hx
 - Previous cardiac issues
 - Family h/o sudden cardiac death



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Protocols

- Identify impending crisis
 - Appearance
 - Patient complaints
 - Vital signs
- Who to contact
- How to escalate care



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Crisis management

- Consider location
- Quickly assign roles
- Minimize chaos & disruption



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TABLE 3. Surgical Team Member Responsibilities During a Cardiopulmonary Arrest¹⁻⁵

Code leader (eg, anesthesia professional, surgeon)	Surgeon	RN circulator	Scrub person	Residents, physician assistants, RN first assistants	OR manager or charge nurse
- Initiates and evaluates interventions - Identifies cardiac rhythm - Assigns and defines clear tasks - Fulfills other roles as needed - Reviews events after the arrest - Reviews and finalizes code documentation and electrocardiogram strips	- Closes the wound if possible - Assists with repositioning the patient, if needed, to facilitate cardiopulmonary resuscitation (CPR) - Performs chest compressions as needed - Leads the code if necessary - Fulfills other roles as needed	- Retrieves the emergency cart - Assists with repositioning the patient, if needed, to facilitate CPR - Notifies the OR manager or charge nurse of the arrest and requests assistance - Informs the code leader when tasks begin and end - Controls traffic in the room - Helps maintain the accuracy of surgical counts - Helps maintain the sterility of the surgical field - Performs chest compressions as needed - Documents all interventions and events	- Maintains the sterility of the surgical field and site - Packs or covers the surgical incision per the surgeon's directions - Helps maintain the accuracy of surgical counts - Performs chest compressions as needed - Performs tasks as assigned by the code leader	- Performs tasks as directed by the code leader - Assists the RN circulator as needed - Performs chest compressions as needed	- Assigns additional personnel to assist - Notifies the operations administrator of the arrest - Assists with the arrest in whatever way is needed - Revises the immediate surgical schedule if necessary

Borrowed from:
Murdock DB. AORN J. 2013

21



Intra-op cardiac arrest

- Vital sign monitoring & PIV ✓
- “Witnessed”
- Temporize/stop surgery
- Reposition to supine
- Secure airway

Moltra VK Anesth Analg 2018.

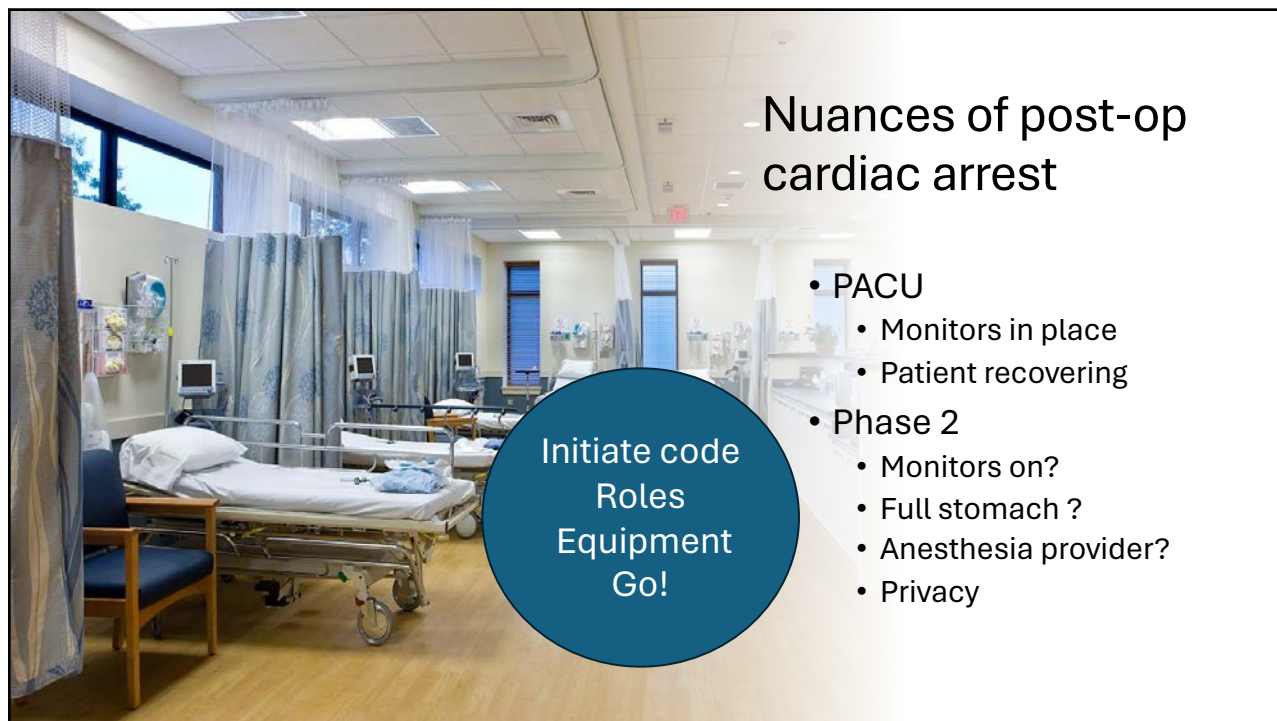
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Treat suspected cause concurrently w/ ACLS

- LAST
- Neuraxial anesthetic
- Anaphylaxis
- Respiratory
- Cardiac
- Malignant hyperthermia

Moitra 2018, Moitra 2012

23



Nuances of post-op cardiac arrest

- PACU
 - Monitors in place
 - Patient recovering
- Phase 2
 - Monitors on?
 - Full stomach ?
 - Anesthesia provider?
 - Privacy

Initiate code
Roles
Equipment
Go!

24

Post-arrest management

- Follow facility policies
- Contact affiliated hospital for transport **OR**
- Call EMS



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Post-arrest procedures

- Documentation
 - Patient medical record
 - QI
 - Governing body of the ASC
- Debrief
- Resume schedule



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