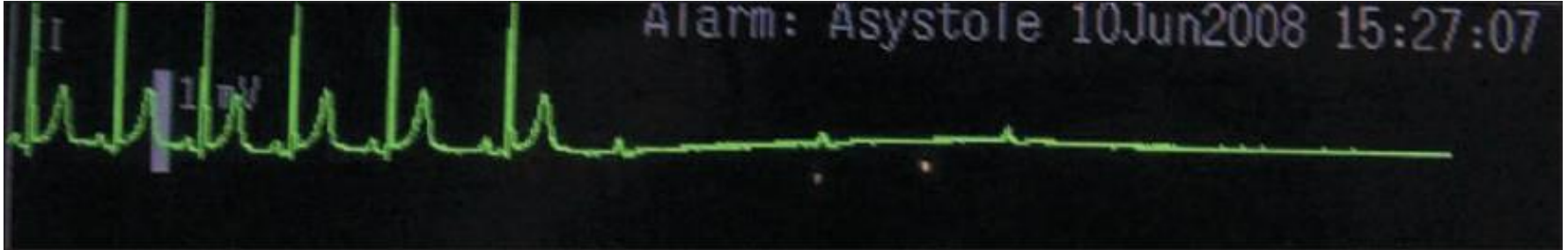


Phases of Cardiac Arrest

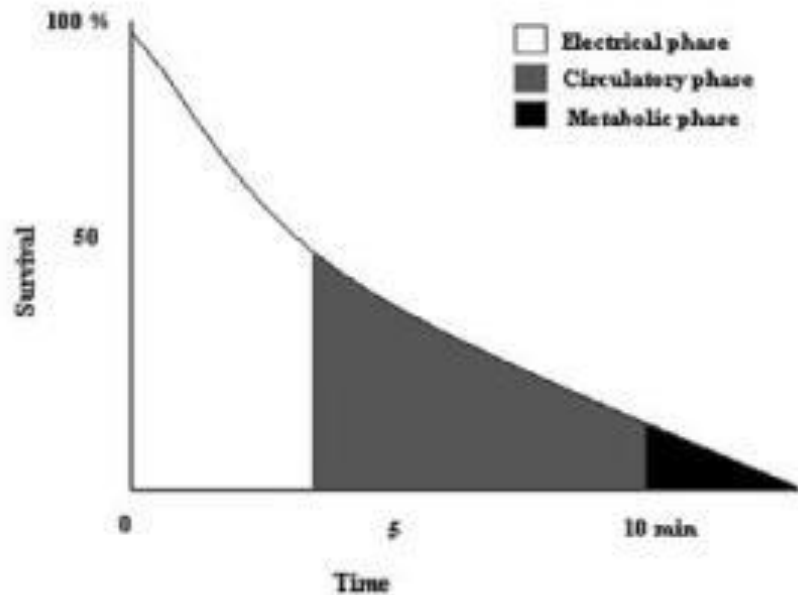


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Faculty Disclosures

Michael A. Jasumback does not have any conflicts of interest (commercial, financial, or scientific) now or within the last 12 months related to this topic

Figure 2. Graphic Representation Of The 3-Phase Time Sensitive Model Of Cardiac Arrest



This model predicts 50% survival rate for defibrillation provided in the electrical phase where electrical phase = 0 to 4 minutes, circulatory phase = 4 to 10 minutes, and metabolic phase > 10 minutes (based on the model described by Weisfeldt and Becker. JAMA. 2002).

Why do I Care?

It informs the sequence of events of a resuscitation

The phase of cardiac arrest determines the interventions most likely to result in successful resuscitation

It defines modern cardiac arrest management

Etiology of Sudden Cardiac Death

Table 3. Etiologies of Sudden Cardiac Death

Etiology	Frequency
Coronary Artery Disease Acute Coronary Syndrome Chronic Myocardial Scar	Approximately 80%
Cardiomyopathies Dilated Cardiomyopathies Hypertrophic Cardiomyopathies	Approximately 10% to 15%
Uncommon Causes Valvular/Congenital Heart Disease Myocarditis, Genetic Ion-Channel Abnormalities, etc.	< 5%

Adapted and modified from Myerberg et al. Am J Cardiol. 1997;80:10F-19F and Huikuri HV et al. N Engl J Med. 2001;345:1473-1482

The phases

Electrical

Circulatory

Metabolic

The Electrical Phase



0-4 Minutes



Defibrillation
Bystander CPR

Electrical
Phase:
The
Sequence



Early
Defibrillation

AED



Bystander CPR
(Hands Only)



What if they
are gasping?

GOOD prognostic
indicator

START or
RECOMMEND
STARTING CPR!

The Circulatory Phase



4-10 Minutes



CPR

Circulatory
Phase:
The
Sequence

CPR

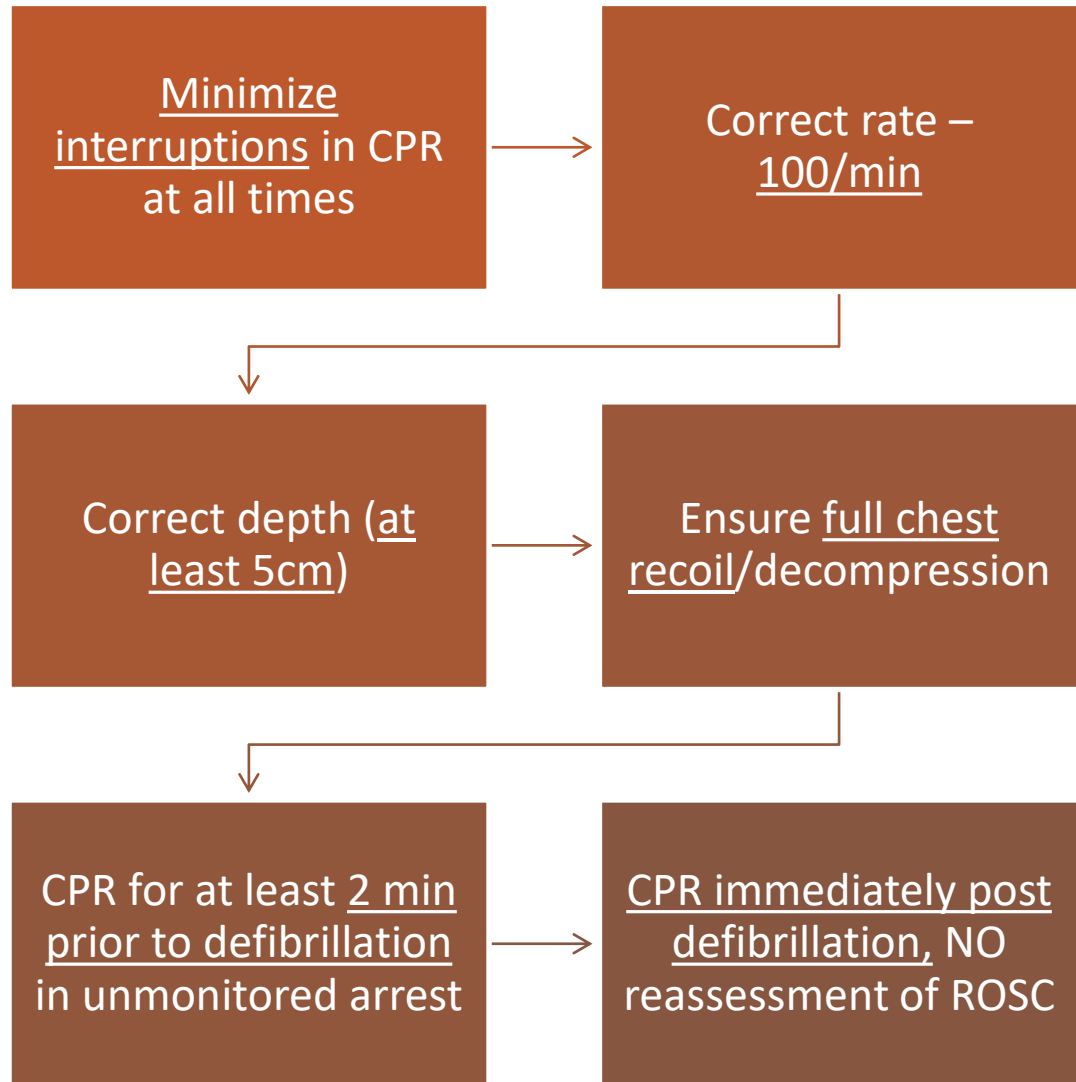


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graph TD; A[CPR] --> B[Defibrillation]
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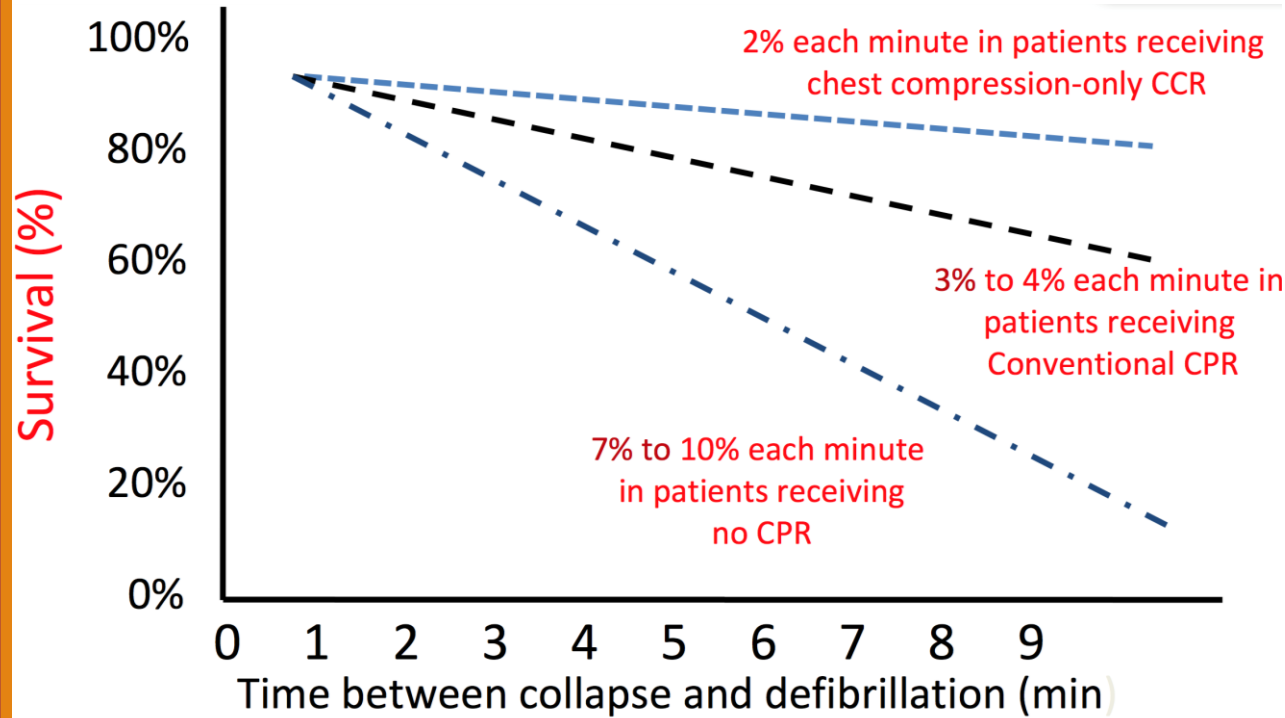
A flowchart consisting of two rectangular boxes. The top box is a medium brown color and contains the text 'CPR' in white. A thin brown arrow points downwards from the bottom center of this box to the top center of the bottom box. The bottom box is a darker brown color and contains the text 'Defibrillation' in white.

Defibrillation

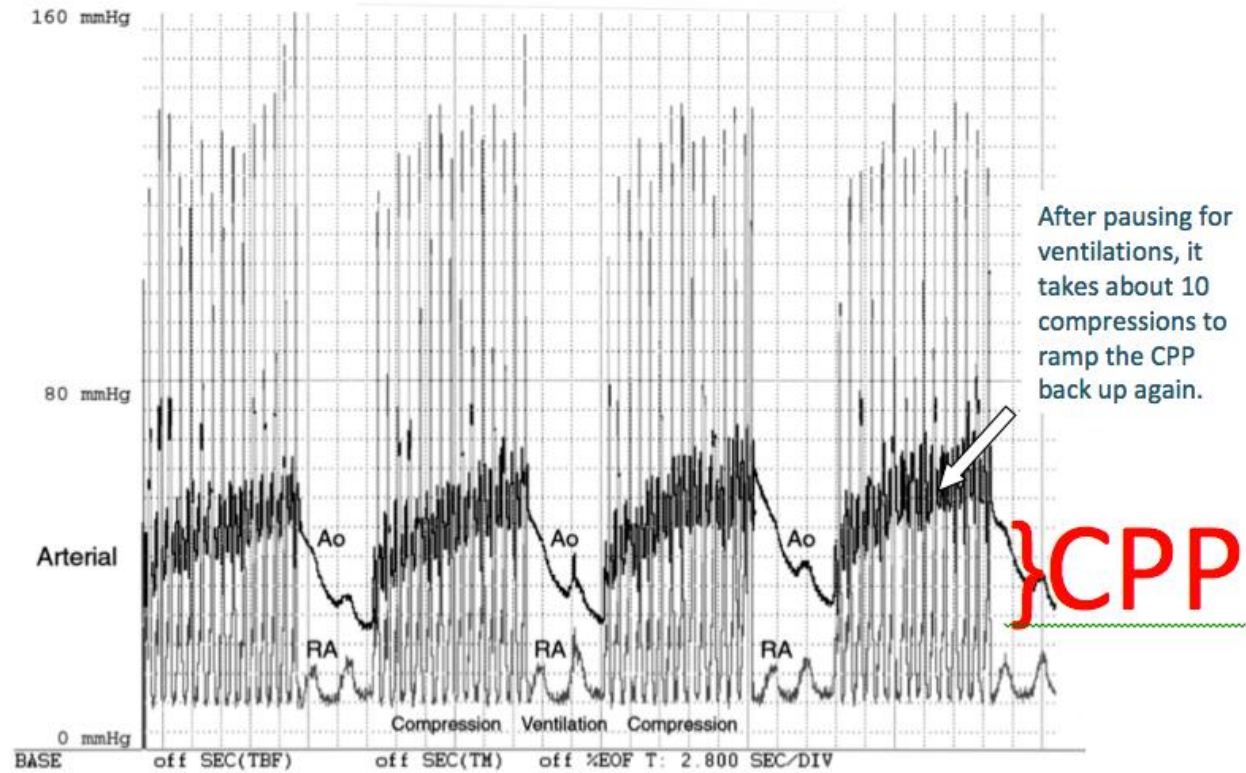
Good CPR



Why?



Why?



Metabolic Phase



10 Minutes and
Beyond



Oxygenation
Ventilation
?Meds

Metabolic
Phase:
The
Sequence

Oxygenation/Airway

Ventilation/ NOT
HYPERVENTILATION

Medications

Oxygenation/ Airway



Compared to BVM-
No significant benefits
from:



Endotracheal
Intubation



Supraglottic Airway

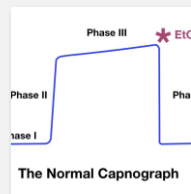
Ventilation



10 BPM!



Passive oxygenation?



End Tidal

Medications



Epinephrine



Antiarrhythmics



Bicarbonate



Calcium

Ultimately

“As noted in the ACLS portion of the 2010 guidelines,

CPR and defibrillation

are the only therapies associated with improved survival in patients with VF/pVT.”