

# WEBINAR ON ESSENTIAL STEPS INTO MANAGEMENT OF OBSTETRIC EMERGENCIES-ESMOE

## Maternal Collapse Management

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# Causes of Maternal deaths for 2020, 2021 and 2022, and triennium

Primary obstetric problem	Number MDs (%) 2020 N= 1197	Number MDs (%) (2021) N=1489	Number MDs (%) (2022) N=969	Number MDs (%) (2020-2022) N=3655
Medical and surgical disorders	183 (15.3)	190 (12.8)	140 (14.4)	513 (14.0)
Non-pregnancy-related infections*	322** (27)	561 (37.7)***	180 (18.6)****	1063 (29.1)
Ectopic pregnancy	36 (3)	33 (2.2)	34 (3.5)	103 (2.8)
Miscarriage	49 (4.1)	54 (3.6)	63 (6.5)	166 (4.5)
Pregnancy-related sepsis	63 (5.3)	68 (4.6)	56 (5.8)	187 (5.1)
Obstetric haemorrhage	200 (16.7)	237 (15.9)	162 (16.7)	599 (16.4)
Hypertensive disorders of pregnancy	185 (15.5)	188 (12.6)	166 (17.1)	539 (14.7)
Anaesthetic complications	21 (1.8)	17 (1.1)	39 (4.0)	77 (2.1)
Adverse drug reactions	13 (1.1)	6 (0.4)	7 (0.7)	26 (0.7)
Embolism	33 (2.8)	43 (2.9)	40 (4.1)	116 (3.1)
Acute collapse - cause unknown	15 (1.3)	36 (2.4)	21 (2.2)	72 (2)
Miscellaneous	4 (0.3)	3 (0.2)	8 (0.8)	15 (0.4)
Unknown	73 (6.1)	53 (3.6)	53 (5.5)	179 (4.9)

• Includes Covid 19 deaths

\*\*Includes 124 Covid deaths in 2020

\*\* \*Includes 369 Covid deaths in 2021

\*\*\*\*12 deaths from Covid in 2022

# Resuscitation Avoidable Factors and level of care (SM 2020-2022)

Description	CHC	DH	RH	TH	NCH	Pvt	Outside	All
Lack of information	19	96	82	91	36	30	31	385
Not attempted	30	164	183	118	49	24	133	701
Assessable cases	50	474	851	666	340	189	78	2648
No avoidable factor	34	260	555	470	258	136	66	1779
<b>% unavoidable cases</b>	<b>68.0</b>	<b>54.9</b>	<b>65.2</b>	<b>70.6</b>	<b>75.9</b>	<b>72.0</b>	<b>84.6</b>	<b>67.2</b>
Avoidable cases	16	214	296	196	82	53	12	869
<b>Distribution of avoidable factors</b>								
Airway problems	31.3	19.6	18.2	20.4	18.3	18.9	25.0	19.4
Breathing problems	31.3	32.2	33.1	27.6	32.9	54.7	8.3	32.6
Circulation problems	56.3	51.9	51.7	51.0	50.0	35.8	58.3	50.6
Drug problems	18.8	12.1	6.1	3.1	3.7	1.9	8.3	6.7
Investigation problems	6.3	7.9	5.4	4.6	3.7	1.9	8.3	5.5
Monitoring problems	6.3	20.6	11.8	13.3	3.7	11.3	25.0	13.6



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# Aims

To understand Basic Life Support (BLS) - according to the American Heart Association (AHA) guidelines of 2010

- To be able to rapidly assess **C**irculation
- To understand how to treat a circulatory problem
- To be able to assess **A**irway and **B**reathing
  
- To be able to open and maintain the airway and to assist breathing
- To develop advanced airway management skills

# Further Aims

- To understand the special significance and difficulties involved in resuscitation of pregnant AND postnatal patients
- To practise and develop the skills of cardiopulmonary resuscitation (CPR) and defibrillation

# Circulation, Airway, Breathing (CAB)

Done in this order now because studies show that the critical initial elements of BLS are immediate chest compressions and early defibrillation

# Cardiac Arrest Associated With Pregnancy

NB: after 20 weeks the gravid uterus may compress the inferior vena cava and/or aorta, impeding venous return and compromising cardiac output

- The gravid uterus limits effectiveness or success of resuscitation
- MUST shift uterus to one side — can do this manually or use a rolled blanket under R hip = **Mrs TILT**

# Cardiovascular Life Support in Pregnancy - Considerations

- Functional residual capacity is decreased and oxygen demand is increased so be prepared to support oxygenation and ventilation
- Mother must be resuscitated or chances of fetal survival vanish so use vasopressor drugs as indicated for the mother
- Secure airway as soon as the circulation is established because of the increased risk of regurgitation (but do not delay chest compressions)



# Notes on Emergency Hysterotomy/CS and Delivery of Fetus

- This is the resuscitation team leader's decision.
- Aggressive procedure.
- Delivery is only indicated to assist resuscitation of the mother and not to save the baby.
- You will lose mother and baby if cannot restore blood flow to mother's heart within 5 minutes!

**COLLAPSED PATIENT**

Call – a - **CAB**

**RAPID ASSESSMENT – SHAKE & SHOUT**  
Responsive, Pulse, Breathing

**Mrs TILT**

**Unresponsive**  
**No pulse**  
**No breathing**

**Unresponsive**  
**Pulse present**  
**No/laboured breathing**

**Decreased level of consciousness**  
**Pulse present**  
**Breathing present**



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# Assessment of a Critically ill or Collapsed Patient

- Immediate rapid assessment

Always:

- Response, pulse, airway, breathing

# 1. The Unresponsive Patient

- Feel for the carotid pulse and if not definitely found within 10 seconds
- **Start cardio-pulmonary resuscitation (CPR)**
- Immediate activation of emergency system:
  - \*Call for help – CALL-a-CAB
  - \*Retrieve resuscitation equipment
  - \*Defibrillator

# Pulseless

Apply continuous CPR

Assess the heart rhythm using ECG/CPR paddles

Decide on diagnosis: ventricular tachycardia (VT), ventricular fibrillation (VF), asystole or pulseless electrical activity (PEA)

# Details of Defibrillation

- Significant survival benefit with single shock compared with 3-stacked protocol (previous protocol)
- Immediate resumption of chest compressions better than another shock if defibrillation fails
- Monophasic - 360 J. If not effective, maintain CPR and repeat defibrillation after 2 minutes or 5 cycles with 360 J. (Biphasic – 200 J or according to manufacturers specification)

# VF or VT

Defibrillate

Reshock in 2 minutes

At 4 minutes consider delivery

Essential that continuous CPR provided

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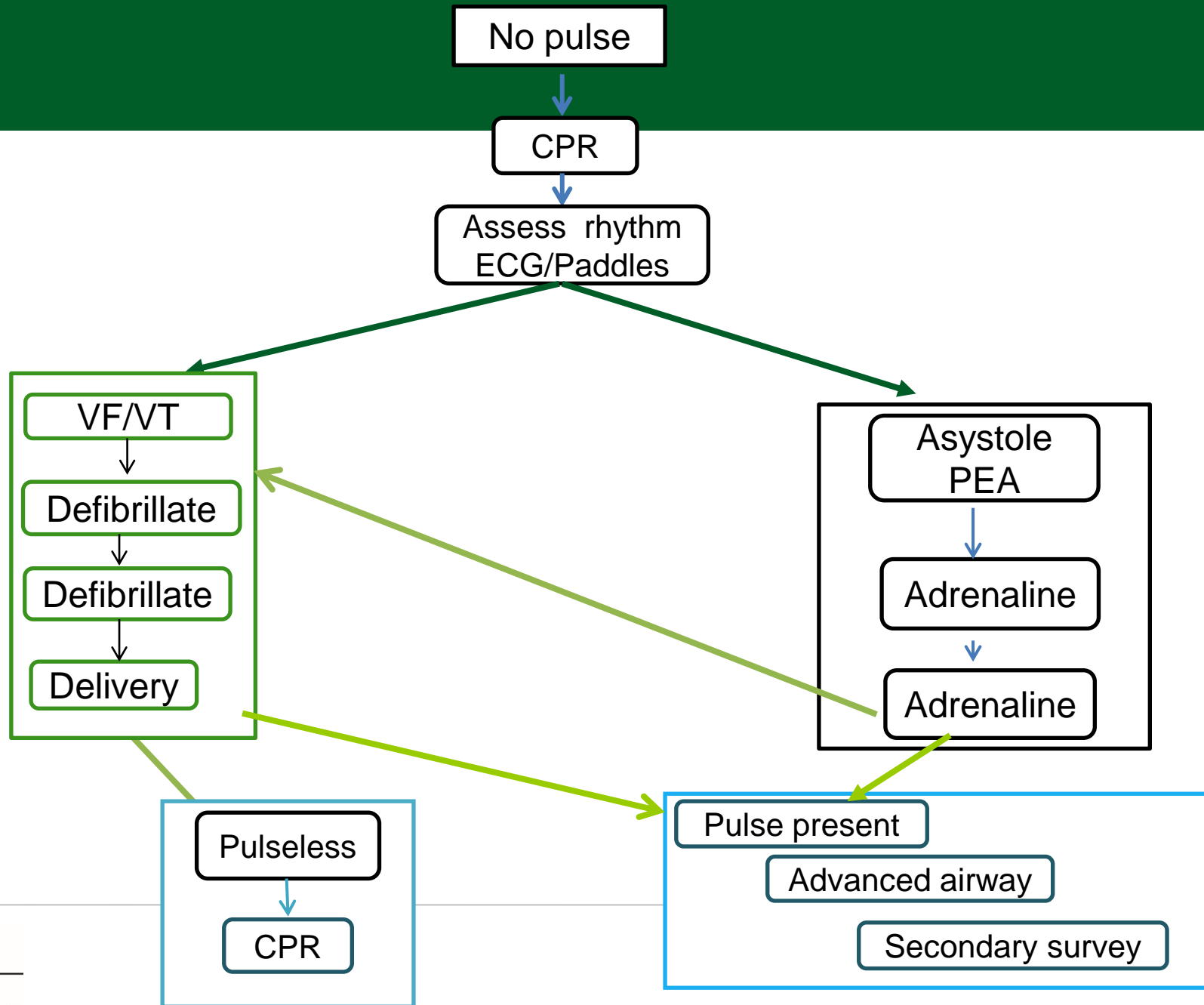
# High Quality CPR

- Chest compressions of adequate rate (at least 100/min) and depth (at least 5 cm)
- Allow chest recoil between compressions but also minimize interruptions between compressions
- Reduce time delay between defibrillation shocks and chest compressions

# BLS: .....

## Perform chest compressions and ventilation

- If possible, or with assistance,
- 30 compressions to 2 ventilations
- Alternate resuscitators every 2 minutes or 5 cycles



# Asystole

- 1mg adrenaline IV (repeat 3-5 min)
- Consider causes of cardiac arrest:

## FOUR Hs

- **H**ypoxia
- **H**ypovolaemia
- **H**yper/hypo K
- **H**ypothermia

## FOUR Ts

- **T**hromboembolism
- **T**oxicity
- **T**ension pneumothorax
- Cardiac **T**amponade

## 2. Breathing Inadequate or Stopped (Pulse Present)

- Secure airway
- Head tilt, chin lift, jaw thrust
- Most likely soft tissue (tongue) obstructing airway in an unconscious patient – insert an oro-pharyngeal airway (OPA)
- The above manoeuvres will lift the tongue and reduce obstruction.

# Head Tilt - Chin Lift



# Airway and Breathing

- Give oxygen
- Connect pulse oximeter



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# Bag + Mask Ventilation



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# OPA Size

- Measure from: Corner of the mouth to the tragus of ear
- Size 3 (orange coloured) or 4 fits most females

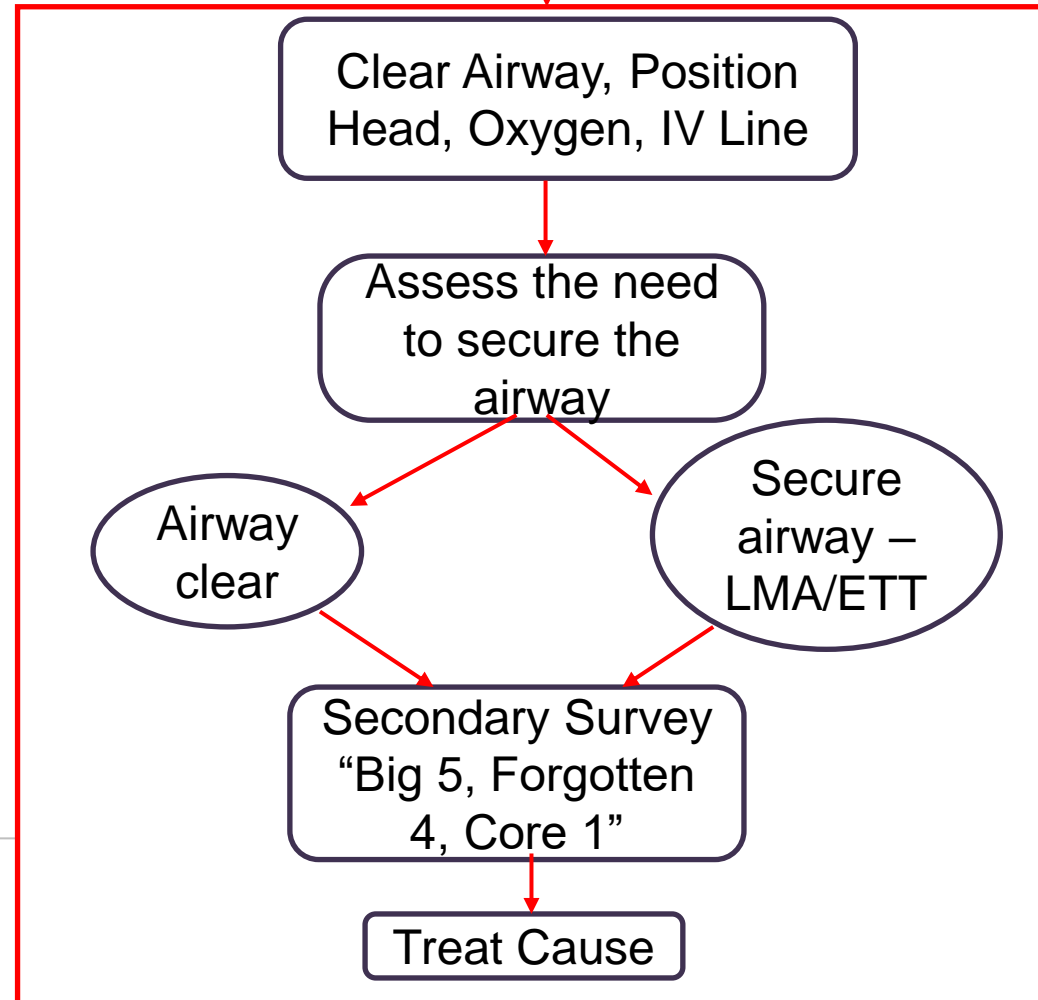


# OPA Insertion - Commonest Method

- Initially facing upwards, then turn to fit pharynx at end of the hard palate



Unresponsive,  
pulse present,  
no/laboured breathing



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# 3. The Collapsed/Unconscious Patient

You decide patient has not arrested, is breathing but  $\pm$  responsive

There is a carotid pulse and breathing has not stopped

# The Unconscious Patient

A decreased level of consciousness is a marker of an insult to the brain e.g.  
lack of oxygen

Lack of oxygen to the brain results from either reduced blood flow or reduced  
oxygen content

# Grading: Reduced Level of Consciousness

- ✓ **A** - Alert
- ✓ **V** - not alert but responds to Voice
- ✓ **P** - no response to voice, but responds to Pain
- ✓ **U** - no response to pain - Unresponsive

# Management of Reduced Level of Consciousness

- Get help
- Place on her side
- Check circulation, pulse and BP
- Manage airway and give oxygen
- Get IV access
- Assess pupils

# Recovery Position

Note: Pregnant women should be turned onto their sides



**Responsive,  
Pulse present**

Recovery position,  
Oxygen,  
IV Line

Secondary Survey  
“Big 5, Forgotten 4, Core 1”

Treat  
Cause



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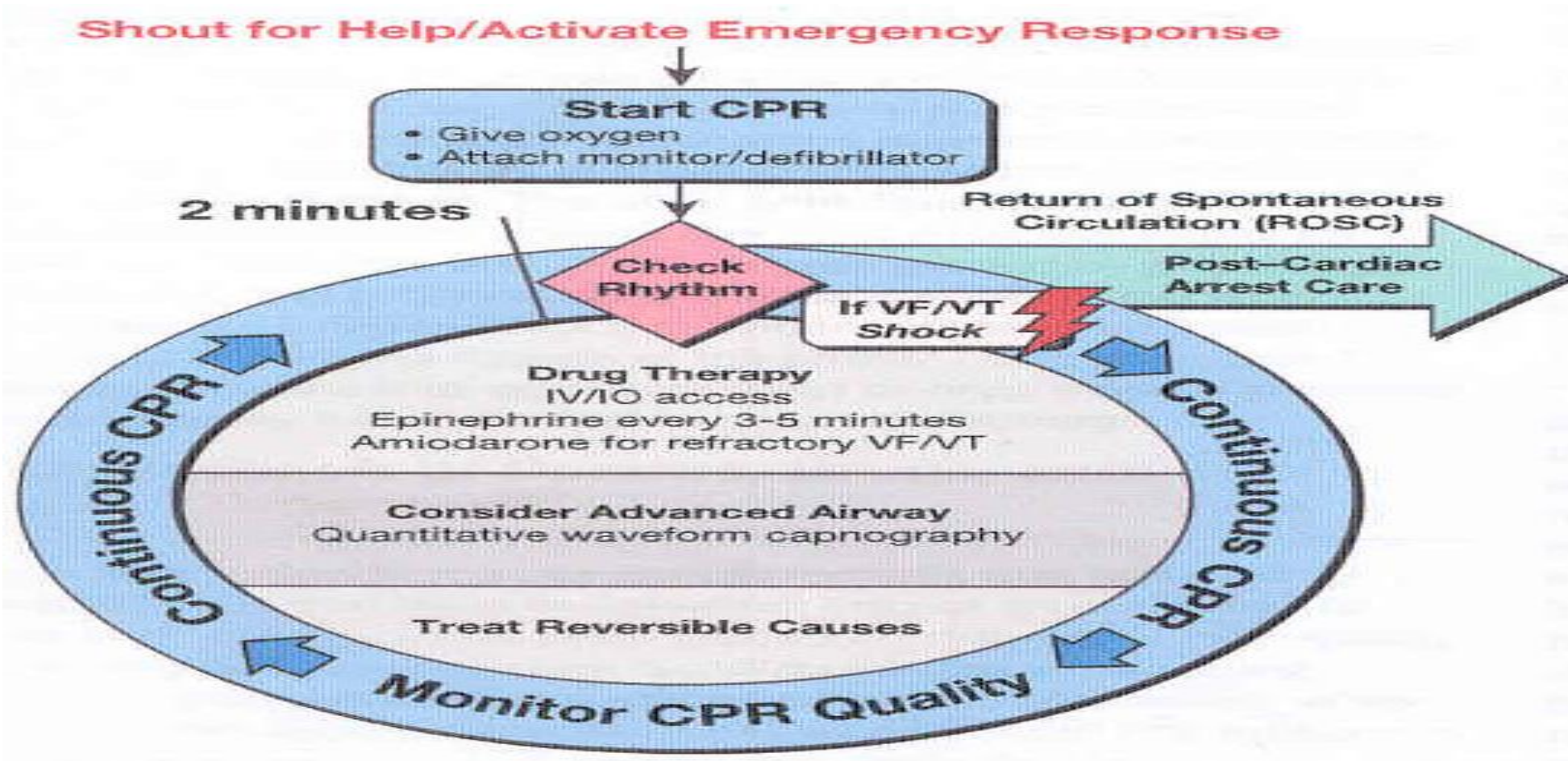
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# Ongoing Monitoring

- Blood pressure
- Pulse rate
- Respiratory rate and oxygen saturation
- Urine output
- Temperature
- Use Early Warning Chart

# Summary of Advanced Life Support



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# New Medication Protocols (2010)

- According to 2010 protocol drug therapy: Adrenaline iv 1 mg every 3-5 minutes
- Atropine not recommended any more
- iv=intravenous

# Equipment



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# LMA Insertion

## Indications:

1. If oxygenation cannot be maintained with a face mask
2. No skilled person available to intubate



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# Intubation



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# Cricoid Pressure?

- Unconscious patient always has risk of regurgitation.
- 2010 AHA guidelines no longer recommend routine cricoid pressure.

## BECAUSE

- Although it can reduce risk of regurgitation, it can also impede ventilation or delay or prevent placement of advanced airway

## AND

- It is difficult to properly train rescuers in use of this manoeuvre



# Scenarios

For the practical contact session

- Advanced airway management
- Mask ventilation and cardiac compression
- Management of the unconscious patient
  - Defibrillation

# Post Cardiac Arrest Care

- Monitor patient to ensure maintenance of circulation and oxygenation
  - Avoid hyperventilation
  - Avoid hyperglycaemia
  - Avoid hyperthermia
- Transfer to appropriate critical care unit

# I Thank you all!





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