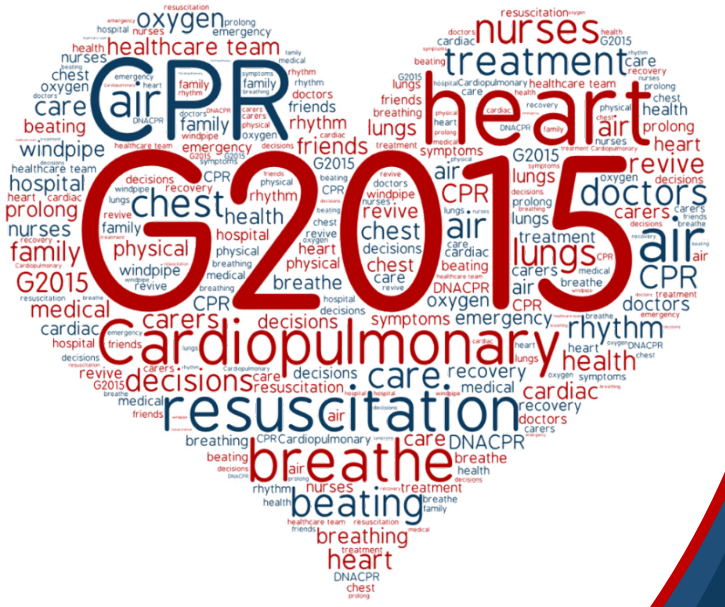
Scientific Symposium 2015



Advanced Life Support

Dr Jasmeet Soar

Resuscitation Council (UK)

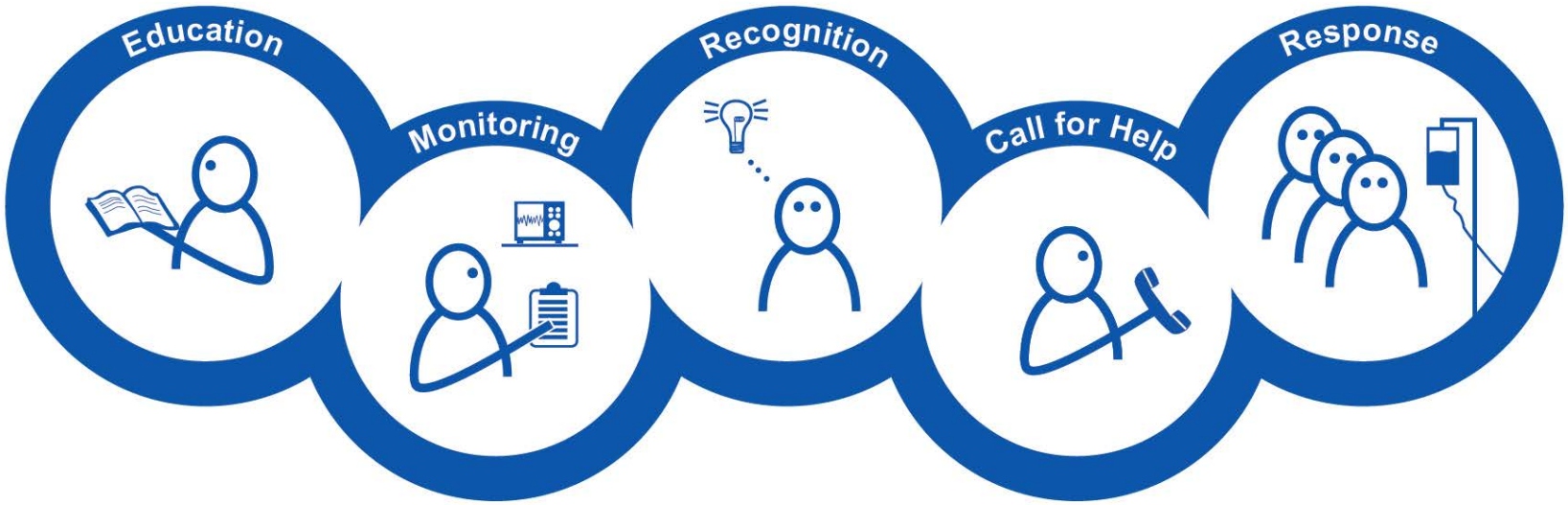
GUIDELINES 2015

NICE accredited

www.nice.org.uk/accreditation

Chain of Survival

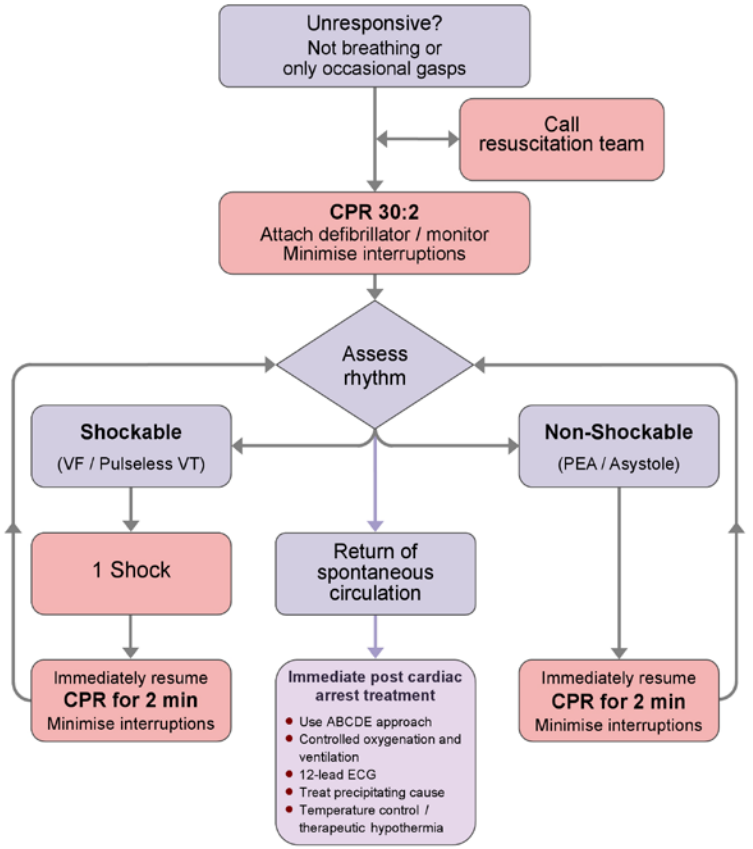
Chain of Prevention



The National Early Warning Score (NEWS)

PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
Respiration Rate	≤8		9 - 11	12 - 20		21 - 24	≥25
Oxygen Saturations	≤91	92 - 93	94 - 95	≥96			
Any Supplemental Oxygen		Yes		No			
Temperature	≤35.0		35.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥39.1	
Systolic BP	≤90	91 - 100	101 - 110	111 - 219			≥220
Heart Rate	≤40		41 - 50	51 - 90	91 - 110	111 - 130	≥131
Level of Consciousness				A			V, P, or U

Adult Advanced Life Support

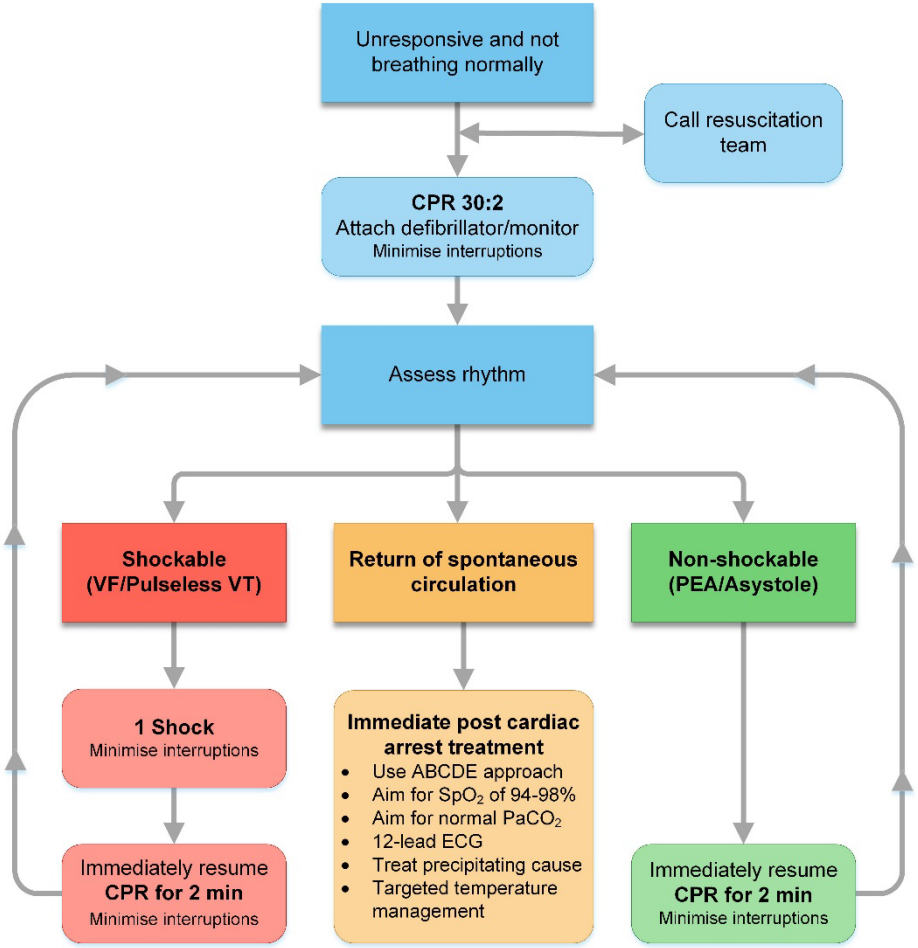


During CPR

- Ensure high-quality CPR: rate, depth, recoil
- Plan actions before interrupting CPR
- Give oxygen
- Consider advanced airway and capnography
- Continuous chest compressions when advanced airway in place
- Vascular access (intravenous, intraosseous)
- Give adrenaline every 3-5 min
- Correct reversible causes

Reversible Causes

- Hypoxia
- Hypovolaemia
- Hypo- / hyperkalaemia / metabolic
- Hypothermia
- Thrombosis - coronary or pulmonary
- Tamponade - cardiac
- Toxins
- Tension pneumothorax



During CPR

- Ensure high quality chest compressions
- Minimise interruptions to compressions
- Give oxygen
- Use waveform capnography
- Continuous compressions when advanced airway in place
- Vascular access (intravenous or intraosseous)
- Give adrenaline every 3-5 min
- Give amiodarone after 3 shocks

Treat Reversible Causes

- Hypoxia
- Hypovolaemia
- Hypo-/hyperkalaemia/metabolic
- Hypothermia
- Thrombosis - coronary or pulmonary
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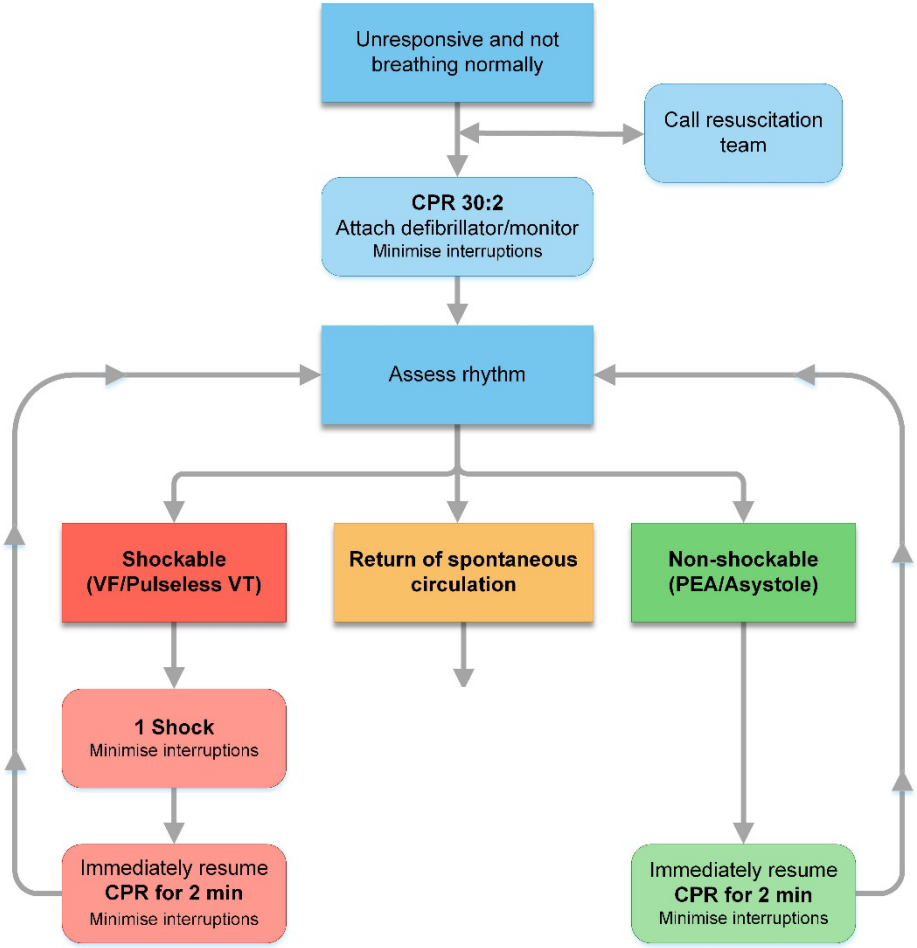
- Tamponade – cardiac
- Toxins

Consider

- Ultrasound imaging
- Mechanical chest compressions to facilitate transfer/treatment
- Coronary angiography and percutaneous coronary intervention
- Extracorporeal CPR


Unresponsive and not breathing normally
Call resuscitation team
CPR 30:2
Attach defibrillator/monitor
Minimise interruptions
Assess rhythm
Shockable (VF/Pulseless VT)
Return of spontaneous circulation
Non-shockable (PEA/Asystole)
1 Shock
Minimise interruptions
Immediately resume CPR for 2 min
Minimise interruptions
Immediately resume CPR for 2 min
Minimise interruptions

Unresponsive and not breathing normally

To confirm cardiac arrest…

- Patient response
- Open airway
- Check for normal breathing
  - Caution agonal breathing
- Check for signs of life

Unresponsive and not breathing normally

To confirm cardiac arrest…

- Pulse check if trained to do so
- Take less than 10 seconds for assessment
- Call for help early

Cardiac arrest confirmed

Unresponsive and not breathing normally

Call resuscitation team

Cardiac arrest confirmed

Unresponsive and not breathing normally

Call resuscitation team

CPR 30:2
Attach defibrillator/monitor
Minimise interruptions

Chest compression

- 30:2
- Compressions
  - centre of chest
  - 5-6 cm depth
  - 2 per second (100-120 min^{-1})
- Maintain high quality compressions with minimal interruptions (<5 s)
- Continuous compressions once airway secured
- Switch CPR provider every 2 min cycle to avoid fatigue

Chest compression

- 30:2
- Compressions
  - centre of chest
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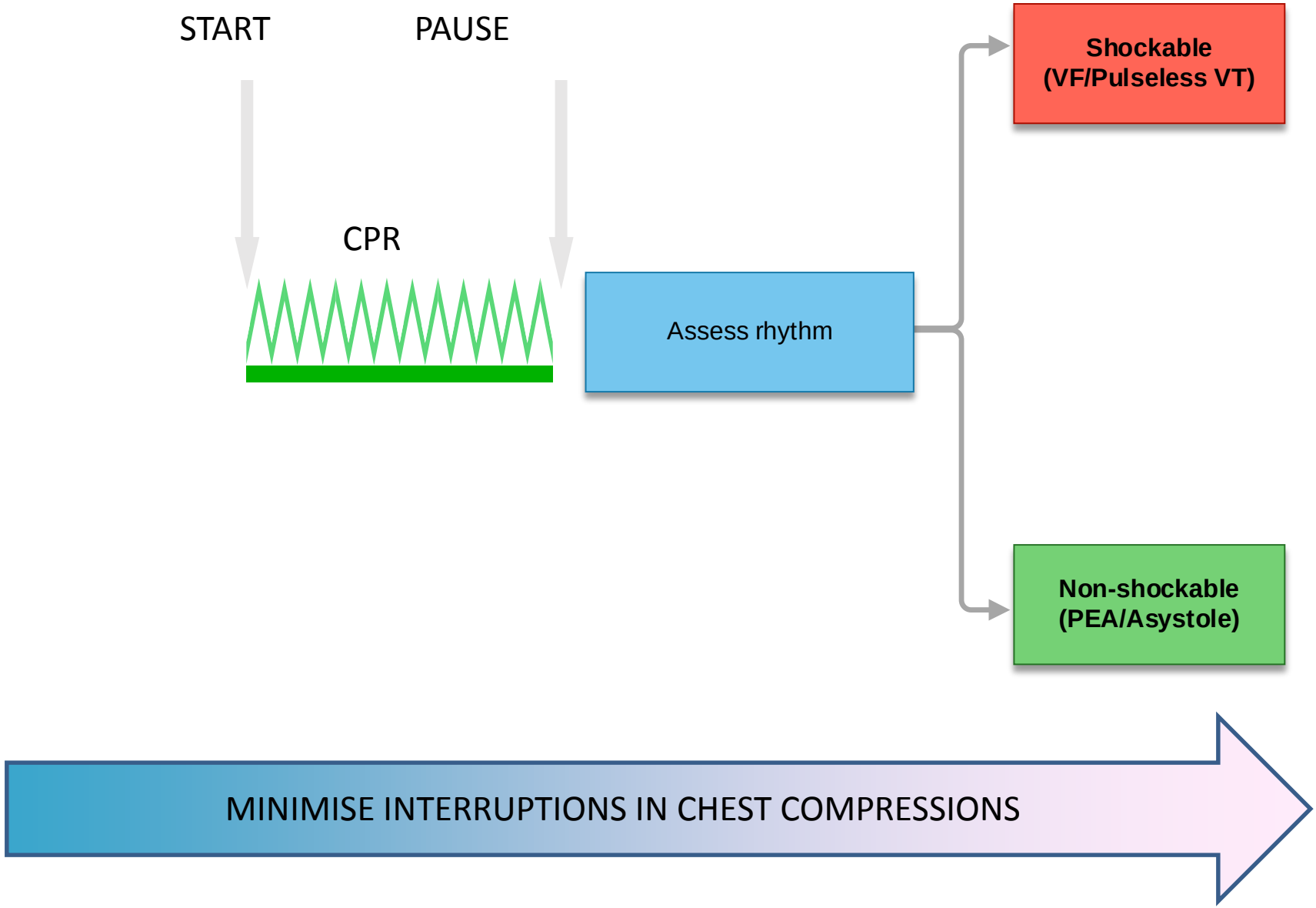
Less than 5 second pause in chest compression for:

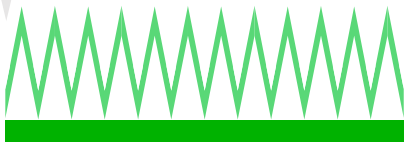
- Rhythm check
- Shock delivery
- Tracheal intubation


START
PAUSE
CPR
Assess rhythm
Shockable
(VF/Pulseless VT)
Non-shockable
(PEA/Asystole)
MINIMISE INTERRUPTIONS IN CHEST COMPRESSIONS

START

PAUSE

CPR



Assess rhythm

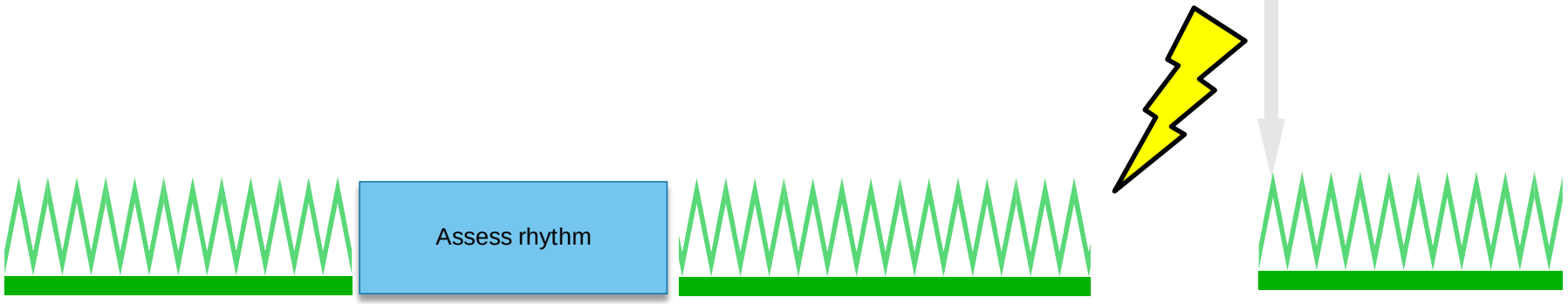
Shockable (VF/Pulseless VT)

Non-shockable (PEA/Asystole)

MINIMISE INTERRUPTIONS IN CHEST COMPRESSIONS

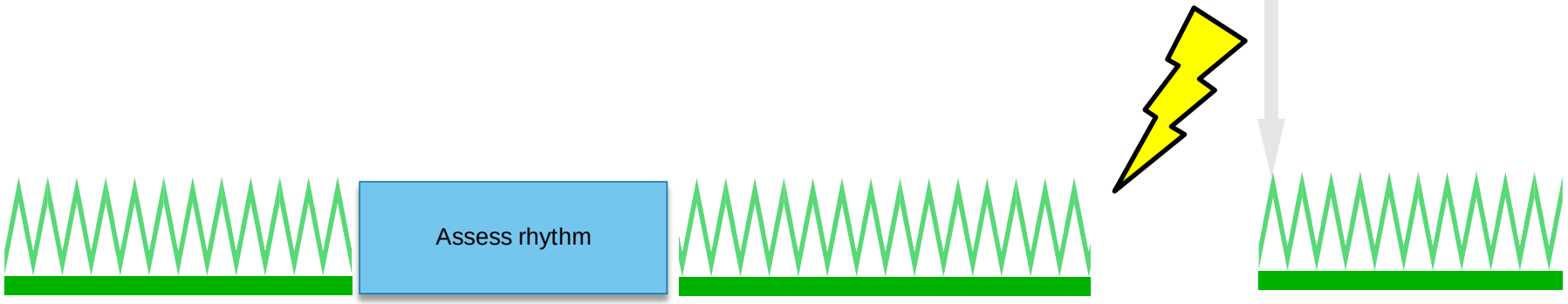
Shockable (VF/Pulseless VT)

IMMEDIATELY RESTART CPR



Shockable (VF/Pulseless VT)

IMMEDIATELY RESTART CPR



MINIMISE INTERRUPTIONS IN CHEST COMPRESSIONS

Shockable (VF/Pulseless VT)

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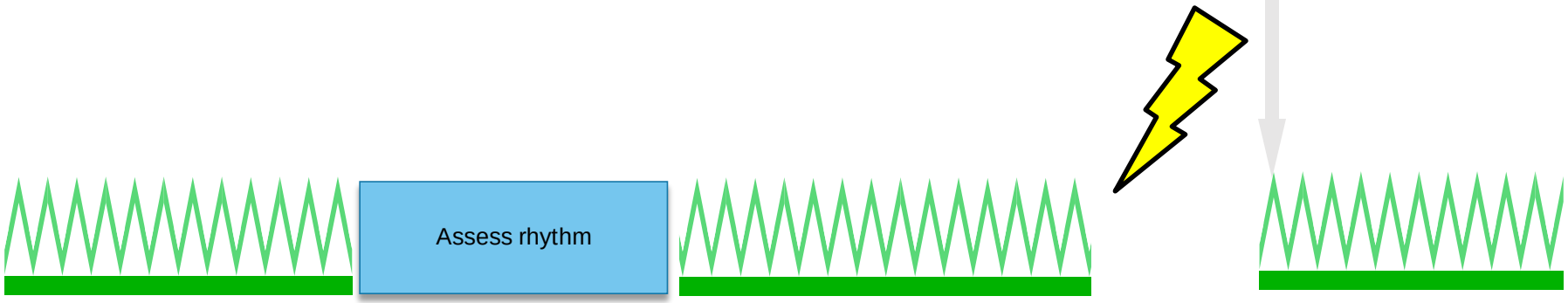
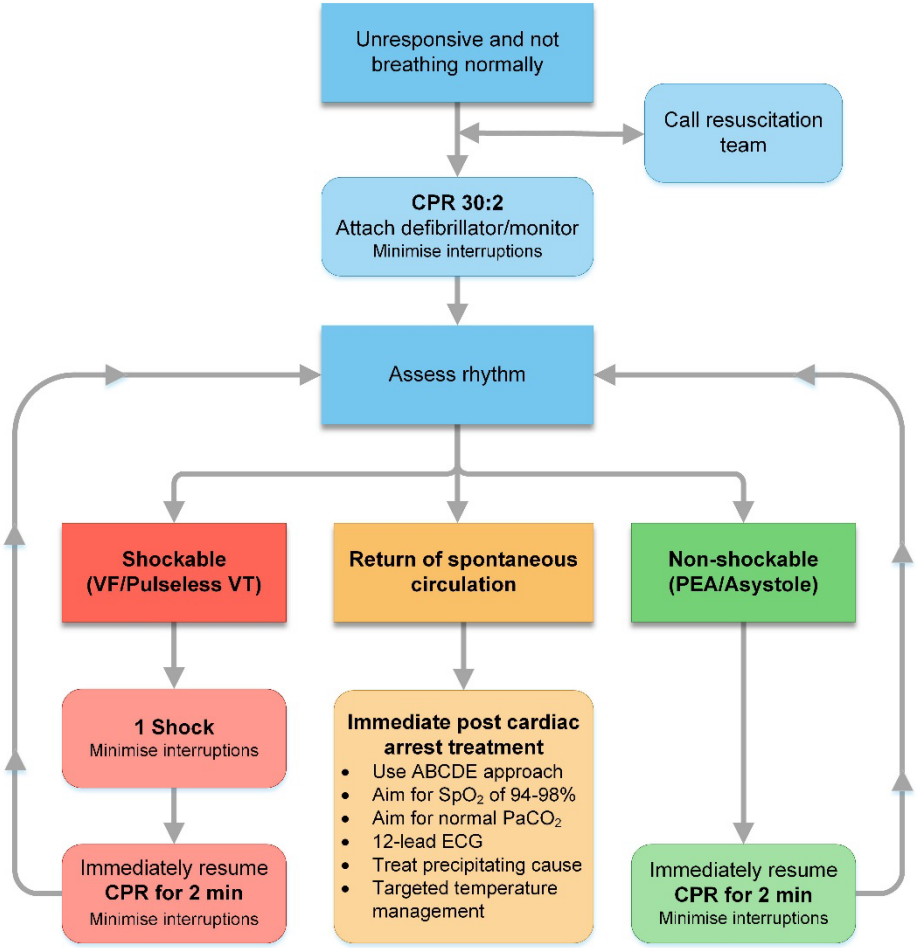


Less than 5 seconds

Less than 5 seconds

GUIDELINES 2015



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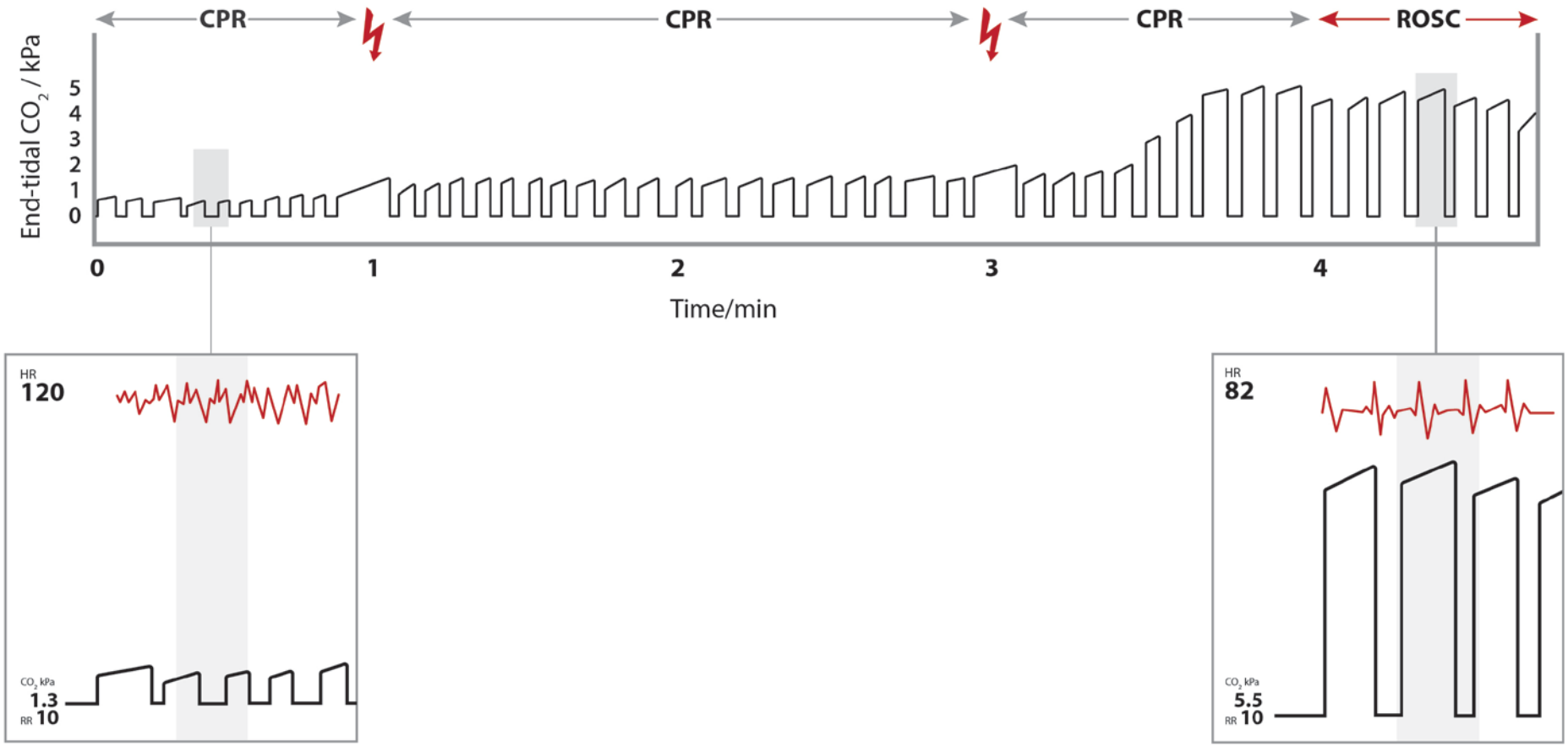
Waveform capnography

Information from waveform capnography during CPR

- Tracheal tube placement
- Guide to rate of ventilation
- Quality of chest compressions
- ROSC
- Prognostication

Example end-tidal CO_2 trace



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Information from waveform capnography during CPR

- **Tracheal tube placement**
- **Guide to rate of ventilation**
- Quality of chest compressions
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Airway and ventilation during CPR

- Stepwise approach according to rescuer/patient
  - Compression-only
  - Mouth-to-mouth
  - Mouth-to-mask
  - Bag-mask
  - Supraglottic airway device (e.g. LMA, i-gel)
  - Tracheal tube (videolaryngoscopy)

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  - Compression-only
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  - Bag-mask
  - Supraglottic airway device
  - Tracheal tube
  - 10 breaths/minute = continuous compressions

During CPR

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Vascular access

- Peripheral versus central veins

- Intraosseous

Vascular access

- Peripheral ve
  veins
- Intraosse

ROLE OF DRUGS LIMITED DURING CPR

Adrenaline & Amiodarone

- Adrenaline
  - Timings and dose not changed
  - Non-shockable – during CPR
  - Shockable – during third two minutes of CPR
  - Subsequent doses every 3 -5 min
- Amiodarone
  - After three shocks

Treat Reversible Causes

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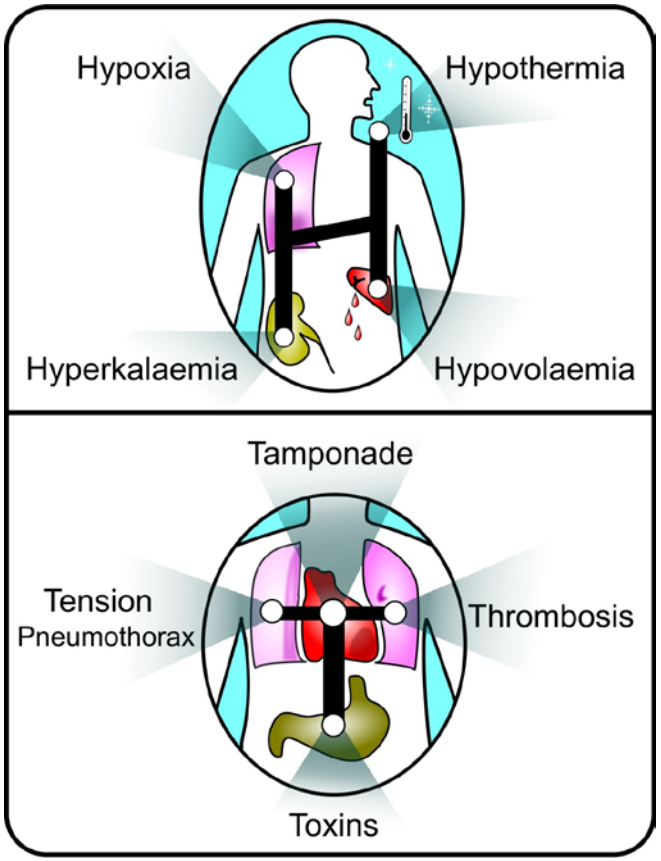

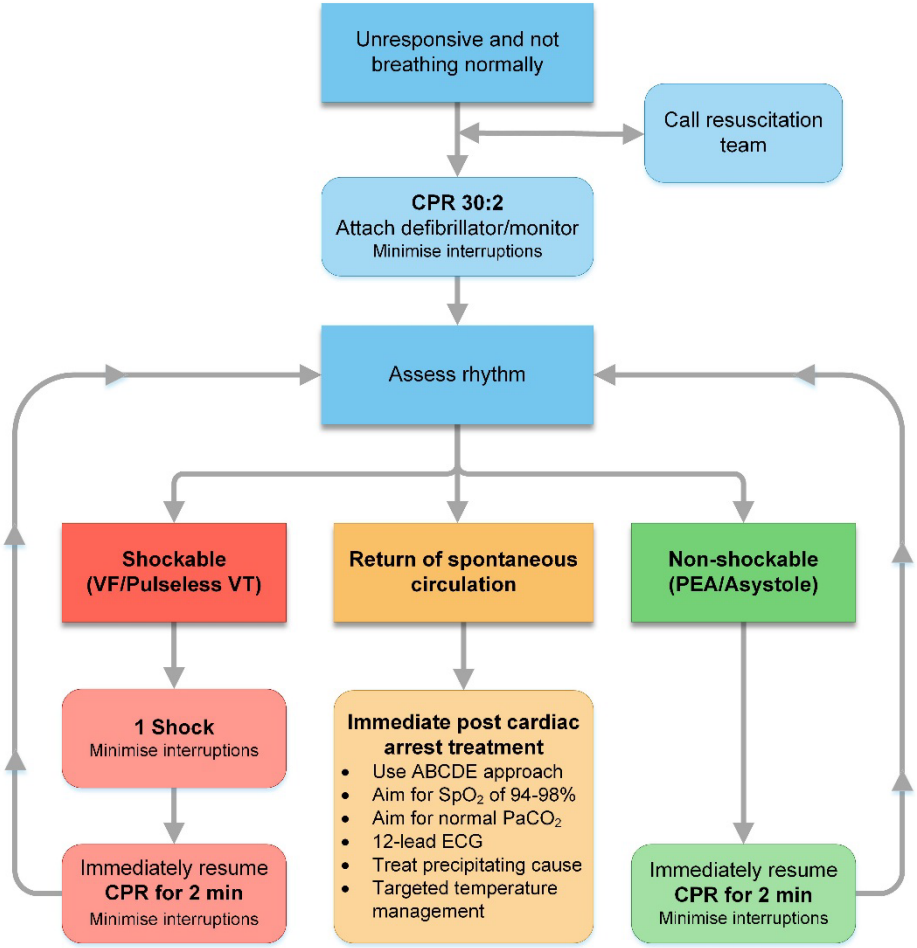

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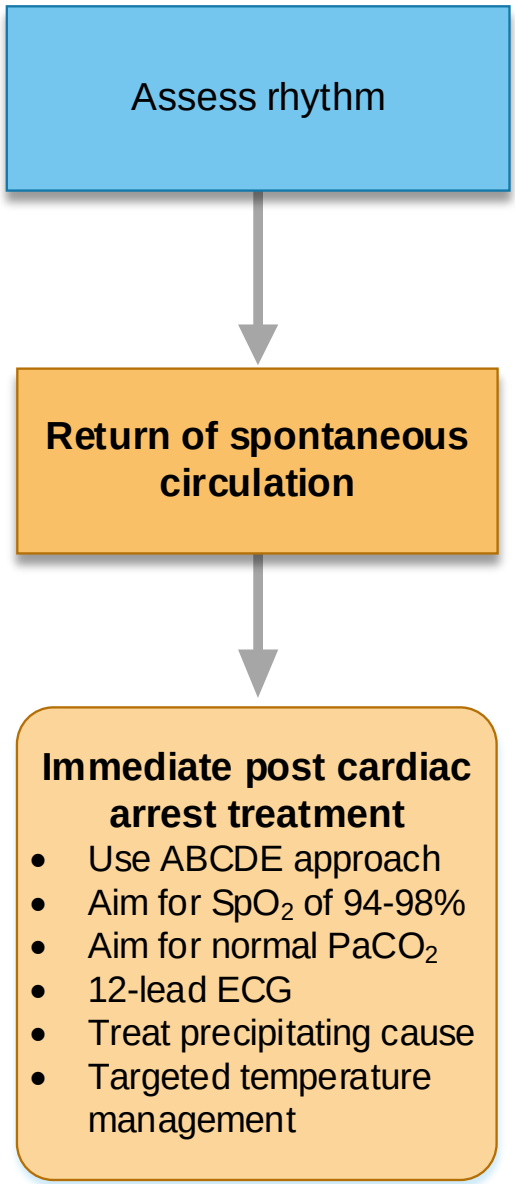
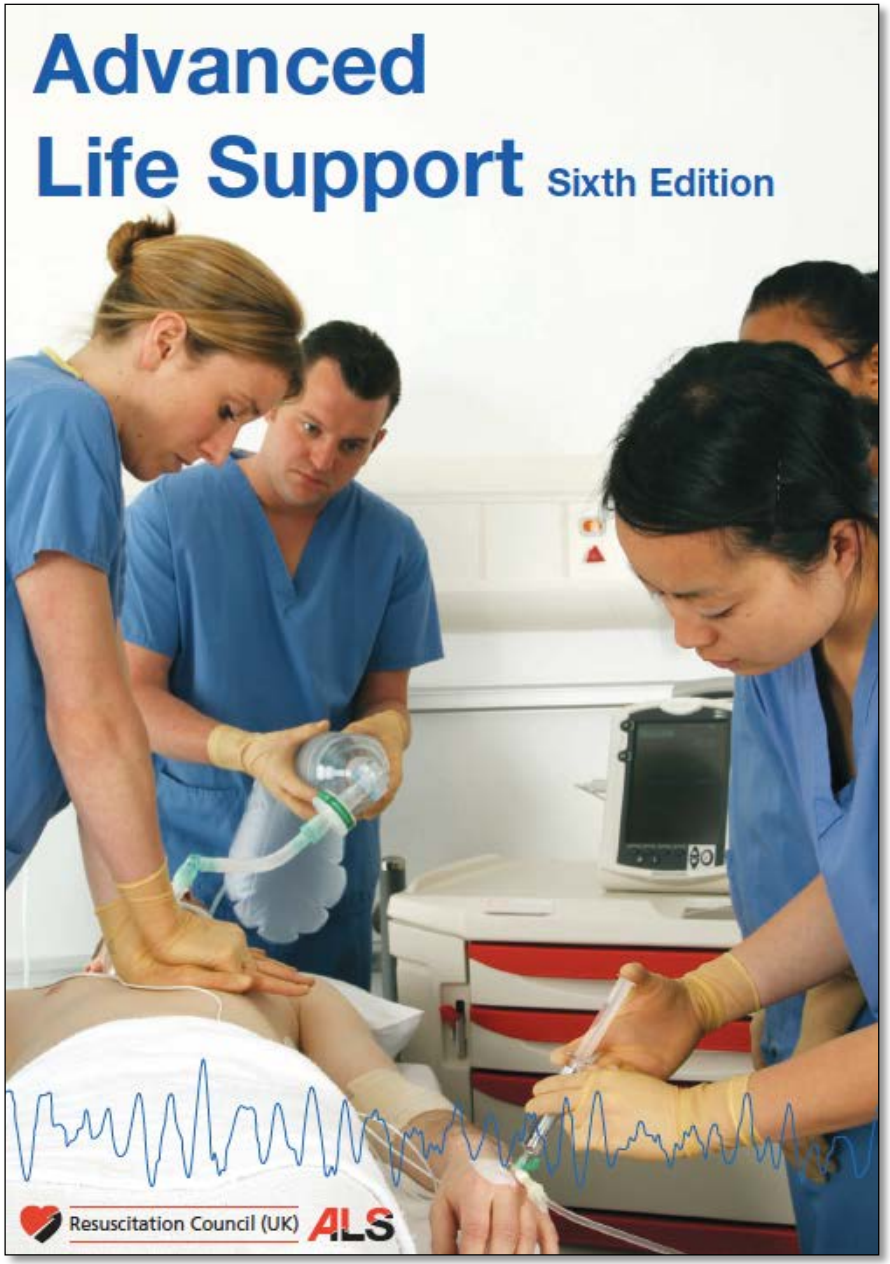

Assess rhythm
Return of spontaneous circulation
Immediate post cardiac arrest treatment
Use ABCDE approach
Aim for SpO2 of 94-98%
Aim for normal PaCO2
12-lead ECG
Treat precipitating cause
Targeted temperature management

Resuscitation team

- Roles planned in advance
- Identify team leader
- Importance of non-technical skills
  - task management
  - team working
  - situational awareness
  - decision making
- Structured communication
  - SBAR or RSVP

Implementation


Advanced
Life Support Sixth Edition
Resuscitation Council (UK)
ALS


Immediate
Life Support Third Edition
Resuscitation Council (UK)
ILS

Advanced Life Support

Seventh Edition

Resuscitation Council (UK)

Immediate Life Support

Fourth Edition

Resuscitation Council (UK)

iResus

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iRESUS

View in iTunes

This app is designed for both iPhone and iPad

Free

Category: Medical
Released: 16 October 2015
Version: 1.0
Size: 4.7 MB
Language: English
Developer: RESUSCITATION COUNCIL (U.K.) TRADING LTD
© RESUSCITATION COUNCIL (U.K.) TRADING LTD
You must be at least 17 years old to download this application.
Infrequent/Mild Alcohol, Tobacco, or Drug Use or References
Frequent/Intense Medical/Treatment Information

Compatibility: Requires iOS 8.0 or later. Compatible with iPhone, iPad, and iPod touch.

Customer Ratings

Current Version:
★★★★★ 6 Ratings

Description

iResus is a free support tool that has been developed by the Resuscitation Council (UK) and Cranworth Medical Ltd.

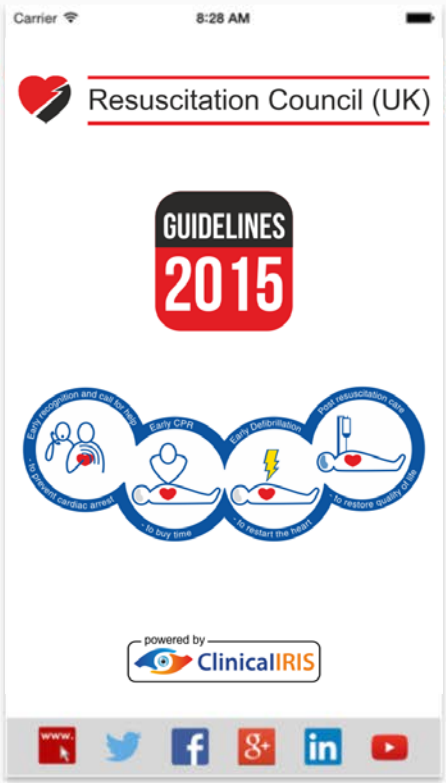
iResus enables the user to access the latest Adult, Paediatric and Newborn resuscitation algorithms without the need for of an internet connection at the point of care.

iResus is fully compliant with the Resuscitation Council (UK) Guidelines 2015 and is an essential tool for UK doctors.

RESUSCITATION COUNCIL (U.K.) TRADING LTD Web Site › iResus Support ›

Screenshots

iPhone | iPad



Summary

- Importance of high quality chest compressions
- Minimise interruptions in chest compressions
- Monitoring during CPR
- Correct reversible causes of cardiac arrest
- Role of resuscitation team