CLINICAL PRACTICE GUIDELINES
For Pre-Hospital Emergency Care
3rd Edition Version 2
The Pre-Hospital Emergency Care Council (PHECC) is an independent statutory body with responsibility for standards, education and training in the field of pre-hospital emergency care in Ireland. PHECC’s primary role is to protect the public.

MISSION STATEMENT
The Pre-Hospital Emergency Care Council protects the public by independently specifying, reviewing, maintaining and monitoring standards of excellence for the delivery of quality pre-hospital emergency care for people in Ireland.

The Council was established as a body corporate by the Minister for Health and Children by Statutory Instrument Number 109 of 2000 (Establishment Order) which was amended by Statutory Instrument Number 575 of 2004 (Amendment Order). These Orders were made under the Health (Corporate Bodies) Act, 1961 as amended and the Health (Miscellaneous Provisions) Act 2007.
Responder

Cardiac First Response
Occupational First Aid
Emergency First Response
# PREFACE

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# CLINICAL PRACTICE GUIDELINES

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It is my pleasure to write the foreword to this PHECC Clinical Handbook comprising 3rd Edition, version 2, Clinical Practice Guidelines (CPGs). There are now 230 CPGs in all, to guide integrated care across the six levels of Responder and Practitioner. My understanding is that it is a world first to have a Cardiac First Responder using guidance from the same integrated set as all levels of Responders and Practitioners up to Advanced Paramedic. We have come a long way since the publication of the first set of guidelines numbering 35 in 2001, and applying to EMTs only at the time. I was appointed Chair in June 2008 to what is essentially the second Council since PHECC was established in 2000.

I pay great tribute to the hard work of the previous Medical Advisory Group chaired by Mark Doyle, in developing these CPGs with oversight from the Clinical Care Committee chaired by Sean Creamer, and guidance and authority of the first Council chaired by Paul Robinson. The development and publication of CPGs is an important part of PHECC’s main functions which are:

1. To ensure training institutions and course content in First Response and Emergency Medical Technology reflect contemporary best practice.
2. To ensure pre-hospital emergency care Responders and Practitioners achieve and maintain competency at the appropriate performance standard.
3. To sponsor and promote the implementation of best practice guidelines in pre-hospital emergency care.
4. To source, sponsor and promote relevant research to guide Council in the development of pre-hospital emergency care in Ireland.
5. To recommend other pre-hospital emergency care standards as appropriate.
6. To establish and maintain a register of pre-hospital emergency care practitioners.
7. To recognise those pre-hospital emergency care providers which undertake to implement the clinical practice guidelines.

The CPGs, in conjunction with relevant ongoing training and review of practice, are fundamental to achieve best practice in pre-hospital emergency care. I welcome this revised Clinical Handbook and look forward to the contribution Responders and Practitioners will make with its guidance.

Mr Tom Mooney, Chair, Pre-Hospital Emergency Care Council
### ACCEPTED ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Paramedic</td>
<td>AP</td>
</tr>
<tr>
<td>Advanced Life Support</td>
<td>ALS</td>
</tr>
<tr>
<td>Airway, breathing &amp; circulation</td>
<td>ABC</td>
</tr>
<tr>
<td>All terrain vehicle</td>
<td>ATV</td>
</tr>
<tr>
<td>Altered level of consciousness</td>
<td>ALoC</td>
</tr>
<tr>
<td>Automated External Defibrillator</td>
<td>AED</td>
</tr>
<tr>
<td>Bag Valve Mask</td>
<td>BVM</td>
</tr>
<tr>
<td>Basic Life Support</td>
<td>BLS</td>
</tr>
<tr>
<td>Blood Glucose</td>
<td>BG</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>BP</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>CO₂</td>
</tr>
<tr>
<td>Cardiopulmonary Resuscitation</td>
<td>CPR</td>
</tr>
<tr>
<td>Cervical spine</td>
<td>C-spine</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>COPD</td>
</tr>
<tr>
<td>Clinical Practice Guideline</td>
<td>CPG</td>
</tr>
<tr>
<td>Degree</td>
<td>°C</td>
</tr>
<tr>
<td>Degrees Centigrade</td>
<td>°C</td>
</tr>
<tr>
<td>Dextrose 10% in water</td>
<td>D₁₀W</td>
</tr>
<tr>
<td>Drop (gutta)</td>
<td>gtt</td>
</tr>
<tr>
<td>Electrocardiogram</td>
<td>ECG</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>ED</td>
</tr>
<tr>
<td>Emergency Medical Technician</td>
<td>EMT</td>
</tr>
<tr>
<td>Endotracheal tube</td>
<td>ETT</td>
</tr>
<tr>
<td>Foreign body airway obstruction</td>
<td>FBAO</td>
</tr>
<tr>
<td>Fracture</td>
<td>#</td>
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<tr>
<td>General Practitioner</td>
<td>GP</td>
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<tr>
<td>Glasgow Coma Scale</td>
<td>GCS</td>
</tr>
<tr>
<td>Gram</td>
<td>g</td>
</tr>
<tr>
<td>Greater than</td>
<td>&gt;</td>
</tr>
<tr>
<td>Greater than or equal to</td>
<td>≥</td>
</tr>
<tr>
<td>Heart rate</td>
<td>HR</td>
</tr>
<tr>
<td>History</td>
<td>Hx</td>
</tr>
<tr>
<td>Impedance Threshold Device</td>
<td>ITD</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Inh</td>
</tr>
<tr>
<td>Intramuscular</td>
<td>IM</td>
</tr>
<tr>
<td>Intranasal</td>
<td>IN</td>
</tr>
<tr>
<td>Intravenous</td>
<td>IV</td>
</tr>
<tr>
<td>Keep vein open</td>
<td>KVO</td>
</tr>
<tr>
<td>Kilogram</td>
<td>Kg</td>
</tr>
<tr>
<td>Less than</td>
<td>&lt;</td>
</tr>
</tbody>
</table>

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_PHECC Clinical Practice Guidelines - Responder_
ACCEPTED ABBREVIATIONS (Cont.)

Less than or equal to .......................................................... ≤
Litre .................................................................................. L
Maximum ............................................................................. Max
Microgram ........................................................................... mcg
Milligram ............................................................................... mg
Millilitre ............................................................................... mL
Millimole ............................................................................... mmol
Minute ................................................................................... min
Modified Early Warning Score ........................................... MEWS
Motor vehicle collision ......................................................... MVC
Myocardial infarction ............................................................. MI
Nasopharyngeal airway ........................................................... NPA
Milliequivalent ....................................................................... mEq
Millimetres of mercury ........................................................ mmHg
Nebulised ............................................................................... NEB
Negative decadic logarithm of the H+ ion concentration ....... pH
Orally (per os) ................................................................. PO
Oropharyngeal airway .......................................................... OPA
Oxygen ................................................................................ O2
Paramedic ............................................................................... P
Peak expiratory flow ............................................................ PEF
Per rectum ............................................................................... PR
Percutaneous coronary intervention ...................................... PCI
Personal Protective Equipment ............................................. PPE
Pulseless electrical activity .................................................. PEA
Respiration rate ...................................................................... RR
Return of spontaneous circulation ......................................... ROSC
Revised Trauma Score .......................................................... RTS
Saturation of arterial oxygen ................................................ SpO2
ST elevation myocardial infarction ......................................... STEMI
Subcutaneous ......................................................................... SC
Sublingual ............................................................................... SL
Systolic blood pressure ........................................................ SBP
Therefore .............................................................................. ∴
Total body surface area ......................................................... TBSA
Ventricular Fibrillation ............................................................ VF
Ventricular Tachycardia .......................................................... VT
When necessary (pro re nata) .................................................. prn
ACKNOWLEDGEMENTS

The process of developing CPGs has been long and detailed. The quality of the finished product is due to the painstaking work of many people, who through their expertise and review of the literature, ensured a world-class publication.

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INTRODUCTION

The development of Clinical Practice Guidelines (CPGs) is a continuous process. The publication of the ILCOR Guidelines 2010 was the principle catalyst for updating these CPGs. As research leads to evidence, and as practice evolves, guidelines are updated to offer the best available advice to those who care for the ill and injured in our pre-hospital environment.

This 3rd edition version 2 offers current best practice guidance. The guidelines have expanded in number and scope – with 32 CPGs in total for Responders, covering such topics as Poisons and Anaphylaxis for the first time. The CPGs continue to recognise the various levels of Practitioner (Emergency Medical Technician, Paramedic and Advanced Paramedic) and Responder (Cardiac First Response, Occupational First Aid and Emergency First Response) who offer care.

The CPGs cover these six levels, reflecting the fact that care is integrated. Each level of more advanced care is built on the care level preceding it, whether or not provided by the same person. For ease of reference, a version of the guidelines for each level of Responder and Practitioner is available on www.phecc.ie Feedback on the experience of using the guidelines in practice is essential for their ongoing development and refinement, therefore, your comments and suggestions are welcomed by PHECC. The Medical Advisory Group believes these guidelines will assist Responders in delivering excellent pre-hospital care.

Mr Cathal O’Donnell
Chair, Medical Advisory Group (2008-2010)
Clinical Practice Guidelines (CPGs) and the Responder

CPGs are guidelines for best practice and are not intended as a substitute for good clinical judgment. Unusual patient presentations make it impossible to develop a CPG to match every possible clinical situation. The Responder decides if a CPG should be applied based on patient assessment and the clinical impression. The Responder must work in the best interest of the patient within the scope of practice for his/her clinical level. Consultation with fellow Responders and/or Practitioners in challenging clinical situations is strongly advised.

The CPGs herein may be implemented provided:

1. The Responder maintains current certification as outlined in PHECC’s Education & Training Standard.
2. The Responder is authorised, by the organisation on whose behalf he/she is acting, to implement the specific CPG.
3. The Responder has received training on, and is competent in, the skills and medications specified in the CPG being utilised.

The medication dose specified on the relevant CPG shall be the definitive dose in relation to Responder administration of medications. The onus rests on the Responder to ensure that he/she is using the latest version of CPGs which are available on the PHECC website www.phecc.ie

Definitions

<table>
<thead>
<tr>
<th>Adult</th>
<th>a patient of 14 years or greater, unless specified on the CPG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>a patient between 1 and less than or equal to (≥) 13 years old, unless specified on the CPG</td>
</tr>
<tr>
<td>Infant</td>
<td>a patient between 4 weeks and less than 1 year old, unless specified on the CPG</td>
</tr>
<tr>
<td>Neonate</td>
<td>a patient less than 4 weeks old, unless specified on the CPG</td>
</tr>
<tr>
<td>Paediatric patient</td>
<td>any child, infant or neonate</td>
</tr>
</tbody>
</table>
Care principles

Care principles are goals of care that apply to all patients. Scene safety, standard precautions, patient assessment, primary and secondary surveys and the recording of interventions and medications on a Ambulatory Care Report (ACR) or Patient Care Report (PCR) are consistent principles throughout the guidelines and reflect the practice of Responders. Care principles are the foundation for risk management and the avoidance of error.

Care Principles

1. Ensure the safety of yourself, other responders/practitioners, your patients and the public:
   - consider all environmental factors and approach a scene only when it is safe to do so
   - identify potential and actual hazards and take the necessary precautions
   - request assistance as required
   - ensure the scene is as safe as is practicable
   - take standard infection control precautions.

2. Identify and manage life-threatening conditions:
   - locate all patients – if the number of patients is greater than available resources, ensure additional resources are sought
   - assess the patient's condition appropriately
   - prioritise and manage the most life-threatening conditions first
   - provide a situation report to Ambulance Control Centre (112/999) using the RED card process as soon as possible after arrival on the scene.


4. Control all external haemorrhage.

5. Monitor and record patient’s vital observations.

6. Identify and manage other conditions.
7 Place the patient in the appropriate posture according to the presenting condition.
8 Ensure the maintenance of normal body temperature (unless CPG indicates otherwise).
9 Provide reassurance at all times.

Completing an ACR/PCR for each patient is paramount in the risk management process and users of the CPGs must commit to this process.

**Minor injuries**
Responders must adhere to their individual organisational protocols for treat and discharge/referral of patients with minor injuries.

**CPGs and the pre-hospital emergency care team**
The aim of pre-hospital emergency care is to provide a comprehensive and coordinated approach to patient care management, thus providing each patient with the most appropriate care in the most efficient time frame.

In Ireland today, providers of emergency care are from a range of disciplines and include Responders (Cardiac First Response, Occupational First Aid and Emergency First Response) and Practitioners (Emergency Medical Technicians, Paramedics, Advanced Paramedics, Nurses and Doctors) from the statutory, private, auxiliary and voluntary services.

CPGs set a consistent standard of clinical practice within the field of pre-hospital emergency care. By reinforcing the role of the Responder, in the continuum of patient care, the chain of survival and the golden hour are supported in medical and trauma emergencies respectively.

CPGs guide the Responder in presenting to a Practitioner a patient who has been supported in the very early phase of injury/illness and in whom the danger of deterioration has lessened by early appropriate clinical care interventions.
CPGs presume no intervention has been applied, nor medication administered, prior to the arrival of the Responder. In the event of another Practitioner or Responder initiating care during an acute episode, the Responder must be cognisant of interventions applied and medication doses already administered and act accordingly.

In this care continuum, the duty of care is shared among all Responders/Practitioners of whom each is accountable for his/her own actions. The most qualified Responder/Practitioner on the scene shall take the role of clinical leader. Explicit handover between Responders/Practitioners is essential and will eliminate confusion regarding the responsibility for care.

**Defibrillation policy**
The Medical Advisory Group has recommended the following pre-hospital defibrillation policy:
- Advanced Paramedics should use manual defibrillation for all age groups
- Paramedics may consider use of manual defibrillation for all age groups
- EMTs and Responders shall use AED mode for all age groups

**Using the 3rd Edition version 2 CPGs**
The 3rd Edition version 2 CPGs continue to be printed in sections.
- Appendix 1, the Medication Formulary, is an important adjunct supporting decision-making by the Responder.
- Appendix 2, lists the care management and medications matrix for the six levels of Practitioner and Responder.
- Appendix 3, outlines important guidance for critical incident stress management (CISM) from the Ambulance Service CISM committee.
- Appendix 4, outlines changes to medications and skills as a result of updating to version 2 and the introduction of new CPGs.
- Appendix 5, outlines the pre-hospital defibrillation position from PHECC
### Clinical Practice Guidelines for Responders

**Codes explanation**

<table>
<thead>
<tr>
<th>Sequence step</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardiac First Responder (Community)</strong> (Level 1) for which the CPG pertains</td>
</tr>
<tr>
<td><strong>Cardiac First Responder (Advanced)</strong> (Level 1) for which the CPG pertains</td>
</tr>
<tr>
<td><strong>Occupational First Aider</strong> (Level 2) for which the CPG pertains</td>
</tr>
<tr>
<td><strong>Emergency First Responder</strong> (Level 3) for which the CPG pertains</td>
</tr>
</tbody>
</table>

- **Mandatory sequence step**
  - **Ring ambulance control**
  - **Request an AED from local area**
  - **A decision process** The Responder must follow one route
  - **Consider treatment options** Given the clinical presentation consider the treatment option specified
  - **Reassess** Reassess the patient following intervention

- **A skill or sequence that only pertains to EFR or higher clinical levels**
  - **Special authorisation** This authorises the Responder to perform an intervention under specified conditions

- **A direction to go to a specific CPG following a decision process**
  - Note: only go to the CPGs that pertain to your clinical level

### CPG numbering system

1/2/3.x.y

**Version 2, mm/yy**

**1/2/3.4.1**

**Version 2, 07/11**

- **Medication, dose & route**
  - The medication name, dose and route is specified
  - A medication which may be administered by a CFR or higher clinical level
  - A medication which may be administered by an EFR or higher clinical level

### Note:

- The term **Occupational First Aider or lower** clinical levels not permitted this route is highlighted.
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SECTION 2 - PATIENT ASSESSMENT

Primary Survey - Adult

Trauma

Take standard infection control precautions

Consider pre-arrival information

Scene safety
Scene survey
Scene situation

Control catastrophic external haemorrhage

Mechanism of injury suggestive of spinal injury

Yes

C-spine control

No

Assess responsiveness

Unresponsive

Responsive

999 / 112

Head tilt/chin lift, jaw thrust

Airway patent

Yes

Maintain

No

Go to BLS CPG

Airway obstructed

Breathing

Yes

Consider Oxygen therapy

No

Commence CPR

Oxygen therapy

Go to BLS CPG

Consider expose & examine

Treat life threatening injuries only at this point

Pulse, Respiration & AVPU assessment

Formulate RED card information

Maintain care until handover to appropriate Practitioner

999 / 112

RED Card

Information and sequence required by Ambulance Control when requesting an emergency ambulance response:

1 Phone number you are calling from
2 Location of incident
3 Chief complaint
4 Number of patients
5 Age (approximate)
6 Gender
7 Conscious? Yes/no
8 Breathing normally? Yes/no
9 If over 35 years – Chest Pain? Yes/no
10 If trauma – Severe bleeding? Yes/no

Pulse: 60 – 100
Respirations: 12 – 20

Reference: ILCOR Guidelines 2010
SECTION 2 - PATIENT ASSESSMENT

2/3.2.4

Secondary Survey Medical – Adult

Primary Survey

Record vital signs

Patient acutely unwell
Yes

Focused medical history of presenting complaint

SAMPLE history

Check for medications carried or medical alert jewellery

Formulate RED card information

Go to appropriate CPG

Maintain care until handover to appropriate Practitioner

Go to appropriate CPG

Identify positive findings and initiate care management

Go to appropriate CPG

Markers identifying acutely unwell
Cardiac chest pain
Systolic BP < 90 mmHg
Respiratory rate < 10 or > 29
AVPU = P or U on scale
Acute pain > 5

RED Card

Information and sequence required by Ambulance Control when requesting an emergency ambulance response:
1 Phone number you are calling from
2 Location of incident
3 Chief complaint
4 Number of patients
5 Age (approximate)
6 Gender
7 Conscious? Yes/no
8 Breathing normally? Yes/no
9 If over 35 years – Chest Pain? Yes/no
10 If trauma – Severe bleeding? Yes/no

Analogue Pain Scale
0 = no pain, ........ 10 = unbearable

Appropriate Practitioner
Registered Medical Practitioner
Registered Nurse
Registered Advanced Paramedic
Registered Paramedic
Registered EMT

SECTION 2 - PATIENT ASSESSMENT

Secondary Survey Trauma – Adult

Primary Survey

Obvious minor injury

Yes

Follow organisational protocols for minor injuries

No

Examination of obvious injuries

Record vital signs

SAMPLE history

Complete a head to toe survey as history dictates

Check for medications carried or medical alert jewellery

Formulate RED card information

OFA

EFR

Go to appropriate CPG

Identify positive findings and initiate care management

PHECC Clinical Practice Guidelines - Responder

Advanced Airway Management – Adult

1. Adult Cardiac arrest
   - Able to ventilate
     - Yes
       - Consider FBAO
     - No
       - Go to BLS-Adult CPG
   - Consider option of advanced airway
     - No
       - Check supraglottic airway placement after each patient movement or if any patient deterioration
     - Yes
       - Supraglottic Airway insertion
         - Successful
           - Yes
             - Go to appropriate CPG
           - No
             - 2nd attempt Supraglottic Airway insertion
               - Successful
                 - Yes
                   - Go to appropriate CPG
                 - No
                   - Check supraglottic airway placement after each patient movement or if any patient deterioration
               - No
                 - Revert to basic airway management
         - No
           - Minimum interruptions of chest compressions
           - Maximum hands off time 10 seconds

Reference: ILCOR Guidelines 2010

Following successful Advanced Airway management:
- i) Ventilate at 8 to 10 per minute.
- ii) Unsynchronised chest compressions continuous at 100 to 120 per minute
Inadequate Respirations – Adult

**Respiratory difficulties**

Assess and maintain airway

Oxygen therapy

![Flowchart of Inadequate Respirations – Adult](image)

**Regard each emergency asthma call as for acute severe asthma until it is shown otherwise**

**Special Authorisation:**
EFRs may use a BVM to ventilate provided that it is a two person operation.

**Life threatening asthma**
Any one of the following in a patient with severe asthma:
- Silent chest
- Cyanosis
- Feeble respiratory effort
- Exhaustion
- Confusion
- Unresponsive

**Acute severe asthma**
Any one of:
- Respiratory rate ≥ 25/ min
- Heart rate ≥ 110/ min
- Inability to complete sentences in one breath

**Moderate asthma exacerbation**
Increasing symptoms
No features of acute severe asthma

SECTION 4 - MEDICAL EMERGENCIES

Basic Life Support – Adult

Collapse

Responsive Patient

Yes

999 / 112

Shout for help

No

Open Airway

Not breathing normally?

i.e. only gasping

999 / 112

Minimum interruptions of chest compressions

Maximum hands off time

10 seconds

Commence chest Compressions

Continue CPR (30:2) until AED is attached or patient

starts to move

CFR-A Oxygen therapy

Apply AED pads

AED Assesses Rhythm

Shock advised

Give 1 shock

Immediately resume CPR

30 compressions: 2 breaths x 2 minutes (5 cycles)

Breathing normally?

Immediately resume CPR

30 compressions: 2 breaths x 2 minutes (5 cycles)

Go to Post Resuscitation CPG

If unable to ventilate perform compression only CPR

Continue CPR until an appropriate Practitioner takes over or patient starts to move

If an Implantable Cardioverter Defibrillator (ICD) is fitted in the patient treat as per CPG. It is safe to touch a patient with an ICD fitted even if it is firing.

Continued CPR while AED is charging

Ventilations

Rate: 10 / min

Volume: 500 to 600 mL

Consider insertion of non-inflatable supraglottic airway, however do not delay 1st shock or stop CPR

Reference: ILCOR Guidelines 2010

S4
Basic Life Support – Paediatric (≤ 13 Years)

**Collapse**

- **Responsive Patient**
  - Yes
    - 999 / 112
  - No
    - Shout for help
      - 999 / 112

**Open Airway**

- Not breathing normally i.e. only gasping

**Commence chest Compressions**

- Continue CPR (30:2) for approximately 2 minutes

**Assesses Rhythm**

- **Shock advised**
  - Give 1 shock
    - Immediately resume CPR 30 compressions: 2 breaths x 2 minutes (5 cycles)

- **No Shock advised**
  - Breathing normally?
    - Yes
      - Go to Post Resuscitation CPG
    - No
      - Immediately resume CPR 30 compressions: 2 breaths x 2 minutes (5 cycles)

**Apply AED pads**

- Continue CPR while AED is charging

- Minimum interruptions of chest compressions
- Maximum hands off time 10 seconds

**Reference:** ILCOR Guidelines 2010

Infant AED

It is extremely unlikely to ever have to defibrillate a child less than 1 year old. Nevertheless, if this were to occur the approach would be the same as for a child over the age of 1. The only likely difference being, the need to place the defibrillation pads anterior (front) and posterior (back), because of the infant’s small size.
SECTION 4 - MEDICAL EMERGENCIES

Foreign Body Airway Obstruction – Adult

1 to 5 back blows

1 to 5 abdominal thrusts (or chest thrusts for obese or pregnant patients)

If patient becomes unresponsive

Open Airway

999 / 112

One cycle of CPR

Effective

No

Go to BLS Adult CPG

After each cycle of CPR open mouth and look for object if visible attempt once to remove it

Maintain care until handover to appropriate Practitioner

Are you choking?

Severe (ineffective cough)

FBAO Severity

Mild (effective cough)

Conscious

Encourage cough

Effective

No

Yes

Effective

No

Yes

ILCOR Guidelines 2010: Chest thrusts, back blows, or abdominal thrusts are effective for relieving FBAO in conscious adults and children > 1 year of age
SECTION 4 - MEDICAL EMERGENCIES

Foreign Body Airway Obstruction – Paediatric (≤ 13 years)

Are you choking?

Severe (ineffective cough)

Conscious

No

1 to 5 back blows

Effective

Yes

1 to 5 thrusts (child – abdominal thrusts) (infant – chest thrusts)

Effective

Yes

If patient becomes unresponsive

Open Airway

999 / 112

one cycle of CPR

Effective

Yes

No

Go to BLS Child CPG

Consider Oxygen therapy

999 / 112

Maintain care until handover to appropriate Practitioner

After each cycle of CPR open mouth and look for object if visible attempt once to remove it

ILCOR Guidelines 2010: Chest thrusts, back blows, or abdominal thrusts are effective for relieving FBAO in conscious adults and children > 1 year of age
SECTION 4 - MEDICAL EMERGENCIES

Post-Resuscitation Care

Return normal spontaneous breathing

CFR-A
Maintain Oxygen therapy

Conscious
Yes

999/112 if not already contacted

No

Recovery position (if no trauma)

Maintain patient at rest

Monitor vital signs

Maintain care until handover to appropriate Practitioner

If registered healthcare professional, and pulse oximetry available, titrate oxygen to maintain SpO2;
Adult: 94% to 98%
Paediatric: 96% to 98%

Special Authorisation:
CFR-As, linked to EMS, may be authorised to actively cool unresponsive patients following return of spontaneous circulation (ROSC)

For active cooling place cold packs in arm pits, groin & abdomen

Reference: ILCOR Guidelines 2010
**SECTION 4 - MEDICAL EMERGENCIES**

**Recognition of Death – Resuscitation not Indicated**

1. **Apparent dead body**
2. **Signs of Life**
   - Yes → Go to BLS CPG
   - No → **Definitive indicators of Death**
3. **Definitive indicators of Death**
   - Yes → It is inappropriate to commence resuscitation
   - No → Inform Ambulance Control
4. **Inform Ambulance Control** → 999 / 112
5. **Complete all appropriate documentation**
6. **Await arrival of appropriate Practitioner and / or Gardaí**

**Definitive indicators of death:**
1. Decomposition
2. Obvious rigor mortis
3. Obvious pooling (hypostasis)
4. Incineration
5. Decapitation
6. Injuries totally incompatible with life
SECTION 4 - MEDICAL EMERGENCIES

Cardiac Chest Pain – Acute Coronary Syndrome

Cardiac chest pain

999 / 112 if not already contacted

Oxygen therapy

Aspirin, 300 mg PO

Monitor vital signs

Maintain care until handover to appropriate Practitioner

Patient prescribed GTN

Yes

No

Assist patient to administer
GTN 0.4 mg SL

If registered healthcare professional, and pulse oximetry available, titrate oxygen to maintain SpO2;
Adult: 94% to 98%

Monitor vital signs

Reference: ILCOR Guidelines 2010
Anaphylaxis is a life threatening condition identified by the following criteria:

- Sudden onset and rapid progression of symptoms
- Difficulty breathing
- Diminished consciousness
- Red, blotchy skin

Be aware that:

- Skin or mouth/tongue changes alone are not a sign of an anaphylactic reaction
- There may also be vomiting, abdominal pain or incontinence

Special Authorisation:
Responders who have received training and are authorised by a Medical Practitioner for a named patient may administer Epinephrine via an auto injector.

Special Authorisation:
Responders who have received training and are authorised by a Medical Practitioner for a named patient may administer Salbutamol via an aerosol measured dose.

Glycaemic Emergency – Adult

Known diabetic with confusion or altered levels of consciousness

999 / 112

A or V on AVPU scale

Sweetened drink

Or

Glucose gel, 10-20 g buccal

Allow 5 minutes to elapse following administration of sweetened drink or Glucose gel

Reassess

Improvement in condition

No

Yes

Recovery position

OFA

EFR


Maintain care until handover to appropriate Practitioner

Yes

No

2/3.4.19 05/08

S4
Consider other causes of seizures:
- Meningitis
- Head injury
- Hypoglycaemia
- Eclampsia
- Fever
- Poisons
- Alcohol/drug withdrawal

Seizure / convulsion

Protect from harm

999 / 112

Oxygen therapy

Seizing currently

Support head

Seizure status

Alert

Yes

No

OFA EFR

Recovery position

Airway management

Maintain care until handover to appropriate Practitioner

Post seizure

Seizure status

Yes
SECTION 4 - MEDICAL EMERGENCIES

Stroke

Acute neurological symptoms

Complete a FAST assessment

Emergency contact (999 or 112)

Maintain airway

If registered healthcare professional, and pulse oximetry available, titrate oxygen to maintain SpO2; Adult: 94% to 98%

F - facial weakness
  - Can the patient smile?, Has their mouth or eye drooped? Which side?
A - arm weakness
  - Can the patient raise both arms and maintain for 5 seconds?
S - speech problems
  - Can the patient speak clearly and understand what you say?
T - time to call 112 now if positive FAST

Maintain care until handover to appropriate Practitioner

Reference: ILCOR Guidelines 2010
SECTION 4 - MEDICAL EMERGENCIES

Poisoning

Scene safety is paramount

Poison source

Inhalation, ingestion or injection

Absorption

Site burns

Yes

No

Cleanse/clear/decontaminate

For decontamination follow local protocol

A on AVPU

Yes

Recovery Position

Monitor vital signs

Maintain poison source package for inspection by EMS

Maintain care until handover to appropriate Practitioner

If suspected tablet overdose locate tablet container and hand it over to appropriate practitioner

Reference: ILCOR Guidelines 2010
Hypothermia

Query hypothermia

- Immersion
  - Yes
  - Remove patient horizontally from liquid (Provided it is safe to do so)
  - No
  - Complete primary survey (Commence CPR if appropriate)

- Protect patient from wind chill

- Oxygen therapy
  - Warmed O2 if possible
  - Pulse check for 30 to 45 seconds

- Remove wet clothing by cutting

- Place patient in dry blankets/sleeping bag with outer layer of insulation

- Alert and able to swallow
  - Yes
  - Give hot sweet drinks
  - No
  - If Cardiac Arrest follow CPGs but - no active re-warming

- Hot packs to armpits & groin

- Transport in head down position
  - Helicopter: head forward
  - Boat: head aft

Equipment list
- Survival bag
- Space blanket
- Warm air rebreather

Reference:
- Pennington M, et al, 1994, Wilderness EMT, Wilderness EMS Institute
Decompression Illness (DCI)

SCUBA diving within 48 hours

Consider diving buddy as possible patient also

Complete primary survey (Commence CPR if appropriate)

Treat in supine position

Oxygen therapy 100% O₂

Ensure Ambulance Control is notified 999 / 112

Conscious

Yes

Maintain care until handover to appropriate Practitioner

No

Conscious

Maintain airway

Transport dive computer and diving equipment with patient, if possible

Transport is completed at an altitude of < 300 metres above incident site or aircraft pressurised equivalent to sea level

SECTION 4 - MEDICAL EMERGENCIES

Altered Level of Consciousness – Adult

V, P or U on AVPU scale

999 / 112

Maintain airway

Trauma

Yes

No

Consider Cervical Spine

Airway maintained

Yes

No

Recovery Position

Complete a FAST assessment

Obtain SAMPLE history from patient, relative or bystander

Check for medications carried or medical alert jewellery

Maintain care until handover to appropriate Practitioner

F – facial weakness
- Can the patient smile?, Has their mouth or eye drooped?
A – arm weakness
- Can the patient raise both arms?
S – speech problems
- Can the patient speak clearly and understand what you say?
T – time to call 112 (if positive FAST)
SECTION 4 - MEDICAL EMERGENCIES

Heat Related Illnesses

Collapse from heat related condition

Remove/ protect from hot environment (providing it is safe to do so)

999 / 112

Exercise related dehydration should be treated with oral fluids. (caution with over hydration with water)

Give cool fluids to drink

Recovery position (maintain airway)

Cool patient

Maintain care until handover to appropriate Practitioner

Conscious

No

Yes

Monitor vital signs

Cooling may be achieved by:
- Removing clothing
- Fanning
- Tepid sponging

Reference: ILCOR Guidelines 2010
RFDS, 2009, Primary Clinical Care Manual

PHECC Clinical Practice Guidelines - Responder
Pre-Hospital Emergency Childbirth

Query labour

999 or 112

Take SAMPLE history

Patient in labour

Yes

No

Position mother

Monitor vital signs

Birth Complications

Yes

No

Support baby throughout delivery

Dry baby and check ABCs

Go to BLS Infant CPG

No

Baby stable

Yes

Wrap baby to maintain temperature

Go to Primary Survey CPG

No

Mother stable

Yes

If placenta delivers, retain for inspection

Reassess

Maintain care until handover to appropriate Practitioner

S5

Pre-Hospital Emergency Childbirth

PHECC Clinical Practice Guidelines - Responder
**SECTION 6 - TRAUMA**

**External Haemorrhage**

- **Open wound**
  - Yes: Active bleeding
    - Posture, Elevation, Examination, Pressure
  - No: Apply sterile dressing

- Haemorrhage controlled
  - Yes: Apply additional pressure dressing(s)
  - No: Monitor vital signs

- Clinical signs of shock
  - Yes: Prevent chilling and elevate lower limbs (if possible)
  - No: Consider Oxygen therapy

- Maintain care until handover to appropriate Practitioner

Reference: ILCOR Guidelines 2010
SECTION 6 - TRAUMA

Spinal Immobilisation – Adult

If in doubt, treat as spinal injury

Trauma Indications for spinal immobilisation

- Stabilise cervical spine
- Apply cervical collar
- Maintain care until handover to appropriate Practitioner

Equipment list:
Rigid cervical collar

Special Authorisation:
EFR’s may extricate a patient on a long board in the absence of a Practitioner if;
1 an unstable environment prohibits the attendance of a Practitioner, or
2 while awaiting the arrival of a Practitioner the patient requires rapid extrication to initiate emergency care

Do not forcibly restrain a patient that is combatitive

Return head to neutral position unless on movement there is increase in Pain, Resistance or Neurological symptoms

EFR

EFR

OFA

EFR

999 / 112

S6
SECTION 6 - TRAUMA

Burns

2/3.6.4
Version 2, 10/11

Burn or Scald

Cease contact with heat source

Isolated superficial injury (excluding FHFFP)

Yes

No

OFA
EFR

Inhalation and or facial injury

Yes

No

999 / 112

Minimun 15 minutes cooling of area is recommended. Caution with hypothermia

Airway management

Yes

No

Consider humidified Oxygen therapy

Appropriate history and burn area ≤ 1%

Yes

No

Prevent chilling (monitor body temperature)

Ensure ambulance control has been notified

Isolated superficial injury

Pain > 2/10

Yes

No

Appropriate history and burn area ≤ 1%

No

Remove burnt clothing (unless stuck) & jewellery

Dressing/covering of burn area

Commence local cooling of burn area

Brush off powder & irrigate chemical burns

Follow local expert direction

Dressing/covering of burn area

Commence local cooling of burn area

ILCOR Guidelines 2010

Caution with the elderly, very young, circumferential & electrical burns

Follow organisational protocols for minor injuries

Maintain care until handover to appropriate Practitioner

Equipment list
Acceptable dressings
Burns gel (caution for > 10% TBSA)
Cling film
Sterile dressing
Clean sheet

ILCOR Guidelines 2010
SECTION 6 - TRAUMA

Limb Injury

Limb injury

Expose and examine limb

Dress open wounds

Haemorrhage controlled

Yes

Provide manual stabilisation for injured limb

Check_CSMs_distal_to_injury_site

Injury type

Fracture

Soft tissue injury

Dislocation

Apply appropriate splinting device /sling

Rest

Ice

Compression Elevation

Splint/support in position found

Recheck CSMs

Maintain care until handover to appropriate Practitioner

Equipment list

Dressings

Triangular bandages

Splinting devices

Compression bandages

Ice packs

Haemorrhage controlled

No

Go to Haemorrhage Control CPG

999 / 112
SECTION 6 - TRAUMA

Submersion Incident

1/2/3.6.7
Version 2, 05/08

S6

SECTION 7 - PAEDIATRIC EMERGENCIES

Primary Survey – Paediatric (≤ 13 years)

Control catastrophic external haemorrhage

Take standard infection control precautions

Consider pre-arrival information

Scene safety
Scene survey
Scene situation

Control catastrophic external haemorrhage

Mechanism of injury suggestive of spinal injury

C-spine control

Yes

No

Assess responsiveness

Airway patent

Yes

Maintain

No

Airway obstructed

No

Go to FBAO CPG

Go to BLS Paediatric CPG

Breathing

Yes

Consider
Oxygen therapy

Formulate RED card information

RED Card
Information and sequence required by Ambulance Control when requesting an emergency ambulance response:
1. Phone number you are calling from
2. Location of incident
3. Chief complaint
4. Number of patients
5. Age (approximate)
6. Gender
7. Conscious? Yes/no
8. Breathing normally? Yes/no
If over 35 years – Chest Pain? Yes/no
If trauma – Severe bleeding? Yes/no

Pulse, Respiration & AVPU assessment

Maintain care until handover to appropriate Practitioner

Go to appropriate CPG


Normal rates

<table>
<thead>
<tr>
<th>Age</th>
<th>Pulse (infant)</th>
<th>Respirations (infant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant</td>
<td>100 – 160</td>
<td>30 – 60</td>
</tr>
<tr>
<td>Toddler</td>
<td>90 – 150</td>
<td>24 – 40</td>
</tr>
<tr>
<td>Pre school</td>
<td>80 – 140</td>
<td>22 – 34</td>
</tr>
<tr>
<td>School age</td>
<td>70 – 120</td>
<td>18 – 30</td>
</tr>
</tbody>
</table>

Appropriate Practitioner

Registered Medical Practitioner
Registered Nurse
Registered Advanced Paramedic
Registered Paramedic
Registered EMT

999 / 112
Inadequate Respirations – Paediatric (≤ 13 years)

Respiratory difficulties
Assess and maintain airway
Do not distress Permit child to adopt position of comfort
Consider FBAO

Oxygen therapy

999 / 112

Unresponsive patient with a falling respiratory rate

Positive pressure ventilations 12 to 20 per minute

Life threatening asthma
Any one of the following in a patient with severe asthma:
- Silent chest
- Cyanosis
- Poor respiratory effort
- Hypotension
- Exhaustion
- Confusion
- Unresponsive

Special Authorisation:
EFRs may use a BVM to ventilate provided that it is a two person operation

Unresponsive patient with a falling respiratory rate

Audible wheeze
Yes
No

History of Asthma
Yes
No

Patient prescribed Salbutamol
Yes
No

Assist patient to administer Salbutamol, 2 puffs (0.2 mg) metered aerosol

Reassess

Life threatening asthma

Acute severe asthma
Any one of:
- Inability to complete sentences in one breath or too breathless to talk or feed
- Respiratory rate > 30/min for > 5 years old > 40/min for 2 to 5 years old
- Heart rate > 120/min for > 5 years old > 130/min for 2 to 5 years old

Anaphylaxis – Paediatric (≤ 13 years)

- Anaphylaxis is a life-threatening condition identified by the following criteria:
  - Sudden onset and rapid progression of symptoms
  - Difficulty breathing
  - Diminished consciousness
  - Red, blotchy skin

Patient’s name
Responder’s name
Doctor’s name

Place in semi-recumbent position

Breathing difficulty

Assist patient to administer Salbutamol

Patient prescribed Salbutamol

Oxygen therapy

Monitor vital signs

Maintain care until handover to appropriate Practitioner

Special Authorisation:
Responders who have received training and are authorised by a Medical Practitioner for a named patient may administer Epinephrine via an auto injector.

Special Authorisation:
Responders who have received training and are authorised by a Medical Practitioner for a named patient may administer Salbutamol via an aerosol measured dose.

Seizure/Convulsion – Paediatric (≤ 13 years)

Seizure / convulsion

- Protect from harm
- Oxygen therapy
- Seizure status
  - Seizing currently
  - Support head
  - Alert
- Post seizure
  - Yes
  - Recovery position
  - Airway management
  - If pyrexial – cool child
- No
  - Maintain care until handover to appropriate Practitioner

Consider other causes of seizures:
- Meningitis
- Head injury
- Hypoglycaemia
- Eclampsia
- Fever
- Poisons
- Alcohol/drug withdrawal

999 / 112
Spinal Immobilisation – Paediatric (≤ 13 years)

If in doubt, treat as spinal injury

999 / 112

Trauma
Indications for spinal immobilisation

Return head to neutral position unless on movement there is increase in pain, resistance or neurological symptoms

Stabilise cervical spine

Remove helmet (if worn)

Apply cervical collar

Patient in undamaged child seat

No

Immobilise in child seat

Yes

Maintain care until handover to appropriate Practitioner

Paediatric spinal injury indications include:

- Pedestrian v auto
- Passenger in high speed vehicle collision
- Ejection from vehicle
- Sports/ playground injuries
- Falls from a height
- Axial load to head

Do not forcibly restrain a paediatric patient that is combative

Special Instruction:
EFR’s may extricate a patient on a long board in the absence of a Practitioner if:
1. an unstable environment prohibits the attendance of a Practitioner, or
2. while awaiting the arrival of a Practitioner the patient requires rapid extrication to initiate emergency care

References:
Slack, S. & Clancy, M, 2004, Clearing the cervical spine of paediatric trauma patients, EMJ 21; 189-193
The medication formulary is published by the Pre-Hospital Emergency Care Council (PHECC) to enable pre-hospital emergency care Responders to be competent in the use of medications permitted under Clinical Practice Guidelines (CPGs).

The Medication Formulary is recommended by the Medical Advisory Group (MAG) and ratified by the Clinical Care Committee (CCC) prior to publication by Council.

The medications herein may be administered provided:
1. The Responder complies with the CPGs published by PHECC.
2. The Responder is acting on behalf of an organisation (paid or voluntary) that is approved by PHECC to implement the CPGs.
3. The Responder is authorised, by the organisation on whose behalf he/she is acting, to administer the medications.
4. The Responder has received training on – and is competent in – the administration of the medication.

The context for administration of the medications listed here is outlined in the CPGs.

Every effort has been made to ensure accuracy of the medication doses herein. The dose specified on the relevant CPG shall be the definitive dose in relation to Responder administration of medications. The principle of titrating the dose to the desired effect shall be applied. The onus rests on the Responder to ensure that he/she is using the latest versions of CPGs which are available on the PHECC website www.phecc.ie

All medication doses for patients ≤ 13 years shall be calculated on a weight basis unless an age-related dose is specified for that medication.

**THE DOSE FOR PAEDIATRIC PATIENTS MAY NEVER EXCEED THE ADULT DOSE.**

Reviewed on behalf of PHECC by Prof Peter Weedle, Adjunct Professor of Clinical Pharmacy, School of Pharmacy, University College Cork.

This edition contains 5 medications for Responder level. Please visit www.phecc.ie to verify the current version.
### Index of medication formulary

*Adult ≥ 14 and Paediatric ≤ 13 unless otherwise stated*

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<td>Glucose gel</td>
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<td>Glyceryl Trinitrate</td>
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<td>Oxygen</td>
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<tr>
<td>Salbutamol</td>
<td>57</td>
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</tbody>
</table>
# APPENDIX 1 - MEDICATION FORMULARY

## AMENDMENTS TO THE 3RD EDITION VERSION 2 INCLUDE:

### ASPIRIN

<table>
<thead>
<tr>
<th>Heading</th>
<th>Add</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional information</td>
<td>If the patient has swallowed an aspirin (enteric coated) preparation without chewing it, the patient should be regarded as not having taken any aspirin; administer 300 mg PO.</td>
<td></td>
</tr>
</tbody>
</table>

### OXYGEN

<table>
<thead>
<tr>
<th>Heading</th>
<th>Add</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indications</td>
<td>SpO₂ &lt; 94% adults &amp; &lt; 96% paediatrics</td>
<td>SpO₂ &lt; 97%</td>
</tr>
</tbody>
</table>
| Usual dosages    | **Adult**: Life threats identified during primary survey; 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 94% - 98%. All other acute medical and trauma titrate O₂ to achieve SpO₂ of 94% - 98%.  
**Paediatric**: Life threats identified during primary survey; 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 96% - 98%. All other acute medical and trauma titrate O₂ to achieve SpO₂ of 96% - 98%. | **Adult**: via BVM, Pneumothorax; 100 % via high concentration reservoir mask. All other acute medical and trauma titrate to SpO₂ > 97%.  
**Paediatric**: via BVM, All other acute medical and trauma titrate to SpO₂ > 97% |
<p>| Additional information | If an oxygen driven nebuliser is used to administer Salbutamol for a patient with acute exacerbation of COPD it should be limited to 6 minutes maximum. |        |</p>
<table>
<thead>
<tr>
<th>DRUG NAME</th>
<th>ASPIRIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Platelet aggregator inhibitor.</td>
</tr>
<tr>
<td>Descriptions</td>
<td>Anti-inflammatory agent and an inhibitor of platelet function. Useful agent in the treatment of various thromboembolic diseases such as acute myocardial infarction.</td>
</tr>
<tr>
<td>Presentation</td>
<td>300 mg soluble tablet.</td>
</tr>
<tr>
<td>Administration</td>
<td>Orally (PO) - dispersed in water – if soluble or to be chewed, if not soluble. (CPG: 5/6.4.16, 4.4.16, 1/2/3.4.16).</td>
</tr>
<tr>
<td>Indications</td>
<td>Cardiac chest pain or suspected Myocardial Infarction.</td>
</tr>
<tr>
<td>Contra-Indications</td>
<td>Active symptomatic gastrointestinal (GI) ulcer. Bleeding disorder (e.g. haemophilia). Known severe adverse reaction. Patients &lt;16 years old.</td>
</tr>
<tr>
<td>Usual Dosages</td>
<td><strong>Adult:</strong> 300 mg tablet. <strong>Paediatric:</strong> Not indicated.</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>Antithrombotic. Inhibits the formation of thromboxane $A_2$, which stimulates platelet aggregation and artery constriction. This reduces clot/thrombus formation in an MI.</td>
</tr>
<tr>
<td>Long-term side effects</td>
<td>Generally mild and infrequent but high incidence of gastrointestinal irritation with slight asymptomatic blood loss, increased bleeding time, bronchospasm and skin reaction in hypersensitive patients.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Aspirin 300 mg is indicated for cardiac chest pain regardless if patient has taken anti coagulants or is already on aspirin. One 300 mg tablet in 24 hours. If the patient has swallowed an aspirin (enteric coated) preparation without chewing it, the patient should be regarded as not having taken any aspirin; administer 300 mg PO.</td>
</tr>
</tbody>
</table>
## CLINICAL LEVEL:

<table>
<thead>
<tr>
<th>DRUG NAME</th>
<th>GLUCOSE GEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Antihypoglycaemic.</td>
</tr>
<tr>
<td>Descriptions</td>
<td>Synthetic glucose paste.</td>
</tr>
<tr>
<td>Presentation</td>
<td>Glucose gel in a tube or sachet.</td>
</tr>
<tr>
<td>Administration</td>
<td>Buccal administration: Administer gel to the inside of the patient’s cheek and gently massage the outside of the cheek. (CPG: 5/6.4.19, 5/6.7.9, 4.4.19, 4.7.9, 2/3.4.19).</td>
</tr>
<tr>
<td>Indications</td>
<td>Hypoglycaemia. Blood Glucose &lt; 4 mmol/L. EFR: Known diabetic with confusion or altered levels of consciousness.</td>
</tr>
<tr>
<td>Contra-Indications</td>
<td>Known severe adverse reaction.</td>
</tr>
<tr>
<td>Usual Dosages</td>
<td><strong>Adult:</strong> 10 – 20 g buccal. Repeat prn. <strong>Paediatric:</strong> ≤ 8 years; 5 – 10 g buccal, &gt;8 years; 10 – 20 g buccal. Repeat prn.</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>Increases blood glucose levels.</td>
</tr>
<tr>
<td>Side effects</td>
<td>May cause vomiting in patients under the age of five if administered too quickly.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Glucose gel will maintain glucose levels once raised but should be used secondary to Dextrose or Glucagon to reverse hypoglycaemia. Proceed with caution: - patients with airway compromise. - altered level of consciousness.</td>
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</table>
## Glyceryl Trinitrate (GTN)

<table>
<thead>
<tr>
<th><strong>Class</strong></th>
<th>Nitrate.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Descriptions</strong></td>
<td>Special preparation of Glyceryl trinitrate in an aerosol form that delivers precisely 0.4 mg of Glyceryl trinitrate per spray.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>Aerosol spray: metered dose 0.4 mg (400 mcg).</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Sublingual (SL): Hold the pump spray vertically with the valve head uppermost. Place as close to the mouth as possible and spray under the tongue. The mouth should be closed after each dose. (CPG: 5/6.3.2, 5/6.4.16, 4.4.16, 1/2/3.4.16).</td>
</tr>
<tr>
<td><strong>Contra-Indications</strong></td>
<td>SBP &lt; 90 mmHg. Viagra or other phosphodiesterase type 5 inhibitors (Sildenafil, Tadalafil and Vardenafil) used within previous 24 hr. Known severe adverse reaction.</td>
</tr>
</tbody>
</table>

**Usual Dosages**

**Adult:** Angina or MI; 0.4 mg (400 mcg) Sublingual. Repeat at 3–5 min intervals, Max: 1.2 mg. EFR: 0.4 mg sublingual max. Pulmonary oedema; 0.8 mg (800 mcg) sublingual. Repeat x 1.

**Paediatric:** Not indicated.

**Pharmacology/Action**

Vasodilator. Releases nitric oxide which acts as a vasodilator. Dilates coronary arteries particularly if in spasm increasing blood flow to myocardium. Dilates systemic veins reducing venous return to the heart (pre load) and thus reduces the heart workload. Reduces BP.

**Side effects**

Headache, Transient Hypotension, Flushing, Dizziness.

**Additional information**

If the pump is new or it has not been used for a week or more the first spray should be released into the air.
**APPENDIX 1 - MEDICATION FORMULARY**

**CLINICAL LEVEL:**

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>OXYGEN</th>
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<tbody>
<tr>
<td>Class</td>
<td>Gas.</td>
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<tr>
<td>Descriptions</td>
<td>Odourless, tasteless, colourless gas necessary for life.</td>
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<tr>
<td>Presentation</td>
<td>D, E or F cylinders, coloured black with white shoulders. CD cylinder; white cylinder. Medical gas.</td>
</tr>
<tr>
<td>Administration</td>
<td>Inhalation via:  - high concentration reservoir (non-rebreather) mask  - simple face mask  - venturi mask  - tracheostomy mask  - nasal cannulae  - Bag Valve Mask  (CPG: Oxygen is used extensively throughout the CPGs)</td>
</tr>
<tr>
<td>Indications</td>
<td>Absent/inadequate ventilation following an acute medical or traumatic event. SpO₂ &lt; 94% adults and &lt; 96% paediatrics. SpO₂ &lt; 92% for patients with acute exacerbation of COPD.</td>
</tr>
<tr>
<td>Contra-Indications</td>
<td>Paraquat poisoning &amp; Bleomycin lung injury.</td>
</tr>
<tr>
<td>Usual Dosages</td>
<td>Adult:  Cardiac and respiratory arrest: 100%. Life threats identified during primary survey: 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 94% - 98%. For patients with acute exacerbation of COPD, administer O₂ titrate to achieve SpO₂ 92% or as specified on COPD Oxygen Alert Card. All other acute medical and trauma titrate O₂ to achieve SpO₂ 94% -98%. Paediatric:  Cardiac and respiratory arrest: 100%. Life threats identified during primary survey: 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 96% - 98%. All other acute medical and trauma titrate O₂ to achieve SpO₂ of 96% - 98%.</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>Oxygenation of tissue/organs.</td>
</tr>
<tr>
<td>Side effects</td>
<td>Prolonged use of O₂ with chronic COPD patients may lead to reduction in ventilation stimulus.</td>
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<tr>
<td>Additional information</td>
<td>A written record must be made of what oxygen therapy is given to every patient. Documentation recording oximetry measurements should state whether the patient is breathing air or a specified dose of supplemental oxygen. Consider humidifier if oxygen therapy for paediatric patients is &gt;30 minute duration. Avoid naked flames, powerful oxidising agent.</td>
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<tr>
<td>CLINICAL LEVEL:</td>
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<td>----------------</td>
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<tr>
<td><strong>DRUG NAME</strong></td>
<td><strong>SALBUTAMOL</strong></td>
</tr>
<tr>
<td>Class</td>
<td>Sympathetic agonist.</td>
</tr>
<tr>
<td>Descriptions</td>
<td>Sympathomimetic that is selective for beta-two adrenergic receptors.</td>
</tr>
<tr>
<td>Presentation</td>
<td>Nebule 2.5 mg in 2.5 mL. Nebule 5 mg in 2.5 mL. Aerosol inhaler: metered dose 0.1 mg (100 mcg).</td>
</tr>
<tr>
<td>Administration</td>
<td>Nebuliser (NEB). Inhalation via aerosol inhaler. Advanced Paramedics may repeat Salbutamol x 3. (CPG: 5/6.3.2, 5/6.3.3, 5/6.4.18, 4/5/6.6.7, 5/6.7.5, 5/6.7.8, 4.3.2, 4.4.18, 4.7.5, 4.7.8, 3.3.2, 3.7.5).</td>
</tr>
<tr>
<td>Indications</td>
<td>Bronchospasm. Exacerbation of COPD. Respiratory distress following submersion incident.</td>
</tr>
<tr>
<td>Contra-Indications</td>
<td>Known severe adverse reaction.</td>
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<td>Usual Dosages</td>
<td><strong>Adult:</strong> 5 mg NEB. Repeat at 5 min prn (APs x 3 and Ps x 1). EMT &amp; EFR: 0.1 mg metered aerosol spray x 2. <strong>Paediatric:</strong> &lt; 5 yrs - 2.5 mg NEB. ≥ 5 yrs - 5 mg NEB. Repeat at 5 min prn (APs x 3 and Ps x 1). EMT &amp; EFR: 0.1 mg metered aerosol spray x 2.</td>
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<tr>
<td>Side effects</td>
<td>Tachycardia. Tremors. Tachyarrhythmias.</td>
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<td>Long-term side effects</td>
<td>High doses may cause hypokalaemia.</td>
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<tr>
<td>Additional information</td>
<td>It is more efficient to use a volumizer in conjunction with an aerosol inhaler when administering Salbutamol. If an oxygen driven nebulizer is used to administer Salbutamol for a patient with acute exacerbation of COPD it should be limited to 6 minutes maximum.</td>
</tr>
</tbody>
</table>
Care management including the administration of medications as per level of training and division on the PHECC Register and Responder levels.

Pre-Hospital Responders and Practitioners shall only provide care management including medication administration for which they have received specific training.

### KEY:

- ✓ Authorised under PHECC CPGs
- URMPiO Authorised under PHECC CPGs under registered medical practitioner’s instructions only
- APO Authorised under PHECC CPGs to assist practitioners only (when applied to EMT, to assist Paramedic or higher clinical levels)
- ✓SA Authorised subject to special authorisation as per CPG

#### CLINICAL LEVEL

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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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### APPENDIX 2 - MEDICATION & SKILLS MATRIX

**CLINICAL LEVEL**

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<thead>
<tr>
<th>Airway &amp; Breathing Management</th>
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</thead>
<tbody>
<tr>
<td><strong>FBAO management</strong></td>
</tr>
<tr>
<td><strong>Head tilt chin lift</strong></td>
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<tr>
<td><strong>Pocket mask</strong></td>
</tr>
<tr>
<td><strong>Recovery position</strong></td>
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<tr>
<td><strong>Non rebreather mask</strong></td>
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<tr>
<td><strong>OPA</strong></td>
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<td><strong>Suctioning</strong></td>
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<td><strong>Venturi mask</strong></td>
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<td><strong>Nasal cannula</strong></td>
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<td><strong>Supraglottic airway adult</strong></td>
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<td><strong>SpO₂ monitoring</strong></td>
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<td><strong>Peak Expiratory flow</strong></td>
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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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### Trauma

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# APPENDIX 2 - MEDICATION & SKILLS MATRIX

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**Other**

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**Patient assessment**

| Assess responsiveness | ✓  | ✓  | ✓  | ✓  | ✓  | ✓ | |

PHECC Clinical Practice Guidelines - Responder
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APPENDIX 3 - CRITICAL INCIDENT STRESS MANAGEMENT

CRITICAL INCIDENT STRESS AWARENESS

Your psychological well being
As a Practitioner/Responder it is extremely important for your psychological well being that you do not expect to save every critically ill or injured patient that you treat. For a patient who is not in hospital, whether they survive a cardiac arrest or multiple trauma depends on a number of factors including any other medical condition the patient has. Your aim should be to perform your interventions well and to administer the appropriate medications within your scope of practice. You are successful as a Practitioner/Responder if you follow your CPGs well. However sometimes you may encounter a situation which is highly stressful for you, giving rise to Critical Incident Stress (CIS).

A critical incident is an incident or event which may overwhelm or threaten to overwhelm our normal coping responses. As a result of this we can experience CIS. Symptoms of CIS include some or all of the following:

Examples of physical symptoms:
- Feeling hot and flushed, sweating a lot
- Dry mouth, churning stomach
- Diarrhoea and digestive problems
- Needing to urinate often
- Muscle tension
- Restlessness, tiredness, sleep difficulties, headaches
- Increased drinking or smoking
- Overeating, or loss of appetite
- Loss of interest in sex
- Racing heart, breathlessness and rapid breathing

Examples of psychological symptoms:
- Feeling overwhelmed
- Loss of motivation
- Dreading going to work
- Becoming withdrawn
- Racing thoughts
- Confusion
- Not looking after yourself properly
- Difficulty making decisions
- Poor concentration
- Poor memory
- Anger
- Anxiety
- Depression
POST-TRAUMATIC STRESS REACTIONS

Normally the symptoms listed above subside within a few weeks or less. Sometimes, however, they may persist and develop into a post-traumatic stress reaction and you may also experience the following emotional reactions:

**Anger** at the injustice and senselessness of it all.

**Sadness and depression** caused by an awareness of how little can be done for people who are severely injured and dying, sense of a shortened future, poor concentration, not being able to remember things as well as before.

**Guilt** caused by believing that you should have been able to do more or that you could have acted differently.

**Fear** of 'breaking down' or 'losing control', not having done all you could have done, being blamed for something or a similar event happening to you or your loved ones.

**Avoiding** the scene of the trauma or anything that reminds you of it.

**Intrusive thoughts** in the form of memories or flashbacks which cause distress and the same emotions as you felt at the time.

**Irritability** outbursts of anger, being easily startled and constantly being on guard for threats.

**Feeling numb** leading to a loss of your normal range of feelings, for example, being unable to show affection, feeling detached from others.

**Experiencing signs of excessive stress**

If the range of physical, emotional and behavioural signs and symptoms already mentioned do not reduce over time (for example, after two weeks), it is important that you get support and help.
WHERE TO FIND HELP?

- Your own **CPG approved organisation** will have a support network or system. We recommend that you contact them for help and advice.

- Speak to your **GP**.

- See a **private counsellor** who has specialised in traumatic stress. (You can get names and contact numbers for these counsellors from your local co-ordinator or from the www.cism.ie).

- For a self-help guide, please go to the website: [www.cism.ie](http://www.cism.ie)

- The National Ambulance Service CISM committee has recently published a booklet called ‘Critical Incident Stress Management for Emergency Personnel’ and you can buy it by emailing info@cismnetworkireland.ie.

We would like to thank the National Ambulance Service CISM Committee for their help in preparing this section.
CPG UPDATES FOR RESPONDERS 3RD EDITION VERSION 2

i) A policy decision has been made in relation to Oxygen Therapy, which is a generic term used on the CPGs to describe the administration of oxygen. Oxygen is a medication that is recommended on the majority of CPGs at EFR level and should always be considered. If you are a registered healthcare professional and pulse oximetry is available, oxygen therapy should be titrated to between 94% & 98% for adults and 96% & 98% for paediatric patients. For patients with acute exacerbation of COPD, administer O2 titrated to SpO2 92% or as specified on COPD Oxygen Alert Card.

The oxygen therapy policy has identified the need to update the following CPGs.

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<tr>
<th>CPGS</th>
<th>THE PRINCIPAL DIFFERENCES ARE</th>
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<tr>
<td>CPG 1/2/3.4.16 Cardiac Chest Pain – Acute Coronary Syndrome</td>
<td>• If a registered healthcare professional and pulse oximetry available, oxygen therapy should be titrated to between 94% &amp; 98%.</td>
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<tr>
<td>CPG 1/2/3.4.22 Stroke</td>
<td>• If a registered healthcare professional and pulse oximetry available, oxygen therapy should be titrated to between 94% &amp; 98%.</td>
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ii) Following the publication of ILCOR guidelines 2010, PHECC has updated several CPGs to reflect best international practice. The following describe the changes of the affected CPGs.
### APPENDIX 4 - CPG UPDATES FOR RESPONDERS

<table>
<thead>
<tr>
<th>CPGS</th>
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| CPG 2/3.2.3 Primary Survey – Adult | - Control of catastrophic external haemorrhage is the first intervention during the primary survey.  
- If, following the check for breathing, the patient is not breathing the two initial ventilations are no longer recommended. The Responder should commence with chest compressions. |
| CPG 1/2/3.4.1 Basic Life Support – Adult | - Differentiation between ERC and AHA routes for the initial response to cardiac arrest has been removed.  
- ‘i.e. only gasping’ has been added to reinforce that gasping is not normal breathing.  
- The responder should commence CPR with chest compressions and continue at 30:2, compressions to rescue breaths, until the AED is available.  
- The AED pads should be attached as soon as the AED arrives on scene. If a second responder is present CPR should be ongoing during this process.  
- The compression rate has been increased to between 100 and 120 per minute. The depth has been increased to 'at least 5 cm'.  
- The responder is directed to continue CPR while the defibrillator is charging.  
- A minimum interruption of chest compressions is the aim; maximum 'hands off time' while assessing the patient/analysing should not exceed 10 seconds.  
- CFR – Advanced responders should consider insertion of a supraglottic airway after the 1st shock is delivered or attempted.  
- Responders are advised that if they are not able to ventilate, compression only CPR should be performed.  
- For information; if an implantable cardioverter defibrillator (ICD) is fitted in the patient, treat the patient as per CPG. It is safe to touch a patient with an ICD fitted even if it is firing. |
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<tr>
<th>CPGS</th>
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| CPG 1/2/3.4.4 Basic Life Support – Paediatric | • Basic Life Support – Infant & Child and CFR+ CPGs have been incorporated into this one CPG. ‘Paediatric’ includes all patients under 14 years old.  
• An AED may be applied for all paediatric patients in cardiac arrest.  
• A paediatric AED system should be used for patients under 8 years old and an adult AED used for patients 8 to 14 years old. If a paediatric AED system is not available use an adult AED.  
• Resuscitation no longer commences with 2 to 5 rescue breaths. Responders are directed to commence chest compressions and then continue CPR at 30:2, compressions to rescue breaths.  
• The compression rate has been increased to between 100 and 120 per minute. The depth is specified as being ‘1/3 depth of chest’.  
• The responder is directed to continue CPR while the defibrillator is charging if the AED permits.  
• A minimum interruption of chest compressions is the aim; maximum 'hands off time' while assessing the patient/analysing should not exceed 10 seconds.  
• Responders are advised that if they are not able to ventilate, compression only CPR should be performed. |
| CPG 1/2/3.4.5 Foreign Body Airway Obstruction – Adult | • This CPG has been redesigned to ensure compatibility with the BLS CPGs. ‘Open airway’ has been added following unconsciousness.  
• ‘Breathing normally’ has been removed to avoid confusion. |
| CPG 1/2/3.4.6 Foreign Body Airway Obstruction – Paediatric | • This CPG has been redesigned to ensure compatibility with the BLS CPGs. ‘Open airway’ has been added following unconsciousness.  
• ‘Breathing normally’ has been removed to avoid confusion. |
### APPENDIX 4 - CPG UPDATES FOR RESPONDERS

#### CPGS

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| CPG 1/2/3.4.14 Post Resuscitation Care | • This CPG has been updated to include paediatric patients.  
• If a registered healthcare professional and pulse oximetry available, oxygen therapy should be titrated to between 94% & 98% for adults and 96% & 98% for paediatric patients.  
• The recovery position is indicated only if no trauma involved.  
• CFR-Advanced responders linked to EMS may be authorised to actively cool unresponsive patients following return to spontaneous circulation. |
| CPG 3.7.3 Primary Survey – Paediatric | • Control of catastrophic external haemorrhage is the first intervention during the primary survey.  
• If, following the check for breathing, the patient is not breathing the responder is directed to the BLS paediatric CPG. There is no longer a differentiation between less than 8 and greater than 8 years old patients on this CPG. |

#### iii) Operational practice has identified the need to update the following CPGs.

| CPG 2/3.4.20 Seizure/Convulsion – Adult | • ‘Alcohol/drug withdrawal’ has been added as possible causes of seizure. |
| 2/3.6.4 Burns | • Burns – Adult and Burns – Paediatric CPGs have been combined onto one CPG. |
| 2/3.6.5 Limb Injury | • Limb fracture – Adult has been replaced with this CPG.  
• It combines the treatment of both adult and paediatric patients.  
• It has three pathways, fracture, soft tissue injury and dislocation.  
• It no longer differentiates between upper and lower limb for the application of appropriate splints. |
| CPG 2/3.7.10 Seizure/Convulsion – Paediatric | • ‘Alcohol/drug withdrawal’ has been added as possible causes of seizure. |
APPENDIX 4 - CPG UPDATES FOR RESPONDERS

NEW CPGS INTRODUCED INTO THIS VERSION INCLUDE

<table>
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<th>NEW CPGS</th>
<th>THE NEW SKILLS AND MEDICATIONS INCORPORATED INTO THE CPG ARE;</th>
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| CPG 4.3.1 Advanced Airway Management – Adult | • This is a new CPG developed for patients who are in cardiac arrest. CFR - Advanced are authorised to insert a non-inflatable supraglottic airway following appropriate skills training.  
• The key consideration when inserting an advanced airway is to ensure that CPR is ongoing. A maximum of 10 seconds 'hands off time' is permitted.  
• Two attempts at insertion of the supraglottic airway are permitted, failing that the CFR-Advanced must revert a basic airway management.  
• Once the supraglottic airway is successfully inserted the patient should be ventilated at 8 to 10 ventilations per minute, one every six seconds.  
• Unsynchronised chest compressions should be performed continuously at 100 to 120 per minute. |
| CPG 2/3.4.18 Anaphylaxis – Adult | • With the increased use of Epi-pens in the community a CPG has been developed to give direction to the responders.  
• A feature of this CPG is the patient's name, responder's name and doctor's name can be inserted onto the CPG when a doctor has prescribed the medications specified for a named patient and authorised a named responder to administer the medication. |
| 2/3.4.23 Poisons | • The Poisons CPG covers both adult and paediatric patients.  
• Responders are reminded of the potential safety issues associated with poisons.  
• Responders are also reminded of the high risk of airway, breathing and circulation issues that result following a poisoning episode.  
• To minimise time on scene responders are encouraged to collect packaging/container of poison source for the practitioners. |
## APPENDIX 4 - CPG UPDATES FOR RESPONDERS

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<th>NEW CPGS</th>
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| 2/3.4.31 Heat Related Emergencies             | - The Heat Related Emergencies CPG covers both adult and paediatric patients.  
- Active cooling and oral fluid replacement is encouraged.                                                                                                                                                                                                 |
| 2/3.6.1 External Haemorrhage                 | - The External Haemorrhage CPG covers both adult and paediatric patients.  
- The PEEP method of controlling haemorrhage is first line treatment.  
- Early recognition of shock following haemorrhage is paramount to survival.                                                                                                                                                                           |
| CPG 2/3.7.8 Anaphylaxis – Paediatric          | - With the increased use of Epi-pens in the community a CPG has been developed to give direction to the responders.  
- A feature of this CPG is that the patient’s name, responder’s name and doctor’s name can be inserted onto the CPG when a doctor has prescribed the medications specified for a named patient and authorised a named responder to administer the medication. |
PRE-HOSPITAL DEFIBRILLATION POSITION PAPER

Defibrillation is a lifesaving intervention for victims of sudden cardiac arrest (SCA). Defibrillation in isolation is unlikely to reverse SCA unless it is integrated into the chain of survival. The chain of survival should not be regarded as a linear process with each link as a separate entity but once commenced with ‘early access’ the other links, other than ‘post return of spontaneous circulation (ROSC) care’, should be operated in parallel subject to the number of people and clinical skills available.

Cardiac arrest management process

ILCOR guidelines 2010 identified that without ongoing CPR, survival with good neurological function from SCA is highly unlikely. Defibrillators in AED mode can take up to 30 seconds between analysing and charging during which time no CPR is typically being performed. The position below is outlined to ensure maximum resuscitation efficiency and safety.
APPENDIX 5 - PRE-HOSPITAL DEFIBRILLATION

POSITION

1. **Defibrillation mode**
   
   1.1 Advanced Paramedics, and health care professionals whose scope of practice permits, should use defibrillators in manual mode for all age groups.
   
   1.2 Paramedics may consider using defibrillators in manual mode for all age groups.
   
   1.3 EMTs and Responders shall use defibrillators in AED mode for all age groups.

2. **Hands off time (time when chest compressions are stopped)**

   2.1 Minimise hands off time, absolute maximum 10 seconds.
   
   2.2 Rhythm and/or pulse checks in manual mode should take no more than 5 to 10 seconds and CPR should be recommenced immediately.
   
   2.3 When defibrillators are charging CPR should be ongoing and only stopped for the time it takes to press the defibrillation button and recommenced immediately without reference to rhythm or pulse checks.
   
   2.4 It is necessary to stop CPR to enable some AEDs to analyse the rhythm. Unfortunately this time frame is not standard with all AEDs. As soon as the analysing phase is completed and the charging phase has begun CPR should be recommenced.

3. **Energy**

   3.1 Biphasic defibrillation is the method of choice.
   
   3.2 Biphasic truncated exponential (BTE) waveform energy commencing at 150 to 200 joules shall be used.
   
   3.3 If unsuccessful the energy on second and subsequent shocks shall be as per manufacturer of defibrillator instructions.
   
   3.4 Monophasic defibrillators currently in use, although not as effective as biphasic defibrillators, may continue to be used until they reach the end of their lifespan.

4. **Safety**

   4.1 For the short number of seconds while a patient is being defibrillated no person should be in contact with the patient.
   
   4.2 The person pressing the defibrillation button is responsible for defibrillation safety.
   
   4.3 Defibrillation pads should be used as opposed to defibrillation paddles for pre-hospital defibrillation.
5 Defibrillation pad placement
5.1 The right defibrillation pad should be placed mid clavicular directly under the right clavicle.
5.2 The left defibrillation pad should be placed mid-axillary with the top border directly under the left nipple.
5.3 If a pacemaker or Implantable Cardioverter Defibrillator (ICD) is fitted, defibrillator pads should be placed at least 8 cm away from these devices. This may result in anterior and posterior pad placement which is acceptable.

6 Paediatric defibrillation
6.1 Paediatric defibrillation refers to patients less than 8 years of age.
6.2 Manual defibrillator energy shall commence and continue with 4 joules/Kg.
6.3 AEDs should use paediatric energy attenuator systems.
6.4 If a paediatric energy attenuator system is not available an adult AED may be used.
6.5 It is extremely unlikely to ever have to defibrillate a child less than 1 year old. Nevertheless, if this were to occur the approach would be the same as for a child over the age of 1. The only likely difference being, the need to place the defibrillation pads anterior and posterior, because of the infant’s small size.

7 Implantable Cardioverter Defibrillator (ICD)
7.1 If an Implantable Cardioverter Defibrillator (ICD) is fitted in the patient, treat as per CPG. It is safe to touch a patient with an ICD fitted even if it is firing.