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.
Practitioner

Emergency Medical Technician
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FOREWORD

It is my pleasure to write the foreword to this PHECC Clinical Handbook comprising Clinical Practice Guidelines (CPGs) and Medication Formulary. There are now 236 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>
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<tr>
<td>Advanced Paramedic</td>
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<tr>
<td>Advanced Life Support</td>
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<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>
</tr>
<tr>
<td>General Practitioner</td>
<td>GP</td>
</tr>
<tr>
<td>Glasgow Coma Scale</td>
<td>GCS</td>
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<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>
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<tr>
<td>Intramuscular</td>
<td>IM</td>
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<tr>
<td>Intranasal</td>
<td>IN</td>
</tr>
<tr>
<td>Intravenous</td>
<td>IO</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>
ACCEPTED ABBREVIATIONS (Cont.)

Less than or equal to .......................................................... \leq 
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.

PROJECT LEADER & EDITOR
Mr Brian Power, Programme Development Officer, PHECC.

INITIAL CLINICAL REVIEW
Dr Geoff King, Director, PHECC.
Ms Pauline Dempsey, Programme Development Officer, PHECC.
Ms Jacqueline Egan, Programme Development Officer, PHECC.

MEDICAL ADVISORY GROUP
Dr Zelie Gaffney, (Chair) General Practitioner
Dr David Janes, (Vice Chair) General Practitioner
Prof Gerard Bury, Professor of General Practitioner University College Dublin
Dr Niamh Collins, Locum Consultant in Emergency Medicine, St James’s Hospital
Prof Stephen Cusack, Consultant in Emergency Medicine, Area Medical Advisor, National Ambulance Service South
Mr Mark Doyle, Consultant in Emergency Medicine, Deputy Medical Director HSE National Ambulance Service
Mr Conor Egleston, Consultant in Emergency Medicine, Our lady of Lourdes Hospital, Drogheda

Mr Michael Garry, Paramedic, Chair of Accreditation Committee
Mr Macartan Hughes, Advanced Paramedic, Head of Education & Competency Assurance, HSE National Ambulance Service
Mr Lawrence Kenna, Advanced Paramedic, Education & Competency Assurance Manager, HSE National Ambulance Service
Mr Paul Lambert, Advanced Paramedic, Station Officer Dublin Fire Brigade
Mr Declan Lonergan, Advanced Paramedic, Education & Competency Assurance Manager, HSE National Ambulance Service
Mr Paul Meehan, Regional Training Officer, Northern Ireland Ambulance Service
Dr David Menzies, Medical Director AP programme NASC/UCD
Dr David McManus, Medical Director, Northern Ireland Ambulance Service
Dr Peter O’Connor, Consultant in Emergency Medicine, Medical Advisor Dublin Fire Brigade
Mr Cathal O’Donnell, Consultant in Emergency Medicine, Medical Director HSE National Ambulance Service
Mr John O’Donnell, Consultant in Emergency Medicine, Area Medical Advisor, National Ambulance Service West
Mr Frank O’Malley, Paramedic, Chair of Clinical Care Committee
Mr Martin O’Reilly, Advanced Paramedic, District Officer Dublin Fire Brigade
Dr Sean O’Rourke, Consultant in Emergency Medicine, Area Medical Advisor, National Ambulance Service North Leinster
ACKNOWLEDGEMENTS

Ms Valerie Small, Nurse Practitioner, St James's Hospital, Vice Chair Council
Dr Sean Walsh, Consultant in Paediatric Emergency Medicine, Our Lady's Hospital for Sick Children Crumlin
Mr Brendan Whelan, Advanced Paramedic, Education & Competency Assurance Manager, HSE National Ambulance Service

EXTERNAL CONTRIBUTORS
Mr Fergal Hickey, Consultant in Emergency Medicine, Sligo General Hospital
Mr George Little, Consultant in Emergency Medicine, Naas Hospital
Mr Richard Lynch, Consultant in Emergency Medicine, Midlands Regional Hospital Mullingar
Ms Celena Barrett, Chief Fire Officer, Kildare County Fire Service.
Ms Diane Brady, CNM II, Delivery Suite, Castlebar Hospital.
Dr Donal Collins, Chief Medical Officer, An Garda Síochána.
Mr Tony Heffernan, Assistant Director of Nursing, HSE Mental Health Services.
Prof Peter Kelly, Consultant Neurologist, Mater University Hospital.
Dr Brian Maurer, Director of Cardiology St Vincent's University Hospital.
Dr Regina McQuillan, Palliative Medicine Consultant, St James's Hospital.
Dr Sean Murphy, Consultant Physician in Geriatric Medicine, Midland Regional Hospital, Mullingar.
Ms Annette Thompson, Clinical Nurse Specialist, Beaumont Hospital.
Dr Joe Tracey, Director, National Poisons Information Centre.
Mr Pat O'Riordan, Specialist in Emergency Management, HSE.
Prof Peter Weedle, Adjunct Prof of Clinical Pharmacy, National University of Ireland, Cork.
Dr John Dowling, General Practitioner, Donegal

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A special thanks to all the PHECC team who were involved in this project from time to time, in particular Marion O’Malley, Programme Development Support Officer and Marie Ni Mhurchu, Client Services Manager, for their commitment to ensure the success of the project.
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 2012 edition offers current best practice guidance. The guidelines have expanded in number and scope – with 60 CPGs in total for Emergency Medical Technicians, covering such topics as Post Resuscitation Care for Paediatric patients and End of Life – DNR 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 Practitioners in delivering excellent pre-hospital care.

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

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 Practitioner decides if a CPG should be applied based on patient assessment and the clinical impression. The Practitioner must work in the best interest of the patient within the scope of practice for his/her clinical level on the PHECC Register. Consultation with fellow Practitioners and or medical practitioners in challenging clinical situations is strongly advised.

The CPGs herein may be implemented provided:
1. The Practitioner is in good standing on the PHECC Practitioner's Register.
2. The Practitioner is acting on behalf of an organisation (paid or voluntary) that is approved by PHECC to implement the CPGs.
3. The Practitioner is authorised by the organisation on whose behalf he/she is acting to implement the specific CPG.
4. The Practitioner has received training on - and is competent in - the skills and medications specified in the CPG being utilized.

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

Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>Adult</td>
<td>a patient of 14 years or greater, unless specified on the CPG.</td>
</tr>
<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>
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</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 & medications on the Patient Care Report (PCR) are consistent principles throughout the guidelines and reflect the practice of Practitioners at work. Care principles are the foundations for risk management and the avoidance of error.

**Care Principles**

1. **Ensure the safety of yourself, other emergency service personnel, your patients and the public:**
   - review all Ambulance Control Centre dispatch information.
   - 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 in a timely fashion, particularly for higher clinical levels.
   - 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 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 as soon as possible after arrival on the scene as appropriate.

3. **Ensure adequate ventilation and oxygenation.**

4. **Monitor and record patient's vital observations.**

5. **Optimise tissue perfusion.**

6. **Identify and manage other conditions.**

7. **Provide appropriate pain relief.**

8. **Place the patient in the appropriate posture according to the presenting condition.**

9. **Ensure the maintenance of normal body temperature (unless CPG indicates otherwise).**
10 Maintain responsibility for patient care until handover to an appropriate Practitioner. Do not hand over responsibility for care of a patient to a Practitioner/Responder who is less qualified or experienced unless the care required is within their scope of practice.

11 Arrange transport to an appropriate medical facility as necessary and in an appropriate time frame:
   • On-scene times for life-threatening conditions, other than cardiac arrest, should not exceed 10 minutes.
   • Following initial stabilisation other treatments should be commenced/continued en-route.

12 Provide reassurance at all times.

Completing a PCR for each patient is paramount in the risk management process and users of the CPGs must be committed to this process.

**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 Practitioner, 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 Practitioner in presenting to the acute hospital 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 Practitioner. In the event of another Practitioner or Responder initiating care during an acute episode, the Practitioner 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.

In the absence of a more qualified Practitioner, the Practitioner providing care during transport shall be designated the clinical leader as soon as practical.

**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 2012 Edition CPGs**
The 2012 Edition CPGs continue to be published in sections.

- Appendix 1, the Medication Formulary, is an important adjunct supporting decision-making by the Practitioner.
- 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 Emergency Medical Technician

**Codes explanation**

<table>
<thead>
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<th>Code</th>
<th>Description</th>
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<tr>
<td>EMT</td>
<td>Emergency Medical Technician (Level 4) for which the CPG pertains</td>
</tr>
<tr>
<td>P</td>
<td>Paramedic (Level 5) for which the CPG pertains</td>
</tr>
<tr>
<td>AP</td>
<td>Advanced Paramedic (Level 6) for which the CPG pertains</td>
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</table>

<table>
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<th>Sequence step</th>
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<th>Details</th>
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<tr>
<td>A sequence (skill) to be performed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A mandatory sequence (skill) to be performed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A decision process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consider treatment options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reassess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request ALS</td>
<td></td>
<td></td>
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<tr>
<td>Consider ALS</td>
<td></td>
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<table>
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<td>4/5/6.1</td>
<td>CPG numbering system</td>
<td>4/5/6 = clinical levels to which the CPG pertains</td>
</tr>
<tr>
<td>Version 2, 07/11</td>
<td></td>
<td>x = section in CPG manual, y = CPG number in sequence</td>
</tr>
<tr>
<td>4/5/6.x.y</td>
<td></td>
<td>mm/yy = month/year CPG published</td>
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<table>
<thead>
<tr>
<th>Medication, dose &amp; route</th>
<th>Description</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>A medication which may be administered by an EMT or higher clinical level</td>
<td></td>
<td>The medication name, dose and route is specified</td>
</tr>
<tr>
<td>A medication which may be administered by a Paramedic or higher clinical level</td>
<td></td>
<td>The medication name, dose and route is specified</td>
</tr>
<tr>
<td>A medication which may be administered by an Advanced Paramedic</td>
<td></td>
<td>The medication name, dose and route is specified</td>
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</tbody>
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<th>Start from</th>
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<tbody>
<tr>
<td>A clinical condition that may precipitate entry into the specific CPG</td>
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<thead>
<tr>
<th>A direction to go to a specific CPG following a decision process</th>
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<th>Details</th>
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<tr>
<td>Note: only go to the CPGs that pertain to your clinical level</td>
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<th>Go to xxx CPG</th>
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<th>Details</th>
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<table>
<thead>
<tr>
<th>A parallel process</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which may be carried out in parallel with other sequence steps</td>
<td></td>
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<table>
<thead>
<tr>
<th>A cyclical process in which a number of sequence steps are completed</th>
<th>Description</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Emergency Medical Technician or lower clinical levels not permitted this route</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport to an appropriate medical facility and maintain treatment en-route</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>If no ALS available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport to an appropriate medical facility and maintain treatment en-route, if having contacted Ambulance Control there is no ALS available</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider requesting an ALS response, based on the clinical findings</td>
<td>Description</td>
<td>Details</td>
</tr>
<tr>
<td>Special instructions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which the Practitioner must follow</td>
<td></td>
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<table>
<thead>
<tr>
<th>A skill or sequence that only pertains to Paramedic or higher clinical levels</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special authorisation</td>
<td></td>
<td>This authorises the Practitioner to perform an intervention under specified conditions</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Consider requesting a Paramedic response, based on the clinical findings</th>
<th>Description</th>
<th>Details</th>
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**Note:** Only go to the CPGs that pertain to your clinical level.
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The primary survey is focused on establishing the patient’s clinical status and only applying interventions when they are essential to maintain life. It should be completed within one minute of arrival on scene.

- **A** - Airway patent & protected
  - Yes
  - No
    - Head tilt/ chin lift
      - Yes
      - No
      - Suction, OPA
      - NPA

- **B** - Adequate ventilation
  - Yes
  - No
  - Consider

- **C** - Adequate circulation
  - Yes
  - No
  - AVPU assessment

**Medical issue**
- Take standard infection control precautions
- Consider pre-arrival information
- Scene safety
- Scene survey
- Scene situation
- Assess responsiveness
- Life threatening
  - Clinical status decision
    - Life threatening
      - Request ALS
      - Go to appropriate CPG
    - Serious not life threat
      - Consider ALS
      - Go to Secondary Survey CPG
    - Non serious or life threat

Reference: ILCOR Guidelines 2010
The primary survey is focused on establishing the patient’s clinical status and only applying interventions when they are essential to maintain life. It should be completed within one minute of arrival on scene.

**Primary Survey Trauma – Adult**

1. **Trauma** → **Take standard infection control precautions**
2. **Consider pre-arrival information**
3. **Scene safety** → **Scene survey** → **Scene situation**
4. **Control catastrophic external haemorrhage**
5. **Mechanism of injury suggestive of spinal injury** → **C-spine control**
6. **Assess responsiveness**
7. **A** Airway patent & protected
   - **Yes** → **Suction, OPA** → **Jaw thrust**
   - **No** → **B** Adequate ventilation
     - **Yes**
     - **C** Adequate circulation
       - **Yes** → **AVPU assessment**
       - **No** → **Consider Oxygen therapy**
     - **No** → **Treat life threatening injuries only at this point**
9. **Life threatening** → **Clinical status decision**
   - **Non serious or life threat** → **Go to Secondary Survey CPG**
   - **Serious not life threat** → **Go to appropriate CPG**
   - **Request ALS**

**Reference:** ILCOR Guidelines 2010
SECTION 2 - PATIENT ASSESSMENT

EMT

Secondary Survey Medical – Adult

Primary Survey

Markers identifying acutely unwell
Cardiac chest pain
Acute pain > 5

Identify positive findings and initiate care management

Go to appropriate CPG

Record vital signs

Patient acutely unwell

Yes

No

Focused medical history of presenting complaint

SAMPLE history

Check for medications carried or medical alert jewellery

Identify positive findings and initiate care management

Go to appropriate CPG

Request ALS

Pre-Hospital Emergency Care Council

Gleadle, J. 2003, History and Examination at a glance, Blackwell Science
Rees, JE, 2003, Early Warning Scores, World Anaesthesia Issue 17, Article 10

PHECC Clinical Practice Guidelines - Emergency Medical Technician
SECTION 2 - PATIENT ASSESSMENT

Secondary Survey Trauma – Adult

Primary Survey

Markers for multi-system trauma present

Yes

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

Identify positive findings and initiate care management

Go to appropriate CPG


Markers for multi-system trauma
Systolic BP < 90
Respiratory rate < 10 or > 29
Heart rate > 120
AVPU = V, P or U on scale
Mechanism of Injury

Request ALS

EMT

EMT
**SECTION 2 - PATIENT ASSESSMENT**

**Pain Management – Adult**

The general principle in pain management is to start at the bottom rung of the pain ladder, and then to climb the ladder if pain is still present. Practitioners, depending on their scope of practice, may make a clinical judgement and commence pain relief on a higher rung.

**Analogue Pain Scale**

0 = no pain …… 10 = unbearable

**Pain assessment**

Administer pain medication based on pain assessment and pain ladder recommendations.

Decisions to give analgesia must be based on clinical assessment and not directly on a linear scale.

**Moderate pain**

(3 to 4 on pain scale)

- Paracetamol 1 g PO and/or
- Ibuprofen 400 mg PO and/or
- Nitrous Oxide & Oxygen

Consider other non-pharmacological interventions

Reassess and move up the pain ladder if appropriate.

**Minor pain**

(2 to 3 on pain scale)

- Paracetamol 1 g PO

Consider other non-pharmacological interventions

Go back to originating CPG

**Severe pain**

(≥ 5 on pain scale)

- Morphine 2 mg IV and/or
- Ondansetron 4 mg IV slowly

Refer to World Health Organization, Pain Ladder

Repeat Morphine at not < 2 min intervals if indicated.

Max 10 mg

For musculoskeletal pain Max 16 mg

Consider other non-pharmacological interventions

Reference: World Health Organization, Pain Ladder

Special Authorisation:
Registered Medical Practitioners may authorise the use of IM Morphine by Paramedic or EMT practitioners for a specific patient in an inaccessible location.

Special Authorisation:
Advanced Paramedics are authorised to administer Morphine up to 10 mg IM if IV not accessible, the patient is cardiovascularly stable and no cardiac chest pain present.
Advanced Airway Management – Adult

Adult Cardiac arrest

- Able to ventilate
  - Yes
    - Go to BLS-Adult CPG
  - No
    - Consider option of advanced airway

- Consider FBAO

- Check supraglottic airway placement after each patient movement or if any patient deterioration

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

- Maintain adequate ventilation and oxygenation throughout procedures

- Successful
  - Yes
    - Go to appropriate CPG
  - No
    - 2nd attempt Supraglottic Airway insertion

- Successful (Supraglottic Airway insertion)
  - Yes
    - Go to appropriate CPG
  - No
    - Revert to basic airway management

- Continue ventilation and oxygenation

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

Reference: ILCOR Guidelines 2010

Equipment list
- Non-inflatable supraglottic airway

4.3.1 03/11 CFR - A EMT
SECTION 3 - RESPIRATORY EMERGENCIES

Inadequate Respirations – Adult

Respiratory difficulties

Assess and maintain airway

Oxygen therapy

Respiratory assessment

Inadequate rate or depth
RR < 10

Request ALS

Positive pressure ventilations
Max 10 per minute

Audible wheeze

Yes

Salbutamol, 2 puffs,
(0.2 mg) metered aerosol

No

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

ECG & SpO2 monitoring

Life threatening asthma
Any one of the following in a patient with severe asthma;
SpO2 < 92%
Silent chest
Cyanosis
Feeble respiratory effort
Bradycardia
Arrhythmia
Hypotension
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 3 - RESPIRATORY EMERGENCIES

Exacerbation of COPD

Dyspnoea

History of COPD

Yes

Oxygen Therapy

1. if O2 alert card issued follow directions.
2. if no O2 alert card, commence therapy at 28%
3. administer O2 titrated to SpO2 92%

No

ECG & SpO2 monitor

Request ALS

Adequate respirations

Yes

Go to Inadequate Respirations CPG

No

An exacerbation of COPD is defined as:
An event in the natural course of the disease characterised by a change in the patient’s baseline dyspnoea, cough and/or sputum beyond day-to-day variability sufficient to warrant a change in management. (European Respiratory Society)
SECTION 4 - MEDICAL EMERGENCIES

Basic Life Support – Adult

Cardiac Arrest

- Attach defibrillation pads
- Commence CPR while defibrillator is being prepared only if 2nd person available

Shockable: VF or pulseless VT
Non-Shockable: Asystole or PEA

Assess Rhythm

- Go to VF/Pulseless VT CPG
- Go to Post Resuscitation Care CPG
- Go to Asystole CPG
- Go to PEA CPG

Immediately resume CPR x 2 minutes

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

Rhythm check *

*- +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm

* Reference: ILCOR Guidelines 2010

Chest compressions:
- Rate: 100 to 120/min
- Depth: at least 5 cm

Ventilations:
- Rate: 10/min (1 every 6 sec)
- Volume: 500 to 600 mL

Chest mobilisation of 3 to 4 practitioners / responders on site to assist with cardiac arrest management

Change defibrillator to manual mode

Consider changing defibrillator to manual mode

Continued CPR while defibrillator is charging

**PHECC Clinical Practice Guidelines - Emergency Medical Technician**

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Basic Life Support – Paediatric (≤ 13 Years)

Cardiac arrest or pulse < 60 per minute with signs of poor perfusion

Give 5 rescue ventilations

Request ALS

Commence chest compressions

Continue CPR (30:2) until defibrillator is attached

Yes < 6 years

No

Shockable

VF or pulseless VT

Assess Rhythm

Non - Shockable

Asystole or PEA

Give 1 shock

Immediately resume CPR x 2 minutes

Rhythm check *

Go to VF / Pulseless VT CPG

VF / VT

ROSC

Go to Post Resuscitation Care CPG

Asystole / PEA

Go to Asystole / PEA CPG

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.

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm

Reference: ILCOR Guidelines 2010
SECTION 4 - MEDICAL EMERGENCIES

**Foreign Body Airway Obstruction – Adult**

**FBAO**

- **Are you choking?**
  - Yes: 
    - **FBAO Severity**
      - Severe (ineffective cough)
        - **Conscious**
          - Yes: 
            - **1 to 5 back blows followed by 1 to 5 abdominal thrusts as indicated**
          - No: 
            - **Request ALS**
  - No: 
    - **Conscious**
      - Yes: 
        - **Encourage cough**
      - No: 
        - **One cycle of CPR**
          - Effective
            - Yes: 
              - **Adequate ventilations**
            - No: 
              - Go to BLS Adult CPG
          - Effective
            - Yes: 
              - **Consider Oxygen therapy**
            - No: 
              - Go to BLS Adult CPG

**After each cycle of CPR open mouth and look for object. If visible attempt once to remove it.**
SECTION 4 - MEDICAL EMERGENCIES

Foreign Body Airway Obstruction – Paediatric (≤ 13 years)

1. Are you choking?
   - Yes: FBAO Severity
   - No: Severe (ineffective cough)

2. Severe (ineffective cough)
   - No: Conscious
     - Yes: 1 to 5 back blows followed by 1 to 5 thrusts (child – abdominal thrusts) (infant – chest thrusts) as indicated
   - No: One cycle of CPR
     - Effective: Yes
     - No: One cycle of CPR
       - Effective: Yes
       - No: Go to BLS Paediatric CPG

3. FBAO Severity
   - Mild (effective cough)
     - Yes: Encourage cough
     - No: Breathing adequately
       - Yes: Positive pressure ventilations (12 to 20/ min)
       - No: Consider Oxygen therapy

4. After each cycle of CPR open mouth and look for object. If visible attempt once to remove it
SECTION 4 - MEDICAL EMERGENCIES

VF or Pulseless VT – Adult

**VF or VT arrest**

**Defibrillate**

**VF/VT**

Rhythm check *

If torsades de pointes, consider
Magnesium Sulphate 2 g IV/IO

If Asystole, consider transport to ED if no change after 20 minutes resuscitation

Consider causes and treat as appropriate:
- Hydrogen ion acidosis
- Hyper/hypokalaemia
- Hypothermia
- Hypovolaemia
- Hypoxygen
- Thrombosis – pulmonary
- Tension pneumothorax
- Thrombus – coronary
- Tamponade – cardiac
- Toxins
- Trauma

**Clinical leader to monitor quality of CPR**

**With CPR ongoing maximum hands off time 10 seconds Continue CPR during charging**

**Epinephrine (1:10 000) 1 mg IV/IO**
Every 3 to 5 minutes prn

**NaCl IV/IO 500 mL** (use as flush)

**Amiodarone 300 mg (5 mg/kg) IV/IO**
2nd dose (if required)

Amiodarone 150 mg (2.5 mg/kg) IV/IO

If Tricyclic Antidepressant Toxicity consider
Sodium Bicarbonate 8.4% 50 mL IV

If no ALS available

**Mechanical CPR device is the optimum care during transport**

**Consider use of waveform capnography**

**Special Authorisation:**
Advanced Paramedics are authorised to substitute Amiodarone with a one off bolus of Lidocaine (1-1.5 mg/kg IV) if Amiodarone is not available

**EMT**

**AP**

Immediate IO access if IV not immediately accessible

**From BLS Adult CPG**

**Goto Post Resuscitation Care CPG**

**Goto PEA CPG**

**Goto Asystole CPG**

**Consider transport to ED if no change after 20 minutes resuscitation**

Reference: ILCOR Guidelines 2010

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm
VF or Pulseless VT – Paediatric (≤ 13 years)

From BLS Child CPG

Immediate IO access if IV not immediately accessible

Go to Post Resuscitation Care CPG

Defibrillate (4 joules/Kg)

VF/VT

Rhythm check *

VF/VT

Yes

No

VF or VT arrest

Check blood glucose

Following successful Advanced Airway management:
   i) Ventilate at 12 to 20 per minute
   ii) Unsynchronised chest compressions continuous at 100 to 120 per minute

Transmit to ED if no change after 10 minutes resuscitation

Immediate IO access if IV not immediately accessible

If no ALS available

Consider causes and treat as appropriate:
   - Hydrogen ion acidosis
   - Hyper/hypokalaemia
   - Hypothermia
   - Hypovolaemia
   - Hypoxia
   - Thrombosis – pulmonary
   - Tension pneumothorax
   - Thrombus – coronary
   - Tamponade – cardiac
   - Toxins
   - Trauma

Clinical leader to monitor quality of CPR

Initial Epinephrine between 2nd and 4th shock

With CPR ongoing maximum hands off time 10 seconds
Continue CPR during charging

Epinephrine (1:10 000), 0.01 mg/kg IV/IO
Repeat every 3 to 5 minutes prn

Refractory VF/VT post Epinephrine

Amdorone, 5 mg/kg, IV/IO

Initial Epinephrine between 2nd and 4th shock

If no ALS available

Consider use of waveform capnography

Initiate mobilisation of 3 to 4 practitioners / responders on site to assist with cardiac arrest management

Reference: ILCOR Guidelines 2010

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm
**Symptomatic Bradycardia – Paediatric (≤ 13 years)**

- **Signs of inadequate perfusion**
  - Tachycardia
  - Diminished/absent peripheral pulses
  - Tachypnoea
  - Irritability/confusion/ALoC
  - Cool extremities, mottling
  - Delayed capillary refill

- **ECG & SpO2 monitoring**
- **Continue CPR**
- **Positive pressure ventilations** (12 to 20/min)
- **Symptomatic Bradycardia**
- **Oxygen therapy**
  - **Positive pressure ventilations** (12 to 20/min)
- **Request ALS**
  - **HR < 60** & signs of inadequate perfusion
  - **Yes**
    - **CPR**
    - **ECG & SpO2 monitoring**
    - **NaCl (0.9%) 20 mL/Kg IV/IO**
    - **Epinephrine (1:10 000) 0.01 mg/kg (10 mcg/kg) IV/IO**
      - **Persistent bradycardia**
        - **No**
        - **Immediate IO access if IV not immediately accessible**
        - **Continue CPR**
        - **If no ALS available**
      - **Yes**
        - **Consider advanced airway management if prolonged CPR**
        - **Epinephrine (1:10 000) 0.01 mg/kg (10 mcg/kg) IV/IO**
          - **Every 3 – 5 min prn**
  - **No**

SECTION 4 - MEDICAL EMERGENCIES

**4.4.10**

*Asystole – Adult*

**From BLS Adult CPG**

- Asystole

**Rhythm check**

- Yes
  - FPVF
  - PEA

- No
  - ROSC

**Initiate mobilisation of 3 to 4 practitioners / responders on site to assist with cardiac arrest management**

**Consider transport to ED if no change after 20 minutes resuscitation**

**Consider mechanical CPR assist**

**With CPR ongoing maximum hands off time 10 seconds**

**Drive smoothly**

**Mechanical CPR device is the optimum care during transport**

**Clinical leader to monitor quality of CPR**

---

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm

Reference: ILCOR Guidelines 2010
SECTION 4 - MEDICAL EMERGENCIES

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Pulseless Electrical Activity – Adult

From BLS Adult CPG

Immediate IO access if IV not immediately accessible

Go to Post Resuscitation Care CPG

Go to VF / Pulseless VT CPG

Consider causes and treat as appropriate:
- Hydrogen ion acidosis
- Hyper/hypokalaemia
- Hypothermia
- Hypovolaemia
- Hypoxia
- Thrombosis – pulmonary
- Tension pneumothorax
- Thrombus – coronary
- Tamponade – cardiac
- Toxins
- Trauma

With CPR ongoing maximum hands off time 10 seconds

If Tricyclic Antidepressant Toxicity consider Sodium Bicarbonate 8.4% 50 mL IV

Reference: ILCOR Guidelines 2010

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm

Clinical leader to monitor quality of CPR

Mechanical CPR device is the optimum care during transport

AP

Consider use of waveform capnography

NaCl 20 mL/Kg IV/IO

Consider transport to ED if no change after 20 minutes resuscitation

If no ALS available

Initiate mobilisation of 3 to 4 practitioners / responders on site to assist with cardiac arrest management

Advanced airway management

Consider mechanical CPR assist

Go to VF / Pulseless VT CPG

Epinephrine (1:10 000) 1 mg IV/ IO Every 3 to 5 minutes prn

If Tricyclic Antidepressant Toxicity consider Sodium Bicarbonate 8.4% 50 mL IV

NaCl IV/IO 500 mL (use as flush)

Go to VF / Pulseless VT CPG

Mechanical CPR device is the optimum care during transport

Clinical leader to monitor quality of CPR

S4
Asystole/PEA – Paediatric (≤ 13 years)

From BLS Child CPG

Immediate IO access if IV not immediately accessible

Go to Post Resuscitation Care CPG

Go to VF / Pulseless VT CPG

VF/VT

Asystole/PEA arrest

Advanced airway management

Check blood glucose

Epinephrine (1:10 000), 0.01 mg/kg IV/IO

Repeat every 3 to 5 minutes prn

Rhythm check *

Asystole/PEA

Yes

No

Drive smoothly

With CPR ongoing maximum hands off time 10 seconds

Consider causes and treat as appropriate:
- Hydrogen ion acidosis
- Hyper/hypokalaemia
- Hypothermia
- Hypovolaemia
- Hypoxia
- Thrombosis – pulmonary
- Tension pneumothorax
- Thrombus – coronary
- Tamponade – cardiac
- Toxins
- Trauma

Consider fluid challenge: NaCl 20 mL/Kg IV/IO

Clinical leader to monitor quality of CPR

Following successful Advanced Airway management:
- Ventilate at 12 to 20 per minute.
- Unsynchronised chest compressions continuous at 100 to 120 per minute

Immediate IO access if IV not immediately accessible

Initiate mobilisation of 3 to 4 practitioners / responders on site to assist with cardiac arrest management

Transport to ED if no change after 10 minutes resuscitation

If no ALS available

Consider use of waveform capnography

Reference: ILCOR Guidelines 2010

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm

Reference: PHECC Clinical Practice Guidelines - Emergency Medical Technician

Pre-Hospital Emergency Care Council

SECTION 4 - MEDICAL EMERGENCIES
Return of Spontaneous Circulation

Maintain patient at rest

Spontaneous Circulation

Conscious

Yes

No

Adequate ventilation

Yes

No

Positive pressure ventilations

Max 10 per minute

Recovery position

Consider active cooling if unresponsive

Maintain patient at rest

ECG & SpO2 monitoring

Monitor vital signs

Check blood glucose

Maintain care until handover to appropriate Practitioner

If no ALS available

Drive smoothly

Equipment list

Cold packs

Titrated O2 to 94% - 98%

For active cooling place cold packs at arm pit, groin & abdomen

Reference: ILCOR Guidelines 2010
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

Oxygen therapy

Apply 3 lead ECG & SpO2 monitor

Aspirin, 300 mg PO

Monitor vital signs

Chest Pain

GTN, 0.4 mg SL
Repeat to max of 1.2 mg SL prn

EMT

Time critical commence transport to definitive care ASAP

Oxygen therapy
Maintain SpO2 between 94% to 98%
(lower range if COPD)
Symptomatic Bradycardia – Adult

- Oxygen therapy
- Atropine, 0.5 mg IV
  Repeat at 3 to 5 min intervals prn to max 3 mg
- ECG & SpO2 monitoring
- Request ALS
- 12 lead ECG
**SECTION 4 - MEDICAL EMERGENCIES**

**4.4.18**

**Version 2, 03/11**

**Allergic Reaction/Anaphylaxis – Adult**

**EMT**

**Allergic reaction**

**Mild**
- Monitor reaction
- Salbutamol 2 puffs (0.2 mg) metered aerosol
- Reassess
- ECG & SpO2 monitor
- Deteriorates
- Consider EMT

**Moderate**
- Severe/ anaphylaxis
- Oxygen therapy
- Epinephrine administered pre arrival? (within 5 minutes)
- Yes
  - Epinephrine auto injection
  - Request ALS
- No
- Patient prescribed Epinephrine auto injection
- Yes
  - Epinephrine (1:1 000) 300 mcg Auto injection
- No
- ECG & SpO2 monitor

**Severe/ anaphylaxis**
- Consider subject to conditions above
- Epinephrine (1:1 000) 300 mcg Auto injection
- Reassess

**Mild**
- Urticaria and or angio oedema

**Moderate**
- Mild symptoms + simple bronchospasm

**Severe/ anaphylaxis**
- Moderate symptoms + haemodynamic and or respiratory compromise
**Glycaemic Emergency – Adult**

**Abnormal blood glucose level**

- **Blood Glucose < 4 mmol/L**
  - Yes: Glucose gel, 10-20 g buccal or Sweetened drink
  - No: Allow 5 minutes to elapse following administration of medication

- **Blood Glucose ≥ 4 mmol/L**
  - Yes: Glucose gel 10-20 g buccal
  - No: Consider ALS

- **Blood Glucose 11 to 20 mmol/L**
  - Consider ALS

- **Blood Glucose > 20 mmol/L**
  - Consider ALS

Reassess x 1 prn Glucose gel 10-20 g buccal
Consider other causes of seizures
Meningitis
Head injury
Hypoglycaemia
Eclampsia
Fever
Poisons
Alcohol/drug withdrawal

Seizure / convulsion

- Protect from harm
- Oxygen therapy

Seizure status

- Seizing currently
- Seize status
- Post seizure

Seizure / convulsion

- Request ALS
- Support head
- Check blood glucose
- Blood glucose < 4 mmol/L
- Reassess
- Still seizing
- Transport to ED if requested by Ambulance Control

Go to Glycaemic Emergency CPG

Consider other causes of seizures

Yes
No

Alert

- Recovery position
- Airway management
- Check blood glucose
- Blood glucose < 4 mmol/L
- Go to Glycaemic Emergency CPG

No

Reassess
SECTION 4 - MEDICAL EMERGENCIES

4.4.22

Stroke

Acute neurological symptoms

Complete a FAST assessment

Maintain airway

Oxygen therapy

Check blood glucose

Go to Glycaemic Emergency CPG

ECG & SpO2 monitoring

Oxygen therapy

Maintain SpO2 between 94% to 98% (lower range if COPD)

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 transport now if positive FAST

Follow local protocol re notifying ED prior to arrival

Reference: ILCOR Guidelines 2010
SECTION 4 - MEDICAL EMERGENCIES

Poisons – Adult

Poison source

- Ingestion
- Inhalation
- Injection
- Absorption

Poison type

- Paraquat
- Other
- Alcohol

Poison type

- Do not give oxygen
- Oxygen therapy
- Check blood glucose

Consider decontamination prior to transportation

Consider adequate ventilations

Consider ALS

Consider glycemic emergency CPG

Adequate ventilations

Warning with oral intake

Inadequate respirations CPG, authorises the administration of Naloxone IM for opiate overdose by Paramedics

Sips of water or milk

Cool area

Site burns

Yes

No

Yes

No

Reference:
Dr Joe Tracey, Director, National Poison Information Centre
**SECTION 4 - MEDICAL EMERGENCIES**

### Hypothermia

**Query hypothermia**

- **Immersion**
  - Yes
  - Remove patient horizontally from liquid (Provided it is safe to do so)
  - Protect patient from wind chill
  - Complete primary survey (Commence CPR if appropriate)
  - Oxygen therapy
    - Warm O₂ if possible
  - Remove wet clothing by cutting
  - Place patient in dry blankets/sleeping bag with outer layer of insulation
  - ECG & SpO₂ monitoring
    - Mild (Responsive)
      - Give hot sweet drinks
    - Moderate/severe (Unresponsive)
      - Request ALS

### Hypothermic patients

- Hypothermic patients should be handled gently & not permitted to walk
- Members of rescue teams should have a clinical leader of at least EFR level

**Equipment list**

- Survival bag
- Space blanket
- Warm air rebreather

**Equipment list**

- Hot packs to armpits & groin
- Check blood glucose
- Pulse check for 30 to 45 seconds

*Transport in head down position*

- Helicopter: head forward
- Boat: head aft

**Reference:**

- Pennington M, et al, 1994, Wilderness EMT, Wilderness EMS Institute
**SECTION 4 - MEDICAL EMERGENCIES**

**Epistaxis**

- **Primary Survey Medical**
  - Advise patient to sit forward
  - Apply digital pressure for 3 to 5 minutes
  - Advise patient to breathe through mouth only and not to blow nose
  - Go to Shock CPG

- **Medical**
  - Haemorrhage controlled: Yes
  - Consider ALS
  - Hypovolaemic: Yes
  - Request ALS

- **Trauma**
  - Trauma Primary Survey
  - Trauma

- **EMT**
  - P
  - AP

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PHECC Clinical Practice Guidelines - Emergency Medical Technician

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SECTION 4 - MEDICAL EMERGENCIES

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

**Request**
- ALP

**Conscious**
- Yes
  - Maintain Airway, Breathing & Circulation

- No

**Nausea**
- Yes
  - Go to Nausea & Vomiting CPG

- No

**Pain relief required**
- Yes
  - Go to Pain Mgt. CPG

- No

**Monitor ECG & SpO₂**

**NaCl (0.9%) 500 mL IV/IO**

**Notify control of query DCI & alert ED**

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

**Special Authorisation:**
- Paramedics are authorised to continue the established infusion in the absence of an Advanced Paramedic or Doctor during transportation

SECTION 4 - MEDICAL EMERGENCIES

Altered Level of Consciousness – Adult

V, P or U on AVPU scale

Maintain airway

No Trauma

Yes

Recovery Position

Consider Cervical Spine

Yes

P or U on AVPU scale

No

Yes

Request Paramedic

Obtain SAMPLE history from patient, relative or bystander

ECG & SP0₂ monitoring

Check temperature
Check pupillary size & response
Check for skin rash

Check for medications carried or medical alert jewellery

Check blood glucose

Differential Diagnosis

Symptomatic Bradycardia

Go to CPG

Glycaemic emergency

Go to CPG

Shock from blood loss

Inadequate respirations

Go to CPG

Post resuscitation care

Go to CPG

Stroke

Go to CPG

Anaphylaxis

Go to CPG

Submersion incident

Go to CPG

Head injury

Go to CPG

Hypothermia

Go to CPG

Poison

Go to CPG

Seizures

Go to CPG

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PHECC Clinical Practice Guidelines - Emergency Medical Technician

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**Behavioural Emergency**

**Obtain a history from patient and or bystanders present as appropriate**

- **Indications of medical cause of illness**
  - **Yes**
    - Go to appropriate CPG
  - **No**
    - **Potential to harm self or others**
      - **Yes**
        - Request control to inform Gardaí
      - **No**
        - **Reassure patient**
          - Explain what is happening at all times
          - Avoid confrontation
          - Attempt verbal de-escalation
          - Patient agrees to travel
            - **Yes**
              - Offer to treat and or transport patient
            - **No**
              - **Injury or illness potentially serious or likely to cause lasting disability**
                - **Yes**
                  - Inform patient of potential consequences of treatment refusal
                  - Request control to inform Gardaí and or Doctor
                    - **Yes**
                      - Is patient competent to make informed decision?
                        - **Yes**
                          - Document refusal of treatment and or transport to ED
                        - **No**
                          - Await arrival of doctor or Gardaí or receive implied consent
                          - Advise alternative care options and to call ambulance again if there is a change of mind
          - Treatment only
            - **Yes**
              - Patient agrees to travel
            - **No**
              - Aid to Capacity Evaluation
                - 1. Patient verbalizes/ communicates understanding of clinical situation?
                - 2. Patient verbalizes/ communicates appreciation of applicable risk?
                - 3. Patient verbalizes/ communicates ability to make alternative plan of care?
                - If no to any of the above consider Patient Incapacity

**Practitioners may not compel a patient to accompany them or prevent a patient from leaving an ambulance vehicle**

**If potential to harm self or others ensure minimum two people accompany patient in saloon of ambulance at all times**

**Reference:** HSE Mental Health Services
**Mental Health Emergency**

**Behaviour abnormal with previous psychiatric history**

Practitioners may not compel a patient to accompany them or prevent a patient from leaving an ambulance vehicle.

- Potential to harm self or others - Ensure minimum two people accompany patient in saloon of ambulance at all times.

**RMP or RPN in attendance or have made arrangements for voluntary/assisted admission**

- Yes
  - Obtain a history from patient and or bystanders present as appropriate.
  - Potential to harm self or others
    - Yes
      - Reassure patient
      - Explain what is happening at all times
      - Avoid confrontation
    - No
      - Attempt verbal de-escalation
      - Combative with hallucinations or Paranoia & risk to self or others
        - Yes
          - Request as appropriate
          - Gardaí
          - Medical Practitioner
          - Mental health team
        - No
          - Patient agrees to travel
  - No
    - Request control to inform Gardaí

**Co-operate as appropriate with medical or nursing team**

- Transport patient to an Approved Centre

**Reference; Reference Guide to the Mental Health Act 2001, Mental Health Commission**

**HSE Mental Health Services**

**Aid to Capacity Evaluation**

1. Patient verbalizes/communicates understanding of clinical situation?
2. Patient verbalizes/communicates appreciation of applicable risk?
3. Patient verbalizes/communicates ability to make alternative plan of care?

If no to any of the above consider Patient Incapacity
**End of Life – DNR**

- **End stage terminal illness**
- **Patient becomes acutely unwell**
  - **Respiratory distress**
    - **No**
    - **Basic airway maintenance**
    - **Oxygen therapy**
  - **Yes**
    - **Recent & reliable written instruction from patient’s doctor stating that the patient is not for resuscitation**
      - **No**
      - **Go to Primary survey CPG**
      - **Yes**
      - **Agreement between caregivers present and Practitioners not to resuscitate**
        - **No**
        - **Inform Ambulance**
          - **Pulse present**
            - **Yes**
              - **Provide supportive care until handover to appropriate Practitioner**
              - **Consult with Ambulance Control re: ‘location to transport patient / deceased’**
            - **No**
              - **Complete all appropriate documentation**
              - **Keep next of kin informed, if present**
        - **Yes**
          - **It is inappropriate to commence resuscitation**
          - **Inform Ambulance Control**
            - **Pulse present**
              - **Yes**
                - **Provide supportive care until handover to appropriate Practitioner**
                - **Consult with Ambulance Control re: ‘location to transport patient / deceased’**
              - **No**
                - **Complete all appropriate documentation**
                - **Keep next of kin informed, if present**
  - **Yes**
    - **Inform Ambulance**
      - **Pulse present**
        - **Yes**
          - **Provide supportive care until handover to appropriate Practitioner**
          - **Consult with Ambulance Control re: ‘location to transport patient / deceased’**
        - **No**
          - **Complete all appropriate documentation**
          - **Keep next of kin informed, if present**
    - **No**
      - **Complete all appropriate documentation**
      - **Keep next of kin informed, if present**

**Confirm and agree procedure with clinical staff in the event of a death in transit**

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

**The dying patient, along with his/her family, is viewed as a single unit of care**

**End stage terminal illness**

**Recent & reliable written instruction from patient’s doctor stating that the patient is not for resuscitation**

**Agreement between caregivers present and Practitioners not to resuscitate**

**It is inappropriate to commence resuscitation**

**Inform Ambulance Control**

**Pulse present**

**Provide supportive care until handover to appropriate Practitioner**

**Consult with Ambulance Control re: ‘location to transport patient / deceased’**

**Complete all appropriate documentation**

**Keep next of kin informed, if present**

**Follow local protocol for care of deceased**
SECTION 5 - OBSTETRIC EMERGENCIES

Pre-Hospital Emergency Childbirth

Query labour

- Take SAMPLE history

  Patient in labour
  - No
  - Yes

  Birth imminent or travel time too long
  - No
  - Yes

Request Ambulance Control to contact GP / midwife/ medical team as required by local policy to come to scene or meet en route

Position mother

Monitor vital signs and BP

Birth Complications
  - Yes
  - No

Support baby throughout delivery

Dry baby and check ABCs

Baby stable
  - No
  - Yes

Go to BLS Neonate CPG

Go to Primary Survey CPG

Mother stable
  - No
  - Yes

If placenta delivers, retain for inspection

Reassess

Rendezvous with Paramedic, Advanced Paramedic, midwife or doctor en-route to hospital

EMT

Consider Entonox

Pre-Hospital Emergency Childbirth

PRE-HOSPITAL EMERGENCY CARE COUNCIL
SECTION 5 - OBSTETRIC EMERGENCIES

4.5.2 Basic Life Support – Neonate (< 4 weeks)

From Childbirth CPG

Birth

< 4 weeks old

Term gestation
Amniotic fluid clear
Breathing or crying
Good muscle tone

No

Request ALS

Provide warmth
Position; Clear airway if necessary
Dry, stimulate, reposition

Assess respirations,
heart rate & colour

Breathing, HR > 100

Not breathing or HR < 100

Persistent
Cyanosis

No

Give Supplementary O₂

Breathing, HR > 100 but Cyanotic

Assess Heart Rate

HR < 60

HR 60 to 100

CPR for 30 sec
(Ratio 3 : 1)

Assess Heart Rate

Wrap baby well and give to mother
Observe baby

Initiate mobilisation of 3 to 4 practitioners / responders on site to assist with cardiac arrest management

Contact Ambulance Control for direction on transport

If HR < 60 continue CPR (3 : 1 ratio), checking HR every 30 sec, until appropriate Practitioner takes over or HR > 60

Wrap baby well and give to mother
Observe baby

End
SECTION 6 - TRAUMA

External Haemorrhage – Adult

Open wound

Yes

Active bleeding

No

Posture Elevation Examination Pressure

Apply sterile dressing

Consider (Oxygen therapy)

Haemorrhage controlled

No

Yes

Apply additional dressing(s)

Haemorrhage controlled

No

Depress proximal pressure point

Haemorrhage controlled

No

P

Apply tourniquet

Yes

No

Significant blood loss

No

Go to Shock CPG

P

EMT AP
**Shock from Blood Loss – Adult**

- **Signs of poor perfusion**
  - Tachycardia
  - Diminished/absent peripheral pulses
  - Tachypnea
  - Irritability/ confusion / ALoC
  - Cool, pale & moist skin
  - Delayed capillary refill

- Control external hemorrhage
- Oxygen therapy
- Request ALS
- SpO2 & ECG monitor
Spinal Immobilisation – Adult

**Indications for spinal immobilisation**

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

**Stabilise cervical spine**

- If in doubt, treat as spinal injury.

**Equipment list**

- Long board
- Vacuum mattress
- Orthopaedic stretcher
- Rigid cervical collar

**Consider Vacuum mattress**

- Life Threating
  - Yes: Apply cervical collar
  - No: Patient in sitting position

- Remove helmet (if worn)

- Rapid extrication with long board and cervical collar

- Load onto vacuum mattress/long board

**Dangerous mechanism include;**

- Fall ≥ 1 meter/5 steps
- Axial load to head
- MVC > 100 km/hr, rollover or ejection
- ATV collision
- Bicycle collision
- Pedestrian v vehicle

**Do not forcibly restrain a patient that is combatitive**
Burns – Adult

Burn or Scald

Cease contact with heat source

Inhalation and/or facial injury

Yes

Airway management

Respiratory distress

Yes

Go to Inadequate Respirations CPG

No

Commence local cooling of burn area

Consider humidified Oxygen therapy

Remove burned clothing & jewellery (unless stuck)

Dressing/covering of burn area

Equipment list

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

Pain > 2/10

Yes

Go to Pain Mgt. CPG

No

Pain Mgt.

CPG

Remove burned clothing & jewellery (unless stuck)

Isolated superficial injury (excluding FHFFP)

TBSA burn > 10%

Yes

Request ALS

ECG & SpO2 monitoring

> 25% TBSA and or time from injury to ED > 1 hour

Yes

NaCl (0.9%), 500 mL, IV/IO

No

No

Special Authorisation:

Paramedics are authorised to continue the established infusion in the absence of an Advanced Paramedic or Doctor during transportation

Monitor body temperature


SECTION 6 - TRAUMA

Establish need for pain relief
Check CSMs distal to injury site
Limb injury
Expose and examine limb
Dress open wounds
Provide manual stabilisation for injured limb
Check CSMs distal to injury site

Injury type
Fracture mid shaft of femur
Fracture
Soft tissue injury
Dislocation
Isolated lateral dislocation of patella

Apply traction splint
Apply appropriate splinting device
Rest
Ice
Compression
Elevation

Splint/support in position found
Reduce dislocation and apply splint

Recheck CSMs

Contraindications for application of traction splint
1. Pelvis
2. Knee
3. Partial amputation
4. Injuries to lower third of lower leg
5. Hip injury that prohibits normal alignment

For a limb threatening injury, treat as an emergency and pre-alert ED

Head Injury – Adult

**Equipment list**
- Extrication device
- Long board
- Vacuum mattress
- Orthopaedic stretcher
- Rigid cervical collar

**Maintain Airway**
- Oxygen therapy

**Control external haemorrhage**
- P or U on AVPU

**Maintain in-line immobilisation**
- Yes
- No

**Request ALS**
- Yes
- No

**Consider Paramedic**

**Apply cervical collar**

**Secure to long board**

**SpO₂ & ECG monitoring**

**Check blood glucose**

**Seizures**
- Yes
- No

**Go to Seizures / Convulsions CPG**

**Consider Vacuum mattress**

Reference:
Mc Swain, N, 2003, Pre Hospital Trauma Life Support 5th Edition, Mosby
**Submersion Incident**

Remove patient from liquid (Provided it is safe to do so)

- Spinal injury indicators: History of:
  - diving
  - trauma
  - water slide use
  - alcohol intoxication

Remove horizontally if possible (consider C-spine injury)

Complete primary survey (Commence CPR if appropriate)

**Inadequate respirations**

- Yes
  - Oxygen therapy
  - SpO2 & ECG monitoring

- No
  - Indications of respiratory distress

Patient is hypothermic

- Yes
  - Go to Hypothermia CPG

- No
  - Check blood glucose

Ventilations may be commenced while the patient is still in water by trained rescuers

If bronchospasm consider Salbutamol

- ≥ 5 years: 5 mg NEB
- < 5 years: 2.5 mg NEB

Transport to ED for investigation of secondary drowning insult

If EMT, P, AP

Do not delay on site. Continue algorithm en route.

Reference:
**SECTION 7 - PAEDIATRIC EMERGENCIES**

**Primary Survey Medical - Paediatric (≤ 13 years)**

The primary survey is focused on establishing the patient's clinical status and only applying interventions when they are essential to maintain life. It should be completed within one minute of arrival on scene.

1. **Medical issue**
   - Take standard infection control precautions
   - Consider pre-arrival information
   - Scene safety
   - Scene survey
   - Scene situation
   - Paediatric Assessment Triangle

2. **Head tilt/ chin lift**
   - Yes
   - No

3. **A**
   - Airway patent & protected
   - Yes
   - No

4. **B**
   - Adequate ventilation
   - Yes
   - No

5. **C**
   - Pulse < 60 & signs of poor perfusion
   - Yes
   - No

6. **AVPU assessment**
   - Yes
   - No

7. **Life threatening**
   - Clinical status decision

8. **Non serious or life threat**
   - Go to Secondary Survey CPG

9. **Serious not life threat**
   - Request ALS
   - Report findings as per Children First guidelines to ED staff and line manager in a confidential manner

10. **Normal ranges**
    - **Age**
      - Infant: 100 – 160
      - Toddler: 90 – 150
      - Pre school: 80 – 140
      - School age: 70 – 120
    - **Pulse**
      - 30 – 60
      - 24 – 40
      - 22 – 34
      - 18 – 30
    - **Respirations**

Reference:
- ILCOR Guidelines 2010, American Academy of Pediatrics, 2000, Pediatric Education for Prehospital Professionals
- Department of Children and Youth Affairs, 2011, Children First: National Guidance for the protection and Welfare of Children
Primary Survey Trauma – Paediatric (≤ 13 years)

Take standard infection control precautions

Consider pre-arrival information

Scene safety
Scene survey
Scene situation

Paediatric Assessment Triangle

Control catastrophic external haemorrhage

The primary survey is focused on establishing the patient’s clinical status and only applying interventions when they are essential to maintain life. It should be completed within one minute of arrival on scene.

The primary survey focuses on controlling external haemorrhage and applying interventions to maintain life. It should be completed within one minute of arrival on scene.

Mechanism of injury suggestive of spinal injury?

No

Yes

C-spine control

Suction, OPA

Jaw thrust (Head tilt/chin lift)

Give 5 Ventilations

Oxygen therapy

A

Airway patent & protected

Yes

No

B

Adequate ventilation

Yes

No

C

Pulse < 60 & signs of poor perfusion

Yes

No

AVPU assessment

Circulation

Expose & check obvious injuries

Treat life threatening injuries only

Life threatening

Clinical status decision

Non serious or life threat

Serious not life threat

Go to Secondary Survey CPG

Go to appropriate CPG

Emergency Medical Technician

AP

Reference:
ICOR Guidelines 2010, American Academy of Pediatrics, 2000, Pediatric Education for Prehospital Professionals
Department of Children and Youth Affairs, 2011, Children First: National Guidance for the protection and Welfare of Children
Secondary Survey – Paediatric (≤ 13 years)

Make appropriate contact with patient and or guardian if possible

Identify presenting complaint and exact chronology from the time the patient was last well
Check for normal patterns of
- feeding
- toilet
- sleeping
- interaction with guardian

Identify patient’s weight

Head to toe examination
Observing for
- pyrexia
- rash
- pain
- tenderness
- bruising
- wounds
- fractures
- medical alert jewellery

Re-check vital signs

Check for current medications

If child protection concerns are present

Report findings as per Children First guidelines to ED staff and line manager in a confidential manner

Reference:
- Miall, Lawrence et al, 2003, Paediatrics at a Glance, Blackwell Publishing
- Department of Children and Youth Affairs, 2011, Children First: National Guidance for the protection and Welfare of Children
- Luscombe, M et al 2010, BMJ, Weight estimation in paediatrics: a comparison of the APLS formula and the formula 'Weight(3(age)+7'
SECTION 7 - PAEDIATRIC EMERGENCIES

Inadequate Respirations – Paediatric (≤ 13 years)

1. Assess and maintain airway.
2. Do not distress the child. Permit the child to adopt a position of comfort.
3. Consider FBAO (Face Mask Airway) or an alternative airway device.
4. Oxygen therapy should be initiated.
5. Request ALS assistance if the respiratory rate is falling.
6. If the patient is unresponsive, positive pressure ventilations should be administered at a rate of 12 to 20 per minute.
7. Salbutamol, 2 puffs, (0.2 mg) metered aerosol, should be administered.
8. Reassess the patient and consider further interventions if necessary.

Life threatening asthma

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

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
  - > 50/ min for 2 to 5 years old
- Heart rate
  - > 120/ min for > 5 years old
  - > 130/ min for 2 to 5 years old

Stridor – Paediatric (≤ 13 years)

1. **Assess & maintain airway**
2. **Consider FBAO**
   - **Group or epiglottitis suspected?**
     - Yes: Do not insert anything into the mouth
     - No:
       - **Do not distress**
       - **Transport in position of comfort**

3. **Humidified O₂ – as high a concentration as tolerated**

4. **Oxygen therapy**

5. **ECG & SpO₂ monitoring**

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*Note: FBAO stands for Foreign Body Airway Obstruction.*
SECTION 7 - PAEDIATRIC EMERGENCIES

Allergic Reaction/Anaphylaxis – Paediatric (≤ 13 years)

- Consider subject to conditions above
  - Epinephrine (1:1000)
  - 6 mts to < 10 yrs use junior auto injector
  - 10 yrs use auto injector

- ECG & SpO2 monitor

- Request ALS

- Reassess

**Mild**
- Urticaria and or angioedema

**Moderate**
- Mild symptoms + simple bronchospasm

**Severe**
- Moderate symptoms + haemodynamic and or respiratory compromise
SECTION 7 - PAEDIATRIC EMERGENCIES

Glycaemic Emergency – Paediatric (≤ 13 years)

Abnormal blood glucose level

Blood Glucose

< 4 mmol/L

A or V on AVPU

Yes

No

> 10 mmol/L

Glucagon

> 8 years 1 mg IM

≤ 8 years 0.5 mg IM

Consider

Glucose gel, 5-10 g buccal

or

Sweetened drink

< 4 mmol/L

Yes

Patient alert

No

Request

ALS

EMT

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PHECC Clinical Practice Guidelines - Emergency Medical Technician
External Haemorrhage – Paediatric (≤ 13 years)

**Open wound**
- Yes
  - Active bleeding
    - No
      - Elevation
    - Yes
      - Examination
        - Pressure
          - Apply sterile dressing
            - Consider
              - Oxygen therapy
            - Haemorrhage controlled
              - Yes
                - Go to Shock CPG
              - No
                - Depress proximal pressure point
                  - Haemorrhage controlled
                    - Yes
                      - Go to Shock CPG
                    - No
                      - Apply tourniquet
            - Haemorrhage controlled
              - Yes
                - Go to Shock CPG
              - No
                - Apply additional dressing(s)

- No
  - Posture
    - Elevation
      - Examination
        - Pressure
          - Apply sterile dressing
            - Consider
              - Oxygen therapy
            - Haemorrhage controlled
              - Yes
                - Go to Shock CPG
              - No
                - Apply additional dressing(s)

- Significant blood loss
  - Yes
    - Go to Shock CPG
  - No
Shock from Blood Loss – Paediatric (≤ 13 years)

**Signs of inadequate perfusion**
- Tachycardia
- Diminished/absent peripheral pulses
- Tachypnea
- Irritability/confusion/AloC
- Cool extremities, mottling
- Delayed capillary refill

**Oxygen therapy**

**Control external haemorrhage**

**Request ALS**

**SpO2 & ECG monitor**

**EMT**
**SECTION 7 - PAEDIATRIC EMERGENCIES**

**Pain Management – Paediatric (≤ 13 years)**

The general principle in pain management is to start at the bottom rung of the pain ladder, and then to climb the ladder if pain is still present. Practitioners, depending on his/her scope of practice, may make a clinical judgement and commence pain relief on a higher rung.

**Analogue Pain Scale**

0 = no pain…….10 = unbearable

**Wong – Baker Faces for 3 years and older**

0 NO HURT
2 HURTS LITTLE BIT
4 HURTS LITTLE MORE
6 HURTS EVEN MORE
8 HURTS WHOLE LOT
10 HURTS WORST

**Severe pain (≥ 6 on pain scale)**

- Paracetamol 20 mg/Kg PO
- Morphine 0.3 mg/Kg PO Max 10 mg
- Morphine 0.05 mg/Kg IV Max 10 mg
- Ibuprofen 10 mg/Kg PO
- and / or
- Consider Ondansetron 0.1 mg/Kg IV slowly (Max 4 mg)
- Nitrous Oxide & Oxygen, inh
- Consider other non pharmacological interventions

**Moderate pain (3 to 5 on pain scale)**

- Paracetamol 20 mg/Kg PO
- and / or
- Consider
- Nitrous Oxide & Oxygen, inh

**Minor pain (2 to 3 on pain scale)**

- Paracetamol 20 mg/Kg PO

Go back to originating CPG

Reassess and move up the pain ladder if appropriate

Decisions to give analgesia must be based on clinical assessment and not directly on a linear scale

**EMT**

AP

P

Reference: World Health Organization, Pain Ladder

Reference: World Health Organization, Pain Ladder

Spinal Immobilisation – Paediatric (≤ 13 years)

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

Conside Extrication

Remove helmet (if worn)

Life Threatening

Yes

No

Apply cervical collar

Load onto vacuum mattress/ long board/ paediatric board

Consider Vacuum mattress

Prepare extrication device for use Follow direction of Paramedic, Advanced Paramedic or doctor

Patient in sitting position

Yes

No

Patient in undamaged child seat

Yes

No

Immobilise in the child seat

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

Consider Vacuum mattress

Rapid extrication with long board and cervical collar

Do not forcibly restrain a paediatric patient that is combative

If in doubt, treat as spinal injury

Equipment list:
- Long board
- Vacuum mattress
- Orthopaedic stretcher
- Rigid cervical collar

Note: equipment must be age appropriate

Reference:
Slack, S, & Clancy, M, 2004, Clearing the cervical spine of paediatric trauma patients, EMJ 21; 189-193
Burns – Paediatric (≤ 13 years)

Burn or Scald

Cease contact with heat source

Inhalation and/or facial injury

No

Yes

Airway management

Respiratory distress

Yes

Go to Inadequate Respiration CPG

No

Consider humidified Oxygen therapy

Commence local cooling of burn area

Remove burned clothing & jewellery (unless stuck)

Dressing/covering of burn area

Go to Pain Mgt. CPG

Isolated superficial injury (excluding FHPP)

No

Pain > 2/10

Yes

Special Authorisation:

Paramedics are authorised to continue
the established infusion in the absence of an Advanced Paramedic or Doctor during transportation

SECTION 7 - PAEDIATRIC EMERGENCIES

Post-Resuscitation Care – Paediatric

Return of Spontaneous Circulation

Maintain patient at rest

Return of Spontaneous Circulation

Conscious

Yes

No

Adequate ventilation

Yes

No

Positive pressure ventilations

Max 12 to 20 per minute

Recovery position

Consider active cooling if unresponsive

Maintain patient at rest

ECG & SpO2 monitoring

Monitor vital signs

Check blood glucose

Maintain care until handover to appropriate Practitioner

If no ALS available

Drive smoothly

Reference: ILCOR Guidelines 2010
Major Emergency (Major Incident) – First Practitioners on site

Irish (Major Emergency) terminology in black
UK (Major Incident) terminology in blue

Possible Major Emergency

Take standard infection control precautions
Consider pre-arrival information

PPE (high-visibility jacket and helmet) must be worn

Practitioner 1
Park at the scene as safety permits and in liaison with Fire & Garda if present
Leave blue lights on as vehicle acts as Forward Control Point pending the arrival of the Mobile Control Vehicle
Confirm arrival at scene with Ambulance Control and provide an initial visual report stating Major Emergency (Major Incident) Standby or Declared
Maintain communication with Practitioner 2
Leave the ignition keys in place and remain with vehicle
Carry out Communications Officer role until relieved

Practitioner 2 (Ideally MIMMS trained)
Carry out scene survey
Give situation report to Ambulance Control using METHANE message
Carry out HSE Controller of Operations (Ambulance Incident Officer) role until relieved
Liaise with Garda Controller of Operations (Police Incident Officer) and Local Authority Controller of Operations (Fire Incident Officer)
Select location for Holding Area (Ambulance Parking Point)
Set up key areas in conjunction with other Principle Response Agencies on site;
- Site Control Point (Ambulance Control Point),
- Casualty Clearing Station

METHANE message
M – Major Emergency declaration / standby
E – Exact location of the emergency
T – Type of incident (transport, chemical etc.)
H – Hazards present and potential
A – Access / egress routes
N – Number of casualties (injured or dead)
E – Emergency services present and required

If single Practitioner is first on site combine both roles until additional Practitioners arrive

The first ambulance crew does not provide care or transport of patients as this interferes with their ability to liaise with other services, to assess the scene and to provide continuous information as the incident develops

The principles and terminology of Major Incident Medical management and Support (MIMMS) has been used with the kind permission of the Advanced Life Support Group, UK
SECTION 8 - PRE-HOSPITAL EMERGENCY CARE OPERATIONS

Major Emergency (Major Incident) – Operational Control

Irish (Major Emergency) terminology in black
UK (Major Incident) terminology in blue

If Danger Area identified entry to Danger Area is controlled by a Senior Fire Officer or an Garda Síochána

Entry to Inner Cordon (Bronze Area) is limited to personnel providing emergency care and or rescue
Personal Protective Equipment required

Management structure for:
Outer Cordon, Tactical Area (Silver Area)
- On-Site Co-ordinator
- HSE Controller of Operations (Ambulance Incident Officer)
- Site Medical Officer (Medical Incident Officer)
- Local Authority Controller of Operations (Fire Incident Officer)
- Garda Controller of Operations (Police Incident Officer)

Management structure for:
Inner Cordon, Operational Area (Bronze Area)
- Forward Ambulance Incident Officer (Forward Ambulance Incident Officer)
- Forward Medical Incident Officer (Forward Medical Incident Officer)
- Fire Service Incident Commander (Forward Fire Incident Officer)
- Garda Cordon Control Officer (Forward Police Incident Officer)

Other management functions for:
- Major Emergency site
- Casualty Clearing Officer
- Triage Officer
- Ambulance Parking Point Officer
- Ambulance Loading Point Officer
- Communications Officer
- Safety Officer


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Multiple casualty incident

Can casualty walk
  Yes
  No

Is casualty breathing
  Yes
  No

Open airway one attempt

Breathing now
  Yes
  No

Respiratory rate < 10 or > 29
  Yes
  No

Capillary refill > 2 sec
  Yes
  No

Or
Pulse > 120
  Yes
  No

Priority 3
(Delayed)
GREEN

Priority 1
(Immediate)
RED

Priority 2
(Urgent)
YELLOW

DEAD

Triage is a dynamic process

The principles and terminology of Major Incident Medical management and Support (MIMMS) has been used with the kind permission of the Advanced Life Support Group, UK.
The Medication Formulary is published by the Pre-Hospital Emergency Care Council (PHECC) to enable pre-hospital emergency care Practitioners to be competent in the use of medications permitted under SI 512 of 2008 schedule 7. This is a summary document only and Practitioners are advised to consult with official publications to obtain detailed information about the medications used.

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 Practitioner is in good standing on the PHECC Practitioner’s Register.
2. The Practitioner complies with the Clinical Practice Guidelines (CPGs) published by PHECC.
3. The Practitioner is acting on behalf of an organisation (paid or voluntary) that is approved by PHECC to implement the CPGs.
4. The Practitioner is authorised, by the organisation on whose behalf he/she is acting, to administer the medications.
5. The Practitioner has received training on, and is competent in, the administration of the medication.
6. The medications are listed on the Medicinal Products Schedule 7.

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 Practitioner administration of medications. The principle of titrating the dose to the desired effect shall be applied. The onus rests on the Practitioner to ensure that he/she is using the latest versions of CPGs which are available on the PHECC website www.phecc.ie

Sodium Chloride 0.9% (NaCl) is the IV/IO fluid of choice for pre-hospital emergency care.

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.

Paediatric weight calculations acceptable to PHECC are;
- (age x 3) + 7 Kg
- Length based resuscitation tape (Broselow® or approved equivalent)

Reviewed on behalf of PHECC by Prof Peter Weedle, Adjunct Professor of Clinical Pharmacy, School of Pharmacy, University College Cork.
This version contains 9 medications for EMT level.
Please visit www.phecc.ie for the latest edition/version.
AMENDMENTS TO THE 2012 EDITION 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>( \text{SpO}_2 &lt; 94% \text{ adults} &amp; &lt; 96% \text{ paediatrics} )</td>
<td>( \text{SpO}_2 &lt; 97% )</td>
</tr>
</tbody>
</table>
| Usual dosages            | **Adult**: Life threats identified during primary survey; 100% until a reliable \( \text{SpO}_2 \) measurement obtained then titrate \( \text{O}_2 \) to achieve \( \text{SpO}_2 \) of 94% - 98%. All other acute medical and trauma titrate \( \text{O}_2 \) to achieve \( \text{SpO}_2 \) of 94% - 98%.  
**Paediatric**: Life threats identified during primary survey; 100% until a reliable \( \text{SpO}_2 \) measurement obtained then titrate \( \text{O}_2 \) to achieve \( \text{SpO}_2 \) of 96% - 98%. All other acute medical and trauma titrate \( \text{O}_2 \) to achieve \( \text{SpO}_2 \) of 96% - 98%. | **Adult**: via BVM, Pneumothorax; 100 % via high concentration reservoir mask. All other acute medical and trauma titrate to \( \text{SpO}_2 > 97\% \).  
**Paediatric**: via BVM, All other acute medical and trauma titrate to \( \text{SpO}_2 > 97\% \). |
| 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. |                                                                       |
**PARACETAMOL**

<table>
<thead>
<tr>
<th>Heading</th>
<th>Add</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indications</td>
<td>Minor or moderate pain (2 – 6 on pain scale) for adult and paediatric patients</td>
<td>moderate pain (2 – 6 on pain scale)</td>
</tr>
<tr>
<td>Contraindications</td>
<td>Chronic liver disease</td>
<td>Paracetamol given in previous 4 hours</td>
</tr>
<tr>
<td>Additional information</td>
<td>If Paracetamol administered in previous 4 hours, adjust the dose downward by the amount given by other sources resulting in a maximum of 20 mg/Kg</td>
<td></td>
</tr>
</tbody>
</table>

**SALBUTAMOL**

<table>
<thead>
<tr>
<th>Heading</th>
<th>Add</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional information</td>
<td>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>
<td></td>
</tr>
</tbody>
</table>
Index of medication formulary *(Adult ≥ 14 and Paediatric ≤ 13 unless otherwise stated)*

<table>
<thead>
<tr>
<th>Medication</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>83</td>
</tr>
<tr>
<td>Epinephrine (1:1000)</td>
<td>84</td>
</tr>
<tr>
<td>Glucagon</td>
<td>85</td>
</tr>
<tr>
<td>Glucose gel</td>
<td>86</td>
</tr>
<tr>
<td>Glyceryl Trinitrate</td>
<td>87</td>
</tr>
<tr>
<td>Nitrous Oxide 50% &amp; Oxygen 50%</td>
<td>88</td>
</tr>
<tr>
<td>Oxygen</td>
<td>89</td>
</tr>
<tr>
<td>Paracetamol</td>
<td>90</td>
</tr>
<tr>
<td>Salbutamol</td>
<td>91</td>
</tr>
</tbody>
</table>
**CLINICAL LEVEL:**

<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) - If soluble - disperse in water, if not soluble - to be chewed. (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>Adult: 300 mg tablet. Paediatric: Not indicated.</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>Antithrombotic. Inhibits the formation of thromboxane A₂, 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>EPINEPHRINE (1:1 000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Sympathetic agonist.</td>
</tr>
<tr>
<td>Descriptions</td>
<td>Naturally occurring catecholamine. It is a potent alpha and beta adrenergic stimulant; however, its effect on beta receptors is more profound.</td>
</tr>
<tr>
<td>Presentation</td>
<td>Pre-filled syringe, ampoule or auto injector (for EMT use) 1 mg/1 mL (1:1 000).</td>
</tr>
<tr>
<td>Administration</td>
<td>Intramuscular (IM). (CPG: 5/6.4.18, 5/6.7.8, 4.4.18, 4.7.8).</td>
</tr>
<tr>
<td>Indications</td>
<td>Severe anaphylaxis.</td>
</tr>
<tr>
<td>Contra-Indications</td>
<td>None known.</td>
</tr>
</tbody>
</table>
| Usual Dosages | **Adult:** 0.5 mg (500 mcg) IM (0.5 mL of 1:1 000).
EMT use auto injector (0.3 mg).
Repeat every 5 minutes if indicated.
**Paediatric:**
< 6 months: 0.05 mg (50 mcg) IM (0.05 mL of 1:1 000).
6 months to 5 years: 0.125 mg (125 mcg) IM (0.13 mL of 1:1 000).
6 to 8 years: 0.25 mg (250 mcg) IM (0.25 mL of 1:1 000).
>8 years: 0.5 mg (500 mcg) IM (0.5 mL of 1:1 000).
**EMT:** for 6 months < 10 years use EpiPen® Jr (0.15 mg).
for ≥ 10 years use auto injector (0.3 mg).
Repeat every 5 minutes if indicated. |
| Pharmacology/Action | Alpha and beta adrenergic stimulant.
Reversal of laryngeal oedema & bronchospasm in anaphylaxis.
Antagonises the effects of histamine. |
| Side effects | Palpitations.
Tachyarrhythmias.
Hypertension.
Angina like symptoms. |
| Additional information | N.B. Double check the concentration on pack before use. |
# APPENDIX 1 - MEDICATION FORMULARY

## CLINICAL LEVEL:

<table>
<thead>
<tr>
<th>DRUG NAME</th>
<th>GLUCAGON</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Hormone and antihypoglycaemic.</td>
</tr>
<tr>
<td><strong>Descriptions</strong></td>
<td>Glucagon is a protein secreted by the alpha cells of the islets of Langerhans in the pancreas. It is used to increase the blood glucose level in cases of hypoglycaemia in which an IV cannot be immediately placed.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>1 mg vial powder and solution for reconstitution (1 mL).</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Intramuscular (IM). (CPG: 5/6.4.19, 5/6.7.9, 4.4.19, 4.7.9).</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Hypoglycaemia in patients unable to take oral glucose or unable to gain IV access with a blood glucose level &lt; 4 mmol/L.</td>
</tr>
<tr>
<td><strong>Contra-Indications</strong></td>
<td>Known severe adverse reaction. Phaeochromocytoma.</td>
</tr>
<tr>
<td><strong>Usual Dosages</strong></td>
<td><strong>Adult:</strong> 1 mg IM. <strong>Paediatric:</strong> ≤ 8 years 0.5 mg (500 mcg) IM. &gt;8 years 1 mg IM.</td>
</tr>
<tr>
<td><strong>Pharmacology/Action</strong></td>
<td>Glycogenolysis. Increases plasma glucose by mobilising glycogen stored in the liver.</td>
</tr>
<tr>
<td><strong>Side effects</strong></td>
<td>Rare, may cause hypotension, dizziness, headache, nausea and vomiting.</td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
<td>May be ineffective in patients with low stored glycogen e.g. prior use in previous 24 hours, alcoholic patients with liver disease. Protect from light.</td>
</tr>
</tbody>
</table>
### GLUCOSE GEL

<table>
<thead>
<tr>
<th>DRUG NAME</th>
<th></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>
</tbody>
</table>
| Usual Dosages | **Adult:** 10 – 20 g buccal. Repeat prn.  
**Paediatric:** ≤ 8 years; 5 – 10 g buccal, >8 years; 10 – 20 g buccal. Repeat prn. |
| Pharmacology/Action | Increases blood glucose levels. |
| Side effects | May cause vomiting in patients under the age of five if administered too quickly. |
| Additional information | 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. |
APPENDIX 1 - MEDICATION FORMULARY

CLINICAL LEVEL:

<table>
<thead>
<tr>
<th>DRUG NAME</th>
<th>GLYCERYL TRINITRATE (GTN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Nitrate.</td>
</tr>
<tr>
<td>Descriptions</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>Presentation</td>
<td>Aerosol spray: metered dose 0.4 mg (400 mcg).</td>
</tr>
<tr>
<td>Administration</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>Contra-Indications</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>
<tr>
<td>Usual Dosages</td>
<td><strong>Adult:</strong> 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. <strong>Paediatric:</strong> Not indicated.</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>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.</td>
</tr>
<tr>
<td>Side effects</td>
<td>Headache, Transient Hypotension, Flushing, Dizziness.</td>
</tr>
<tr>
<td>Additional information</td>
<td>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.</td>
</tr>
<tr>
<td>DRUG NAME</td>
<td>NITROUS OXIDE 50% AND OXYGEN 50% (ENTONOX®)</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Class</td>
<td>Analgesic.</td>
</tr>
<tr>
<td>Descriptions</td>
<td>Potent analgesic gas contains a mixture of both nitrous oxide and oxygen.</td>
</tr>
<tr>
<td>Presentation</td>
<td>Cylinder, coloured blue with white and blue triangles on cylinder shoulders. Medical gas: 50% Nitrous Oxide &amp; 50% Oxygen.</td>
</tr>
<tr>
<td>Administration</td>
<td>Self administered. Inhalation by demand valve with face-mask or mouthpiece. (CPG: 4/5/6.2.6, 4/5/6.7.14, 5/6.5.1, 5/6.56, 4.5.1).</td>
</tr>
<tr>
<td>Indications</td>
<td>Pain relief.</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>Analgesic agent gas: - CNS depressant. - pain relief.</td>
</tr>
<tr>
<td>Side effects</td>
<td>Disinhibition. Decreased level of consciousness. Light headedness.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Do not use if patient unable to understand instructions. In cold temperatures warm cylinder and invert to ensure mix of gases. Advanced Paramedics may use discretion with minor chest injuries. Brand name: Entonox®. Has an addictive property.</td>
</tr>
</tbody>
</table>
### CLINICAL LEVEL:

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Gas.</td>
</tr>
<tr>
<td>Descriptions</td>
<td>Odourless, tasteless, colourless gas necessary for life.</td>
</tr>
<tr>
<td>Presentation</td>
<td>D, E or F cylinders, coloured black with white shoulders. CD cylinder; white cylinder. Medical gas.</td>
</tr>
</tbody>
</table>
| Administration | 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) |
| Indications | Absent/inadequate ventilation following an acute medical or traumatic event. 
SpO$_2$ < 94% adults and < 96% paediatrics. 
SpO$_2$ < 92% for patients with acute exacerbation of COPD. |
| Contra-Indications | Paraquat poisoning & Bleomycin lung injury. |
| Usual Dosages | **Adult:** Cardiac and respiratory arrest: 100%. Life threats identified during primary survey: 100% until a reliable SpO$_2$ measurement obtained then titrate O$_2$ to achieve SpO$_2$ of 94% - 98%. For patients with acute exacerbation of COPD, administer O$_2$ titrate to achieve SpO$_2$ 92% or as specified on COPD Oxygen Alert Card. All other acute medical and trauma titrate O$_2$ to achieve SpO$_2$ 94% -98%.  
**Paediatric:** Cardiac and respiratory arrest: 100%. Life threats identified during primary survey: 100% until a reliable SpO$_2$ measurement obtained then titrate O$_2$ to achieve SpO$_2$ of 96% - 98%. All other acute medical and trauma titrate O$_2$ to achieve SpO$_2$ of 96% - 98%. |
| Pharmacology/Action | Oxygenation of tissue/organs. |
| Side effects | Prolonged use of O$_2$ with chronic COPD patients may lead to reduction in ventilation stimulus. |
| Additional information | 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 >30 minute duration. Avoid naked flames, powerful oxidising agent. |
# APPENDIX 1 - MEDICATION FORMULARY

## CLINICAL LEVEL:

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>PARACETAMOL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Analgesic and antipyretic.</td>
</tr>
<tr>
<td><strong>Descriptions</strong></td>
<td>Paracetamol is used to reduce pain and body temperature.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>Rectal suppository 180 mg and 60 mg. Suspension 120 mg in 5 mL. 500 mg tablet.</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Per Rectum (PR). Orally (PO). (CPG: 4/5/6.2.6, 5/6.7.10, 4/5/6.7.14, 4.7.10).</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Pyrexia following seizure for paediatric patients. <strong>Advanced Paramedics</strong> may administer Paracetamol, in the absence of a seizure for the current episode, provided the paediatric patient is pyrexial and has a previous history of febrile convulsions. Minor or moderate pain (2 – 6 on pain scale) for adult and paediatric patients.</td>
</tr>
<tr>
<td><strong>Contra-Indications</strong></td>
<td>Known severe adverse reaction. Chronic liver disease.</td>
</tr>
<tr>
<td><strong>Usual Dosages</strong></td>
<td><strong>Adult:</strong> 1 g PO. <strong>Paediatric:</strong> PR (AP Only) &lt; 1 year - 60 mg PR. 1-3 years - 180 mg PR. 4-8 years - 360 mg PR. PO 20 mg/Kg PO.</td>
</tr>
<tr>
<td><strong>Pharmacology/Action</strong></td>
<td>Analgesic – central prostaglandin inhibitor. Antipyretic – prevents the hypothalamus from synthesising prostaglandin E, inhibiting the body temperature from rising further.</td>
</tr>
<tr>
<td><strong>Side effects</strong></td>
<td>None. Long term use at high dosage or over dosage can cause liver damage and less frequently renal damage.</td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
<td>Note: Paracetamol is contained in Paracetamol Suspension and other over the counter drugs. Consult with parent/guardian in relation to medication prior to arrival on scene. For PR use be aware of modesty of patient, should be administered in presence of a 2nd person. If Paracetamol administered in previous 4 hours, adjust the dose downward by the amount given by other sources resulting in a maximum of 20 mg/Kg.</td>
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**APPENDIX 1 - MEDICATION FORMULARY**

**CLINICAL LEVEL:**

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<tr>
<th>DRUG NAME</th>
<th>SALBUTAMOL</th>
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<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Sympathetic agonist.</td>
</tr>
<tr>
<td><strong>Descriptions</strong></td>
<td>Sympathomimetic that is selective for beta-two adrenergic receptors.</td>
</tr>
<tr>
<td><strong>Presentation</strong></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><strong>Administration</strong></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><strong>Indications</strong></td>
<td>Bronchospasm. Exacerbation of COPD. Respiratory distress following submersion incident.</td>
</tr>
<tr>
<td><strong>Contra-Indications</strong></td>
<td>Known severe adverse reaction.</td>
</tr>
<tr>
<td><strong>Usual Dosages</strong></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>
</tr>
<tr>
<td><strong>Pharmacology/Action</strong></td>
<td>Beta 2 agonist. Bronchodilation. Relaxation of smooth muscle.</td>
</tr>
<tr>
<td><strong>Side effects</strong></td>
<td>Tachycardia. Tremors. Tachyarrhythmias.</td>
</tr>
<tr>
<td><strong>Long-term side effects</strong></td>
<td>High doses may cause hypokalaemia.</td>
</tr>
<tr>
<td><strong>Additional information</strong></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>
NEW FOR 2012:

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<tr>
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<th>CFR – A</th>
<th>OFA</th>
<th>EFR</th>
<th>EMT</th>
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<th>AP</th>
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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
### APPENDIX 2 - MEDICATION & SKILLS MATRIX

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<tr>
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<th>EFR</th>
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## Medication

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## Airway & Breathing Management

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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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<th>EFR</th>
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### Cardiac

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### Haemorrhage control

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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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### Other

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<td>Assess responsiveness</td>
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<td>Check breathing</td>
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<td>FAST assessment</td>
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<tr>
<td>AVPU</td>
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<td>Breathing &amp; pulse rate</td>
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<td>Primary survey</td>
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<td>SAMPLE history</td>
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<td>Pulse check (cardiac arrest)</td>
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<td>Assess pupils</td>
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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
- 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 EMERGENCY MEDICAL TECHNICIAN – APRIL 2012

A policy decision has been made to publish new an update clinical practice guidelines in April and October each year.

Updated CPGs from the previous version.

<table>
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<th>CPGS</th>
<th>THE PRINCIPAL DIFFERENCES ARE:</th>
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<tbody>
<tr>
<td>CPG 4.4.22 Stroke</td>
<td>• A typographical error indicated to go to ‘Hypoglycaemia’ CPG, which has been corrected to ‘Glycaemic Emergency’ CPG.</td>
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</table>
| CPG 4/5/6.6.5 Limb Injury – Adult         | • CPG 4.6.5 Limb Fractures – Adult has been renamed Limb Injury – Adult to broaden the scope of the CPG.  
• The CPG now deals with fractures, soft tissue injuries and dislocations.  
• Pain relief has been changed from ‘consider’ to ‘establish need for’  
• There is now a requirement to pre-alert the Emergency Department for limb threatening injuries.  
• A pelvic splinting device is now authorised for use by EMTs |
| CPG 4/5/6.7.1 Primary Survey Medical – Paediatric | • Children First Guidelines requirements have been added to this CPG. |
| CPG 4/5/6.7.2 Primary Survey Trauma – Paediatric | • Children First Guidelines requirements have been added to this CPG. |

New CPGs introduced into this version include

<table>
<thead>
<tr>
<th>NEW CPGS</th>
<th>THE NEW SKILLS AND MEDICATIONS INCORPORATED INTO THE CPG ARE:</th>
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</thead>
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| CPG 4/5/6.7.4 Secondary Survey – Paediatric   | • This CPG outlines the progress through the secondary survey for a paediatric patient.  
• Children First Guidelines requirements have been included in this CPG. |
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.