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
TABLE OF CONTENTS

PREFACE
FOREWORD ....................................................................................... 6
ACCEPTED ABBREVIATIONS .......................................................... 7
ACKNOWLEDGEMENTS ................................................................. 9
INTRODUCTION ............................................................................. 11
IMPLEMENTATION AND USE OF CLINICAL PRACTICE GUIDELINES ... 12

CLINICAL PRACTICE GUIDELINES
KEY/CODES EXPLANATION .......................................................... 16
CLINICAL PRACTICE GUIDELINES - INDEX .................................. 17
SECTION 2 PATIENT ASSESSMENT ............................................. 19
SECTION 3 RESPIRATORY EMERGENCIES ................................... 24
SECTION 4 MEDICAL EMERGENCIES ........................................ 27
SECTION 5 OBSTETRIC EMERGENCIES ....................................... 53
SECTION 6 TRAUMA ..................................................................... 55
SECTION 7 PAEDIATRIC EMERGENCIES ..................................... 62
SECTION 8 PRE-HOSPITAL EMERGENCY CARE OPERATIONS ............ 76

Appendix 1 - Medication Formulary ............................................. 79
Appendix 2 – Medications & Skills Matrix ..................................... 92
Appendix 3 – Critical Incident Stress Management ....................... 99
Appendix 4 – CPG Updates for Emergency Medical Technicians .... 102
Appendix 5 – Pre-hospital defibrillation position paper ............... 103
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
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>Advanced Paramedic</td>
<td>AP</td>
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<tr>
<td>Advanced Life Support</td>
<td>ALS</td>
</tr>
<tr>
<td>Airway, breathing &amp; circulation</td>
<td>ABC</td>
</tr>
<tr>
<td>All terrain vehicle</td>
<td>ATV</td>
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<tr>
<td>Altered level of consciousness</td>
<td>ALoC</td>
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<tr>
<td>Automated External Defibrillator</td>
<td>AED</td>
</tr>
<tr>
<td>Bag Valve Mask</td>
<td>BVM</td>
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<tr>
<td>Basic Life Support</td>
<td>BLS</td>
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<tr>
<td>Blood Glucose</td>
<td>BG</td>
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<tr>
<td>Blood Pressure</td>
<td>BP</td>
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<tr>
<td>Carbon dioxide</td>
<td>CO₂</td>
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<tr>
<td>Cardiopulmonary Resuscitation</td>
<td>CPR</td>
</tr>
<tr>
<td>Cervical spine</td>
<td>C-spine</td>
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<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>COPD</td>
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<tr>
<td>Clinical Practice Guideline</td>
<td>CPG</td>
</tr>
<tr>
<td>Degree</td>
<td>°</td>
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<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>
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<tr>
<td>Emergency Department</td>
<td>ED</td>
</tr>
<tr>
<td>Emergency Medical Technician</td>
<td>EMT</td>
</tr>
<tr>
<td>Endotracheal tube</td>
<td>ETT</td>
</tr>
<tr>
<td>Foreign body airway obstruction</td>
<td>FBAO</td>
</tr>
<tr>
<td>Fracture</td>
<td>#</td>
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<tr>
<td>General Practitioner</td>
<td>GP</td>
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<tr>
<td>Glasgow Coma Scale</td>
<td>GCS</td>
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<tr>
<td>Gram</td>
<td>g</td>
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<tr>
<td>Greater than</td>
<td>&gt;</td>
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<tr>
<td>Greater than or equal to</td>
<td>≥</td>
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<tr>
<td>Heart rate</td>
<td>HR</td>
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<tr>
<td>History</td>
<td>Hx</td>
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<tr>
<td>Impedance Threshold Device</td>
<td>ITD</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Inh</td>
</tr>
<tr>
<td>Intramuscular</td>
<td>IM</td>
</tr>
<tr>
<td>Intranasal</td>
<td>IN</td>
</tr>
<tr>
<td>Intravenous</td>
<td>IV</td>
</tr>
<tr>
<td>Keep vein open</td>
<td>KVO</td>
</tr>
<tr>
<td>Kilogram</td>
<td>Kg</td>
</tr>
<tr>
<td>Less than</td>
<td>&lt;</td>
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</table>
ACCEPTED ABBREVIATIONS (Cont.)

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

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

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SPECIAL THANKS

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

Care principles are goals of care that apply to all patients. Scene safety, standard precautions, patient assessment, primary and secondary surveys and the recording of interventions & 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

**EMT** (Level 4) for which the CPG pertains

**Paramedic** (Level 5) for which the CPG pertains

**Advanced Paramedic** (Level 6) for which the CPG pertains

**Sequence step**
- A parallel process
  - Which may be carried out in parallel with other sequence steps

**Mandatory sequence step**
- A Mandatory sequence (skill) to be performed

**A decision process**
- The Practitioner must follow one route

**Reassess**
- Reassess the patient following intervention

**Request ALS**
- Contact Ambulance Control and request Advanced Life Support (AP or doctor)

**Consider ALS**
- Consider requesting an ALS response, based on the clinical findings

**4/5/6.4.1 Version 2, 07/11**
- CPG numbering system
  - 4/5/6 = clinical levels to which the CPG pertains
  - x = section in CPG manual, y = CPG number in sequence
  - mm/yy = month/year CPG published

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

**Consider requesting a Paramedic response, based on the clinical findings**

- A skill or sequence that only pertains to Paramedic or higher clinical levels

**Special authorisation**
- This authorises the Practitioner to perform an intervention under specified conditions

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

**Start from**
- A clinical condition that may precipitate entry into the specific CPG
SECTION 2 PATIENT ASSESSMENT
Primary Survey Medical – Adult ................................................................. 19
Primary Survey Trauma – Adult ................................................................. 20
Secondary Survey Medical – Adult ............................................................ 21
Secondary Survey Trauma – Adult ............................................................. 22
Pain Management – Adult ................................................................. 23

SECTION 3 RESPIRATORY EMERGENCIES
Advanced Airway Management – Adult ......................................................... 24
Inadequate Respirations – Adult ............................................................... 25
Exacerbation of COPD ........................................................................ 26

SECTION 4 MEDICAL EMERGENCIES
Basic Life Support – Adult ................................................................. 27
Basic Life Support – Paediatric ................................................................. 28
Foreign Body Airway Obstruction – Adult .................................................. 29
Foreign Body Airway Obstruction – Paediatric ......................................... 30
VF or Pulseless VT – Adult .................................................................. 31
VF or Pulseless VT – Paediatric ............................................................... 32
Symptomatic Bradycardia – Paediatric ...................................................... 33
Asystole – Adult .................................................................................. 34
Pulseless Electrical Activity – Adult .......................................................... 35
Asystole/PEA – Paediatric .................................................................... 36
Post-Resuscitation Care – Adult ............................................................... 37
Recognition of Death – Resuscitation not Indicated ................................... 38
Cardiac Chest Pain – Acute Coronary Syndrome ...................................... 39
Symptomatic Bradycardia – Adult ............................................................ 40
Allergic Reaction/Anaphylaxis – Adult ...................................................... 41
Glycaemic Emergency – Adult ................................................................. 42
Seizure/Convulsion – Adult .................................................................. 43
Stroke ................................................................................................. 44
Poisons – Adult .................................................................................. 45
Hypothermia ........................................................................................ 46
Epistaxis ............................................................................................... 47
 Decompression Illness ........................................................................ 48
Altered Level of Consciousness – Adult .................................................... 49
Behavioural Emergency ....................................................................... 50
Mental Health Emergency ................................................................... 51
End of Life – DNR ............................................................................... 52
SECTION 5 OBSTETRIC EMERGENCIES
Pre-Hospital Emergency Childbirth ........................................... 53
Basic Life Support – Neonate .................................................... 54

SECTION 6 TRAUMA
External Haemorrhage – Adult ................................................ 55
Shock from Blood Loss – Adult ............................................... 56
Spinal Immobilisation – Adult .................................................. 57
Burns – Adult ........................................................................... 58
Limb Injury – Adult .................................................................. 59
Head Injury – Adult .................................................................. 60
Submersion Incident .................................................................. 61

SECTION 7 PAEDIATRIC EMERGENCIES
Primary Survey Medical – Paediatric ....................................... 62
Primary Survey Trauma – Paediatric ......................................... 63
Secondary Survey – Paediatric .................................................. 64
Inadequate Respirations – Paediatric ........................................ 65
Stridor – Paediatric ................................................................... 66
Allergic Reaction/Anaphylaxis – Paediatric ............................. 67
Glycaemic Emergency – Paediatric .......................................... 68
Seizure/Convulsion – Paediatric ............................................... 69
External Haemorrhage – Paediatric .......................................... 70
Shock from Blood Loss – Paediatric ......................................... 71
Pain Management – Paediatric .................................................. 72
Spinal Immobilisation – Paediatric ........................................... 73
Burns – Paediatric ..................................................................... 74
Post Resuscitation Care – Paediatric ........................................ 75

SECTION 8 PRE-HOSPITAL EMERGENCY CARE OPERATIONS
Major Emergency – First Practitioners on Site ......................... 76
Major Emergency – Operational Control ................................. 77
Triage Sieve ............................................................................... 78
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 Medical – Adult**

1. Take standard infection control precautions
2. Consider pre-arrival information
3. Scene safety
   - Scene survey
   - Scene situation
4. Assess responsiveness
   - A. Airway patent & protected
     - Yes
     - No
       - Head tilt/ chin lift
5. B. Adequate ventilation
   - Yes
   - No
6. C. Adequate circulation
   - Yes
   - No
7. AVPU assessment
8. Life threatening
   - Clinical status decision
     - Request ALS
     - Go to appropriate CPG
8. Non serious or life threat
   - Go to Secondary Survey CPG

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

Trauma → Take standard infection control precautions

Consider pre-arrival information

Scene safety
Scene survey
Scene situation

Control catastrophic external haemorrhage

Mechanism of injury suggestive of spinal injury
Yes → C-spine control
No

Assess responsiveness

A. Airway patent & protected

Jaw thrust

Suction, OPA, NPA

B. Adequate ventilation
Yes

C. Adequate circulation
Yes → AVPU assessment
No

Treat life threatening injuries only at this point

Life threatening

Clinical status decision

Serious not life threat → Go to Secondary Survey CPG
Non serious or life threat → Go to appropriate CPG

Reference: ILCOR Guidelines 2010
Secondary Survey Medical – Adult

**Primary Survey**
- Record vital signs
- Patient acutely unwell
  - Yes
  - Identify positive findings and initiate care management
  - Request ALS
  - Consider Paramedic

- Focused medical history of presenting complaint
- SAMPLE history
- Check for medications carried or medical alert jewellery

**Markers identifying acutely unwell**
- Cardiac chest pain
- Acute pain > 5

Markets identifying acutely unwell
- Cardiac chest pain
- Acute pain > 5

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

No

Secondary Survey Trauma – Adult

Markers for multi-system trauma present


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

Go to appropriate CPG

Request ALS

Consider Paramedic

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

SECTION 2 - PATIENT ASSESSMENT

PHECC Clinical Practice Guidelines - Emergency Medical Technician

Pain Management – Adult

**Pain**

- 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.

**Pain assessment**

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

**Adequate relief of pain**

- Yes or best achievable
- No

- Reassess and move up the pain ladder if appropriate
- Go back to originating CPG

**Analogue Pain Scale**

- 0 = no pain, …… 10 = unbearable

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

**Pain**

- Pain management is a priority.

**Pain ladder**

- The ladder is a guide and recommended interventions must be based on the patient's clinical condition.

**PHECC Pain Ladder**

- Severe pain (≥ 5 on pain scale)
  - Morphine 2 mg IV and/or
  - Naloxone up to 1 mg IV
  - Nitrous Oxide & Oxygen

- Moderate pain (3 to 4 on pain scale)
  - Paracetamol 1 g PO and/or
  - Ibuprofen 400 mg PO and/or

- Minor pain (2 to 3 on pain scale)
  - Paracetamol 1 g PO

**Consider other non pharmacological interventions**

**Additional analgesics**

- Consider Ondansetron 4 mg IV slowly
- Consider Cyclizine 10 mg IV slowly

**Repeat Morphine at not < 2 min intervals if indicated. Max 10 mg**

**For musculoskeletal pain Max 16 mg**

**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 cardio-vascularly stable and no cardiac chest pain present.

Reference: World Health Organization, Pain Ladder
SECTION 3 - RESPIRATORY EMERGENCIES

Advanced Airway Management – Adult

Adult Cardiac arrest

Able to ventilate

Consider option of advanced airway

Go to BLS-Adult CPG

Consider FBAO

Successful

Supraglottic Airway insertion

Successful

2nd attempt Supraglottic Airway insertion

Revert to basic airway management

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

Following successful Advanced Airway management:
1. Ventilate at 8 to 10 per minute.
2. Unsynchronised chest compressions continuous at 100 to 120 per minute

Equipment list
Non-inflatable supraglottic airway

Reference: ILCOR Guidelines 2010

RESPIRATORY EMERGENCIES

Advanced Airway Management - Adult

S3

PHECC Clinical Practice Guidelines - Emergency Medical Technician
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

**Respiratory assessment**

- ECG & SpO2 monitoring

**ECG & SpO2 monitoring**

- Electrocardiogram
- Oxygen saturation

**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

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

Assess Rhythm

Shockable VF or pulseless VT

Give 1 shock

Immediately resume CPR x 2 minutes

Minimum interruptions of chest compressions.

Maximum hands off time 10 seconds.

Go to VF/ PVT CPG

Go to Post Resuscitation Care CPG

Go to Asystole CPG

Go to PEA CPG

Attach defibrillation pads

Commence CPR while defibrillator is being prepared only if 2nd person available 30 Compressions : 2 ventilations.

Oxygen therapy

non-shockable

Asystole or PEA

Go to PEA CPG

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.

Reference: ILCOR Guidelines 2010

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

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

Consider changing defibrillator to manual mode

Change defibrillator to manual mode

Continue CPR while defibrillator is charging

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 compressions

Rate: 100 to 120/min

Depth: at least 5 cm

Ventilations

Rate: 10/min (1 every 6 sec)

Volume: 500 to 600 mL

Reference: ILCOR Guidelines 2010

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.
SECTION 4 - MEDICAL EMERGENCIES

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 < 8 years
No

Apply paediatric system AED pads
Apply adult defibrillation pads

Shockable VF or pulseless VT

Give 1 shock

Immediately resume CPR x 2 minutes

Rhythm check *

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

Non - Shockable Asystole or PEA

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

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

Change defibrillator to manual mode

Consider changing defibrillator to manual mode

Continue CPR while defibrillator is charging

One rescuer CPR 30 : 2
Two rescuer CPR 15 : 2

Compressions : Ventilations

Infant compressions:
Rate: 100 to 120/ min
Depth: 1/3 depth of chest
Child; two hands
Small child; one hand
Infant (< 1); two fingers

With two rescuer CPR use two thumb-encircling hand chest compression for infants

< 8 years use paediatric defibrillation system (if not available use adult pads)
**SECTION 4 - MEDICAL EMERGENCIES**

**Foreign Body Airway Obstruction – Adult**

- **FBAO**
- **Are you choking?**
  - **Severe (ineffective cough)**
    - **Conscious**
      - No
      - Yes
        - Consider Oxygen therapy
  - **Mild (effective cough)**
    - **Encourage cough**
      - 1 to 5 back blows followed by 1 to 5 abdominal thrusts as indicated
    - **Adequate ventilations**
      - Yes
        - Positive pressure ventilations maximum 10 per minute
      - No
        - Consider Oxygen therapy

- **One cycle of CPR**
  - **Effective**
    - Yes
  - **No**
    - Go to BLS Adult CPG
  - **Encourage cough**
    - Adequate ventilations
      - Yes
        - Positive pressure ventilations maximum 10 per minute
      - No
        - Consider Oxygen therapy

**After each cycle of CPR open mouth and look for object. If visible attempt once to remove it.**
Foreign Body Airway Obstruction – Paediatric (≤ 13 years)

Are you choking?

1. Severe (ineffective cough)
   - FBAO Severity
   - Mild (effective cough)

2. Concious
   - Yes
   - 1 to 5 back blows followed by 1 to 5 thrusts (child – abdominal thrusts) (infant – chest thrusts) as indicated
   - Encourage cough
   - Breathing adequately
   - Yes
   - Positive pressure ventilations (12 to 20/ min)
   - Consider Oxygen therapy
   - Oxygen therapy

3. Concious
   - No
   - Effective
   - Yes
   - Go to BLS Paediatric CPG

4. Concious
   - No
   - Effective
   - No
   - Go to BLS Paediatric CPG

5. Concious
   - Yes
   - Request ALS

6. Concious
   - No
   - Effective
   - Yes
   - Effective
   - No
   - Go to BLS Paediatric CPG

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**

From BLS Adult CPG

VF or VT arrest

VF or Pulseless VT – Adult

Defibrillate

Rhythm check *

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

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

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

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

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

S4

**VF or Pulseless VT - Adult**

Immediate IO access if IV not immediately accessible

Go to Post Resuscitation Care CPG

Go to PEA CPG

Go to Asystole CPG

If no ALS available

Consider transport to ED if no change after 20 minutes resuscitation

If no ALS available

Drive smoothly

Mechanical CPR device is the optimum care during transport

**AP**

**EMT**

Refer to ILCOR Guidelines 2010

Reference: ILCOR Guidelines 2010

Consider use of waveform capnography

Special Authorisation: Advanced Paramedics are authorised to substitute Amiodarone with a one off bolus of Lidocaine (1.1-1.5 mg/Kg IV) if Amiodarone is not available

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

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

Check blood glucose

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

Initial Epinephrine between 2nd and 4th shock

Amiodarone, 5 mg/kg, IV/IO

Defibrillate (4 joules/Kg)

Rhythm check*

Yes

No

VF/VT

VF or Pulseless VT arrest

Immediate IO access if IV not immediately accessible

Transport to ED if no change after 10 minutes resuscitation

If no ALS available

Consider causes and treat as appropriate:
- Hydrogen ion acidosis
- Hyper/hypokalaemia
- Hypothermia
- Hypoxia
- 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

Drive smoothly

Consider use of waveform capnography

Reference: ILCOR Guidelines 2010
Symptomatic Bradycardia – Paediatric (≤ 13 years)

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

**Symptomatic Bradycardia**

- Oxygen therapy
- Positive pressure ventilations (12 to 20/min)
- Symptomatic Bradycardia – Paediatric (≤ 13 years)
  - 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
      - Every 3 – 5 min prn
    - Persistent bradycardia
      - Yes
      - Continue CPR
    - If no ALS available
      - Immediate IO access if IV not immediately accessible
  - No
    - Request ALS
    - Reassess
    - Immediate IO access if IV not immediately accessible

**Consider advanced airway management if prolonged CPR**

**Check blood glucose**

SECTION 4 - MEDICAL EMERGENCIES

4.4.10
Version 2, 03/11

Asystole – Adult

From BLS
Adult
CPG

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

Go to Post
Resuscitation Care CPG

Go to PEA CPG

Consider transport to ED if no change after 20 minutes resuscitation

If no ALS available

Drive smoothly

ROSC

PEA

VF/VT

Consider mechanical
CPR assist

Asystole

Yes

No

With CPR ongoing maximum hands off time 10 seconds

Clinical leader to monitor quality of CPR

Mechanical CPR device is the optimum care during transport

Asystole – Adult

Rhythm check *

Asystole

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

Reference: ILCOR Guidelines 2010
SECTION 4 - MEDICAL EMERGENCIES

Pulseless Electrical Activity – Adult

From BLS Adult CPG

PEA

Immediate IO access if IV not immediately accessible

Go to Post Resuscitation Care CPG

Go to Asystole CPG

Go to VF / Pulseless VT CPG

Rhythm check *

Yes

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

NaCl IV/IO 500 mL
(use as flush)

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

Clinical leader to monitor quality of CPR

With CPR ongoing maximum hands off time 10 seconds

If no ALS available

Consider transport to ED if no change after 20 minutes resuscitation

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

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

Pulsecheck: pulse check after 2 minutes of CPR if potentially perfusing rhythm

Reference: ILCOR Guidelines 2010

4/5/6.4.11
Version 2, 03/11

PHECC Clinical Practice Guidelines - Emergency Medical Technician

35
**SECTION 4 - MEDICAL EMERGENCIES**

**Asystole/PEA – Paediatric (≤ 13 years)**

**From BLS Child CPG**

**Asystole/PEA arrest**

**AP**

Immediate IO access if IV not immediately accessible

**AP**

Go to Post Resuscitation Care CPG

**AP**

Go to VF/Pulseless VT CPG

**AP**

**Asystole/PEA**

**Rhythm check** *

Yes

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

Repeat every 3 to 5 minutes prn

**No**

**VF/VT**

**ROSC**

Advanced airway management

Check blood glucose

**AP**

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 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

Following successful Advanced Airway management:

1) Ventilate at 12 to 20 per minute.
2) Unsynchronised chest compressions continuous at 100 to 120 per minute

Clinical leader to monitor quality of CPR

With CPR ongoing maximum hands off time 10 seconds

**P**

**EMT**

**Drive smoothly**

Reference: ILCOR Guidelines 2010

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm
Post-Resuscitation Care – Adult

Return of Spontaneous Circulation

Maintain patient at rest

Spontaneous Circulation

Conscious

Yes

No

Adequate ventilation

Yes

No

Positive pressure ventilations
Max 10 per minute

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%

Request ALS

Consider active cooling if unresponsive

Maintain Oxygen therapy

Post-Resuscitation Care – Adult

Reference: ILCOR Guidelines 2010
Definitive indicators of death:
1. Decomposition
2. Obvious rigor mortis
3. Obvious pooling (hypestasis)
4. Incineration
5. Decapitation
6. Injuries totally incompatible with life

It is inappropriate to commence resuscitation

Inform Ambulance Control

Complete all appropriate documentation

Await arrival of appropriate Practitioner and/or Gardaí
SECTION 4 - MEDICAL EMERGENCIES

Cardiac Chest Pain – Acute Coronary Syndrome

Cardiac chest pain

- Oxygen therapy
- Request ALS
- Apply 3 lead ECG & SpO2 monitor
- Aspirin, 300 mg PO
- Monitor vital signs

Yes

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

No

Monitor vital signs

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

Time critical
commence transport to definitive care ASAP

EMT

4.4.16
Version 2, 09/11
Symptomatic Bradycardia – Adult

- Oxygen therapy
- Request ALS
- ECG & SpO2 monitoring
- Atropine, 0.5 mg IV
  Repeat at 3 to 5 min intervals pm to max 3 mg
- 12 lead ECG
- Reassess

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

Allergic Reaction/Anaphylaxis – Adult

**Allergic reaction**

**Oxygen therapy**

**Mild**
- Monitor reaction
- Consider subject to conditions above
- Severe anaphylaxis
- ECG & SpO₂ monitor

**Moderate**
- Salbutamol 2 puffs (0.2 mg) metered aerosol
- ECG & SpO₂ monitor
- Reassess
- Deteriorates
- Yes
- Patient prescribed Epinephrine auto injection
- Yes
- ECG & SpO₂ monitor
- Consider subject to conditions above
- Epinephrine (1:1 000) 300 mcg Auto injection
- Reassess
- Request ALS

**Severe anaphylaxis**
- Epinephrine administered pre arrival? (within 5 minutes)
- Yes
- Patient prescribed Epinephrine auto injection
- Yes
- ECG & SpO₂ monitor
- Consider subject to conditions above
- Epinephrine (1:1 000) 300 mcg Auto injection
- Reassess
- Request ALS

**Severe anaphylaxis**
- Yes
- Patient prescribed Epinephrine auto injection
- Yes
- ECG & SpO₂ monitor
- Consider subject to conditions above
- Epinephrine (1:1 000) 300 mcg Auto injection
- Reassess
- Request ALS

**Mild**
- Urticaria and or angio oedema

**Moderate**
- Mild symptoms + simple bronchospasm

**Severe anaphylaxis**
- Moderate symptoms + haemodynamic and or respiratory compromise
SECTION 4 - MEDICAL EMERGENCIES

Glycaemic Emergency – Adult

Abnormal blood glucose level

- Blood Glucose ≤ 4 mmol/L
  - Allow 5 minutes to elapse following administration of medication
  - Consider Glucose gel 10-20 g buccal or Sweetened drink
  - Reassess

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

- Blood Glucose 11 to 20 mmol/L
  - Consider or Glucose gel, 10 - 20 g buccal
  - Reassess

- Blood Glucose ≥ 4 mmol/L
  - Yes
  - Consider ALS
  - Reassess
  - Repeat x 1 prn Glucose gel 10-20 g buccal
  - No

- Blood Glucose > 20 mmol/L
  - Consider ALS
  - Reassess
4.4.20
Version 2, 07/11

Seizure/Convulsion – Adult

Seizure / convulsion

Protect from harm

Oxygen therapy

Seizure status

Post seizure

Seizing currently

Request ALS

Support head

Check blood glucose

Blood glucose < 4 mmol/L

Reassess

Still seizing

Yes

Go to Glycaemic Emergency CPG

Transport to ED if requested by Ambulance Control

No

Reassess

Alert

Recovery position

Airway management

Check blood glucose

Blood glucose < 4 mmol/L

Yes

Go to Glycaemic Emergency CPG

No

Reassess

Consider other causes of seizures

Meningitis

Head injury

Hypoglycaemia

Eclampsia

Fever

Poisons

Alcohol/drug withdrawal

EMT

SECTION 4 - MEDICAL EMERGENCIES

PHECC Clinical Practice Guidelines - Emergency Medical Technician
SECTION 4 - MEDICAL EMERGENCIES

4.4.22

Stroke

**Acute neurological symptoms**

- Complete a FAST assessment
- Maintain airway
- Oxygen therapy
- Check blood glucose
- Consider Paramedic

**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

**Oxygen therapy**
- Maintain SpO2 between 94% to 98% (lower range if COPD)

**Go to Glycaemic Emergency CPG**

- **BG** < 4 or > 20 mmol/L
- **No**
- **ECG & SpO2 monitoring**

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

  - Corrosive: Yes
  - No

  - Sips of water or milk

  - Site burns: Yes
  - No

  - Cool area

- **Poison type**
  - Paraquat
  - Other
  - Alcohol

  - Do not give oxygen
  - Consider ALS
  - Oxygen therapy

  - Check blood glucose
    - BG < 4 or > 20 mmol/L
      - Yes
      - Go to Glycaemic Emergency CPG
    - No
      - Consider Oxygen therapy

- **Caution** with oral intake

- **Consider decontamination prior to transportation**

- **MOP**
  - Adequate ventilations
    - Yes
    - Go to Inadequate Respirations CPG
    - No
  - Oxygen therapy

- **Reference:**
  - Dr Joe Tracey, Director, National Poison Information Centre

**NOTE:**
- Inadequate respirations CPG, authorises the administration of Naloxone IM for opiate overdose by Paramedics.
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: Warmed O₂ if possible
  - Remove wet clothing by cutting
  - Place patient in dry blankets/sleeping bag with outer layer of insulation
  - ECG & SpO₂ monitoring

- Immersion: No
  - Protect patient from wind chill
  - Complete primary survey (Commence CPR if appropriate)
  - Oxygen therapy: Warmed 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

**If Cardiac Arrest follow CPGs but - no active re-warming**
- Hot packs to armpits & groin

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

**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**

- **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

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

**Hypovolaemic**
- Yes
  - Go to Shock CPG
- No

**Haemorrhage controlled**
- Yes
  - Consider ALS
- No
  - Request ALS

**EMT**
- P
  - AP

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4/5/6.4.25
05/08

S4

PHECC Clinical Practice Guidelines - Emergency Medical Technician
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 ALS

Conscious
- Yes
  - Maintain Airway, Breathing & Circulation
- No

Go to Pain Mgt. CPG

Entonox absolutely contraindicated
- Yes
- Go to Nausea & Vomiting CPG
- No

Pain relief required
- Yes
- Go to Pain Mgt. CPG
- No

Nausea
- Yes
- Go to Nausea & Vomiting 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

V, P or U on AVPU scale

- Maintain airway

- Trauma
  - No
    - Recovery Position
  - Yes
    - Consider Cervical Spine

- P or U on AVPU scale

- Request ALS

- Obtain SAMPLE history from patient, relative or bystander

- ECG & SP02 monitoring

- Check temperature
- Check pupillary size & response
- Check for skin rash

Differential Diagnosis

- 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

- Glycaemic emergency
  - Go to CPG

- Shock from blood loss
  - Go to CPG

- Inadequate respirations
  - Go to CPG

- Post resuscitation care
  - Go to CPG

- Stroke
  - Go to CPG

- Symptomatic Bradycardia
  - Go to CPG

- Shock from blood loss
  - Go to CPG

- Inadequate respirations
  - Go to CPG

- Post resuscitation care
  - Go to CPG

- Stroke
  - Go to CPG

Altered Level of Consciousness – Adult

EMT
**Behavioural Emergency**

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

- **Indicators of medical cause of illness**
  - Yes: Go to appropriate CPG
  - No: **Potential to harm self or others**
    - Yes: Request control to inform Gardaí and or Doctor
    - 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: Treatment only

**Inform patient of potential consequences of treatment refusal**

- **Injury or illness potentially serious or likely to cause lasting disability**
  - Yes: Request control to inform Gardaí and or Doctor
  - No: Patient agrees to travel

**Is patient competent to make informed decision**

- **Yes**: Advise alternative care options and to call ambulance again if there is a change of mind
  - No: Document refusal of treatment and or transport to ED

**Await arrival of doctor or Gardaí or receive implied consent**

**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

Reference: HSE Mental Health Services
SECTION 4 - MEDICAL EMERGENCIES

Mental Health Emergency

Behavior 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

No

Obtain a history from patient and or bystanders present as appropriate

Potential to harm self or others

Yes

No

Reassure patient
- Explain what is happening at all times
- Avoid confrontation

Attempt verbal de-escalation

Combative with hallucinations or Paranoia & risk to self or others

Yes

No

Patient agrees to travel

- Request as appropriate: Gardaí, Medical Practitioner, Mental health team

Transport patient to an Approved Centre

Co-operate as appropriate with medical or nursing team

- RMP – Registered Medical Practitioner
- RPN – Registered Psychiatric Nurse

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

HSE Mental Health Services

PHECC Clinical Practice Guidelines - Emergency Medical Technician
End of Life – DNR

End stage terminal illness

Patient becomes acutely unwell

Respiratory distress

Yes

Basic airway maintenance

Oxygen therapy

No

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

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

Yes

Go to Primary survey CPG

No

Agreement between caregivers present and Practitioners not to resuscitate

Yes

It is inappropriate to commence resuscitation

Inform Ambulance Control

Pulse present

Yes

Pace control

No

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

Emotional support for relatives should be considered before leaving the scene

Follow local protocol for care of deceased

Appropriate Practitioner

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

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

S4

End of Life – DNT

MEDICAL EMERGENCIES

SECTION 4 - MEDICAL EMERGENCIES

PHECC Clinical Practice Guidelines - Emergency Medical Technician
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

Wrap baby to maintain temperature

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

Request ALS

No

Yes

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

PHECC Clinical Practice Guidelines - Emergency Medical Technician
SECTION 5 - OBSTETRIC EMERGENCIES

Basic Life Support - Neonate (< 4 weeks)

- **Term gestation**: Amniotic fluid clear, Breathing or crying, Good muscle tone
  - Yes
  - No
    - Request ALS

- **< 4 weeks old**
  - Birth
    - From Childbirth CPG
  - Basic Life Support – Neonate (< 4 weeks)
    - Yes
      - Assess respirations, heart rate & colour
        - Breathing, HR > 100
          - Provide warmth
            - Position; Clear airway if necessary
            - Dry, stimulate, reposition
          - Provide positive pressure ventilation for 30 sec
            - HR < 60
              - CPR for 30 sec (Ratio 3 : 1)
            - HR 60 to 100
              - Breathing, HR > 100
                - Wrap baby well and give to mother
                - Observe baby
            - If HR < 60 continue CPR (3 : 1 ratio), checking HR every 30 sec, until appropriate Practitioner takes over or HR > 60
        - Breathing well, HR > 100 but Cyanotic
          - Give Supplementary O₂
            - Persistent Cyanosis
              - No
                - Provide warmth
                  - Dry baby
              - Yes
                - Initiate mobilisation of 3 to 4 practitioners / responders on site to assist with cardiac arrest management
            - Not breathing or HR < 100
              - Provide warmth
                - Position; Clear airway if necessary
                - Dry, stimulate, reposition
              - CPR for 30 sec (Ratio 3 : 1)
                - HR < 60
                  - If HR < 60 continue CPR (3 : 1 ratio), checking HR every 30 sec, until appropriate Practitioner takes over or HR > 60
                - HR 60 to 100
                  - Breathing, HR > 100
                    - Wrap baby well and give to mother
                    - Observe baby
            - Contact Ambulance Control for direction on transport

- **Contact Ambulance Control for direction on transport**

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

- **Wrap baby well and give to mother**

- **Observe baby**

- **Term gestation**: Amniotic fluid clear, Breathing or crying, Good muscle tone

- **Birth**

- **< 4 weeks old**

- **CPR for 30 sec (Ratio 3 : 1)**
SECTION 6 - TRAUMA

External Haemorrhage – Adult

Open wound

Yes

Posture
Examination
Elevation
Pressure

Active bleeding

No

Apply sterile dressing

Consider
Oxygen therapy

Haemorrhage controlled

Yes

Apply additional dressing(s)

Haemorrhage controlled

No

Depress proximal pressure point

Haemorrhage controlled

Yes

No

Apply tourniquet

Significant blood loss

Yes

Go to Shock CPS

No

Yes

No

Repeat

No
SECTION 6 - TRAUMA

Shock from Blood Loss – Adult

4.6.2

05/08

Signs of poor perfusion

Control external haemorrhage

Oxygen therapy

Request ALS

SpO2 & ECG monitor

Signs of poor perfusion

Tachycardia
Diminished/absent peripheral pulses
Tachypnea
Irritability/confusion / ALoC
Cool, pale & moist skin
Delayed capillary refill
SECTION 6 - TRAUMA

Spinal Immobilisation – Adult

If in doubt, treat as spinal injury

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

Consider Extrication Equipment

Remove helmet (if worn)

Life Threatening

Yes

Apply cervical collar

No

Patient in sitting position

Yes

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

No

Load onto vacuum mattress/long board

Rapid extrication with long board and cervical collar

Consider Vacuum mattress

Do not forcibly restrain a patient that is combative

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

Equipment list
Long board
Vacuum mattress
Orthopaedic stretcher
Rigid cervical collar
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

Isolated superficial injury (excluding FHFP)

Commence local cooling of burn area

Consider humidified Oxygen therapy

Remove burned clothing & jewellery (unless stuck)

Dressing/ covering of burn area

Go to Pain Mgt. CPG

Yes

Pain > 2/10

No

Isolated superficial injury (excluding FHFP)

Check TBSA burn > 10%

Yes

Request ALS

ECG & SpO2 monitoring

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

Yes

Consider NaCl (0.9%), 1000 mL, IV/IO

No

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

Monitor body temperature

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

SECTION 6 - TRAUMA

Limb Injury – Adult

Establish need for pain relief

Check CSMs distal to injury site

Limb injury

Limb Injury – Adult

Provide manual stabilisation for injured limb

Go to Pain Mgt. CPG

Consider ALS

Dress open wounds

Recheck CSMs

Injury type

Fracture mid shaft of femur
Fracture
Soft tissue injury
Dislocation

Consider ALS

Reduce dislocation and apply splint

Apply traction splint
Apply appropriate splinting device

Rest
Ice
Compression
Elevation

Splint/support in position found

Yes

No

Splint/support in position found

Yes

No

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


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
SECTION 6 - TRAUMA

Head Injury – Adult

Head trauma

Maintain Airway

Oxygen therapy

Control external haemorrhage

Maintain in-line immobilisation

Yes

P or U on AVPU

Request Paramedic

No

P or U on AVPU

AL Os

Apply cervical collar

Secure to long board

SpO2 & ECG monitoring

Check blood glucose

Seizures

Yes

Go to Seizures / Convulsions CPG

No

Consider Vacuum mattress

Equipment list

Extrication device
Long board
Vacuum mattress
Orthopaedic stretcher
Rigid cervical collar

Reference;
McSwain, N, 2003, Pre Hospital Trauma Life Support 5th Edition, Mosby
**SECTION 6 - TRAUMA**

**Submersion Incident**

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

- Remove patient from liquid (Provided it is safe to do so)
- Remove horizontally if possible (consider C-spine injury)
- Complete primary survey (Commence CPR if appropriate)
- Go to Inadequate Respirations CPG
- Oxygen therapy
- SpO2 & ECG monitoring
- Indications of respiratory distress
  - Yes
  - No
  - Go to Inadequate Respirations CPG
- Monitor Pulse, Respiration & BP
- Patient is hypothermic
  - Yes
  - Go to Hypothermia CPG
  - No
  - Check blood glucose
- Transport to ED for investigation of secondary drowning insult
- Do not delay on site
- Continue algorithm en route

**Reference:**
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 Medical – Paediatric (≤ 13 years) is as follows:

1. **Medical issue**
   - Take standard infection control precautions
   - Consider pre-arrival information

2. **Scene survey**
   - Scene safety
   - Scene situation

3. **Scene situation**
   - Paediatric Assessment Triangle
     - **Appearance**
     - **Work of Breathing**
     - **Circulation**
       - Head tilt/ chin lift
       - Suction, OPA, NPA

4. **Give 5 Ventilations**
   - Oxygen therapy
     - **A** Airway patent & protected
       - Yes
       - No

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

6. **C** Pulse < 60 & signs of poor perfusion
   - **Yes**
     - AVPU assessment
     - Report findings as per Children First guidelines to ED staff and line manager in a confidential manner
   - **No**

7. **Life threatening**
   - Clinical status decision
     - Non serious or life threat
       - Go to Secondary Survey CPG
     - Serious not life threat
       - Request ALS
     - Go to appropriate CPG

8. **Serious not life threat**
   - Go to appropriate CPG

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

**Normal ranges**

- **Age**
  - Infant: 100 – 160
  - Toddler: 90 – 150
  - Pre school: 80 – 140
  - School age: 70 – 120

- **Pulse**
  - Infant: 30 – 60
  - Toddler: 24 – 40
  - Pre school: 22 – 34
  - School age: 18 – 30

**References**

- 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

**Emergency Medical Technician (EMT)**

**Paediatric Assessment Triangle**

- Normal ranges
- Infant: 100 – 160
- Toddler: 90 – 150
- Pre school: 80 – 140
- School age: 70 – 120

**Version 3, 03/12**
Primary Survey Trauma – Paediatric (≤ 13 years)

1. Take standard infection control precautions
2. Consider pre-arrival information
3. Scene safety
4. Scene survey
5. Scene situation

Paediatric Assessment Triangle

- Appearance
- Work of breathing
- Circulation to skin

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.

Control catastrophic external haemorrhage

Mechanism of injury suggestive of spinal injury

Yes: C-spine control

No:}

Mechanism of injury suggestive of spinal injury

Yes: C-spine control

No:}

Primary Survey Trauma – Paediatric (≤ 13 years)

- No
- Treat life threatening injuries only
- Expose & check obvious injuries
- Go to Secondary Survey CPG

Life threatening

Clinical status decision

Non serious or life threat

Serious not life threat

Go to Secondary Survey CPG

EMT

AP

Suction, OPA, NPA (>1 year)

Jaw thrust (Head tilt/ chin lift)

A

Airway patent & protected

Yes

No

B

Adequate ventilation

Yes

No

C

Pulse < 60 & signs of poor perfusion

Yes

No

AVPU assessment

Expose & check obvious injuries

Treat life threatening injuries only

Request ALS

Go to appropriate CPG

Normal ranges

<table>
<thead>
<tr>
<th>Age</th>
<th>Pulse</th>
<th>Respiration</th>
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- Department of Children and Youth Affairs, 2011, Children First: National Guidance for the protection and Welfare of Children
SECTION 7 - PAEDIATRIC EMERGENCIES

Secondary Survey – Paediatric (≤ 13 years)

Primary Survey

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

Secondary Survey - Paediatric (≤ 13 years)

Use age appropriate language for patient

Children and adolescents should always be examined with a chaperone (usually a parent) where possible

Estimated weight (Age x 3) + 7 Kg

Nominal ranges

<table>
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<th>Pulse</th>
<th>Respirations</th>
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</tr>
<tr>
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<td>70 – 120</td>
<td>18 – 30</td>
</tr>
</tbody>
</table>

Identify positive findings and initiate care management

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’
**Inadequate Respirations – Paediatric (≤ 13 years)**

**Equipment list**
- Volumizer to be used to administer Salbutamol

**Inadequate respirations**

- Assess and maintain airway
- Do not distress
  - Permit child to adopt position of comfort
- Consider FBAO
- Go to FBAO CPG
- Oxygen therapy

**Unresponsive patient with a falling respiratory rate**

- Request ALS

**Positive pressure ventilations**

12 to 20 per minute

**Audible wheeze**

- Yes
- Salbutamol, 2 puffs, (0.2 mg) metered aerosol
- Reassess
- ECG & SpO2 monitoring

**No**

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

**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


**Reference**

Stridor – Paediatric (≤ 13 years)

- Consider FBAO
- Assess & maintain airway
- Croup or epiglottitis suspected?
  - Yes: Do not insert anything into the mouth
  - No: Do not distress, transport in position of comfort
- Humidified O₂ – as high a concentration as tolerated
- Oxygen therapy
- ECG & SpO₂ monitoring
**SECTION 7 - PAEDIATRIC EMERGENCIES**

**Allergic Reaction/Anaphylaxis – Paediatric (≤ 13 years)**

- **Mild**
  - Urticaria and or angioedema

- **Moderate**
  - Mild symptoms + simple bronchospasm

- **Severe**
  - Moderate symptoms + haemodynamic and or respiratory compromise

---

**Allergic Reaction**

- **Mild**
  - Oxygen therapy
  - Monitor reaction
  - ECG & SpO2 monitor
  - Salbutamol 2 puffs (0.2 mg) metered aerosol

- **Moderate**
  - ECG & SpO2 monitor
  - Salbutamol 2 puffs (0.2 mg) metered aerosol
  - Reassess

- **Severe/Anaphylaxis**
  - Epinephrine administered pre arrival? (within 5 minutes)
    - No
      - Monitor reaction
      - ECG & SpO2 monitor
    - Yes
      - Patient prescribed Epinephrine auto injection
        - Yes
          - Epinephrine (1:1000) 6 mts to < 10 yrs use junior auto injector ≥ 10 yrs use auto injector
        - No
          - ECG & SpO2 monitor
          - Epinephrine (1:1000) 6 mts to < 10 yrs use junior auto injector ≥ 10 yrs use auto injector

- **Consider subject to conditions above**

---

**Epinephrine (1:1000)**

- 6 mts to < 10 yrs use junior auto injector
  - ≥ 10 yrs use auto injector

---

**Deteriorates**

- Yes
  - ECG & SpO2 monitor
  - Request ALS

- No
  - Reassess

---

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

4.7.8
Version 2, 03/11
Glycaemic Emergency – Paediatric (≤ 13 years)

Abnormal blood glucose level

< 4 mmol/L

Blood Glucose

> 10 mmol/L

Consider

Glucose gel, 5-10 g buccal
or

Sweetened drink

Glucagon

> 8 years, 1 mg IM
≤ 8 years, 0.5 mg IM

Patient alert

Yes

No

Reassess

Yes

Request ALS

No

Blood glucose level

< 4 mmol/L

A or V on AVPU

> 10 mmol/L

Yes

No

Request ALS

4.7.9 05/08
### Seizure/Convulsion – Paediatric (≤ 13 years)

**Seizure / convulsion**
- **Protect from harm**
- **Oxygen therapy**

#### Seizure status
- Seizuring currently
- Seizure status
- Post seizure

#### Seizing currently
- **Request ALS**
- Support head
- **Check blood glucose**
  - **Blood glucose < 4 mmol/L**
    - Go to Glycaemic Emergency CPG
  - **Blood glucose ≥ 4 mmol/L**
    - **Wassess**
      - **Transport to ED if requested by Ambulance Control**

#### Post seizure
- **Alert**
  - Yes → **Consider ALS**
  - No → **Reassess**

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

---

**EMT**

4.7.10 Version 2, 07/11

Go to Glycaemic Emergency CPG

- **Consider**
  - Paracetamol, 20 mg/kg, PO
- **Check blood glucose**
  - **Blood glucose < 4 mmol/L**
    - Go to Glycaemic Emergency CPG
  - **Blood glucose ≥ 4 mmol/L**
    - **Reassess**

**If pyrexial – cool child**

**Recovery position**

**Airway management**
External Haemorrhage – Paediatric (≤ 13 years)

Open wound

Yes

Active bleeding

No

Posture Elevation Examination Pressure

Apply sterile dressing

Consider Oxygen therapy

Haemorrhage controlled

Yes

No

Apply additional dressing(s)

Depress proximal pressure point

Haemorrhage controlled

Yes

No

Apply tourniquet

Significant blood loss

Yes

Go to Shock CPG

No
SHOCK FROM BLOOD LOSS – PEDIATRIC (≤ 13 years)

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

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

**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**

Reference: World Health Organization, Pain Ladder
Spinal Immobilisation – Paediatric (≤ 13 years)

[Diagram]

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

- If in doubt, treat as spinal injury

Remove helmet (if worn)

Life Threatening

- Do not forcibly restrain a paediatric patient that is combative

Consider Extrication

Apply cervical collar

Patient in sitting position

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

Immobilise in the child seat

- Patient in undamaged child seat

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

Load onto vacuum mattress/ long board/ paediatric board

Consider Vacuum mattress

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

Note: equipment must be age appropriate

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

References:
- 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: Should cool for another 10 minutes during packaging and transfer.
- **Respiratory distress**: Consider humidified Oxygen therapy.
- **Respiratory distress** and time from injury to ED > 1 hour: Request ALS.
- **ECG & SpO2 monitoring**.
- **TBSA burn > 5%**: NaCl (0.9%) IV/IO. > 10 years = 500 mL, 5 ≤ 10 years = 250 mL.
- **Inadequate Respiration** CPG: Go to Inadequate Respiration CPG.
- **Isolated superficial injury** (excluding FHPP): Dressing/covering of burn area.
- **Face, Hands, Feet, Flexion points, Perineum**: Go to Pain Mgt. CPG.
- **Pain > 2/10**: 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

Return of Spontaneous Circulation

Maintain patient at rest

Monitor vital signs

Positive pressure ventilations Max 12 to 20 per minute

Adequate ventilation

Yes

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**

**Possible Major Emergency**

1. Take standard infection control precautions
2. Consider pre-arrival information
3. PPE (high visibility jacket and helmet) must be worn
4. 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

5. 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
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

Entry to Outer Cordon (Silver area) is controlled by an Garda Síochána

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


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
Triage is a dynamic process.

Multiple casualty incident

- Can casualty walk?
  - Yes: Priority 1 (Immediate) - RED
  - No: Is casualty breathing?
    - Yes: Open airway one attempt
      - Breathing now?
        - Yes: Priority 2 (Urgent) - YELLOW
        - No: Respiratory rate < 10 or > 29
          - Yes: Priority 3 (Delayed) - GREEN
          - No: Capillary refill > 2 sec or Pulse > 120
            - Yes: Priority 1 (Immediate) - RED
            - No: DEAD

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;

- \( \text{age} \times 3 + 7 \text{ Kg} \)
- 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:

<table>
<thead>
<tr>
<th>ASPIRIN</th>
<th>Add</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional information</td>
<td></td>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OXYGEN</th>
<th>Add</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SpO₂ &lt; 94% adults &amp; &lt; 96% paediatrics</td>
<td></td>
<td>SpO₂ &lt; 97%</td>
</tr>
<tr>
<td>Usual dosages</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adult:</strong> Life threats identified during primary survey; 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 94% - 98%. All other acute medical and trauma titrate O₂ to achieve SpO₂ 94% - 98%.</td>
<td></td>
<td><strong>Adult:</strong> via BVM, Pneumothorax; 100 % via high concentration reservoir mask. All other acute medical and trauma titrate to SpO₂ &gt; 97%.</td>
</tr>
<tr>
<td><strong>Paediatric:</strong> Life threats identified during primary survey; 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 96% - 98%. All other acute medical and trauma titrate O₂ to achieve SpO₂ of 96% - 98%.</td>
<td></td>
<td><strong>Paediatric:</strong> via BVM, All other acute medical and trauma titrate to SpO₂ &gt; 97%.</td>
</tr>
<tr>
<td>Additional information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### PARACETAMOL

<table>
<thead>
<tr>
<th>Heading</th>
<th>Add</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indications</strong></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><strong>Contraindications</strong></td>
<td>Chronic liver disease</td>
<td>Paracetamol given in previous 4 hours</td>
</tr>
<tr>
<td><strong>Additional information</strong></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><strong>Additional information</strong></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>
<tr>
<td>Index of medication formulary (Adult ≥ 14 and Paediatric ≤ 13 unless otherwise stated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>Epinephrine (1:1000)</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Glucagon</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Glucose gel</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>Glyceryl Trinitrate</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>Nitrous Oxide 50% &amp; Oxygen 50%</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>Oxygen</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>Paracetamol</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Salbutamol</td>
<td>91</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX 1 - MEDICATION FORMULARY

**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:

### DRUG NAME: **EPINEPHRINE (1:1 000)**

<table>
<thead>
<tr>
<th>Class</th>
<th>Sympathetic agonist.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Descriptions</strong></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><strong>Presentation</strong></td>
<td>Pre-filled syringe, ampoule or auto injector (for EMT use) 1 mg/1 mL (1:1 000).</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Intramuscular (IM). (CPG: 5/6.4.18, 5/6.7.8, 4.4.18, 4.7.8).</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Severe anaphylaxis.</td>
</tr>
<tr>
<td><strong>Contra-Indications</strong></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. |
### GLUCAGON

<table>
<thead>
<tr>
<th>Class</th>
<th>Hormone and antihypoglycaemic.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptions</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>Presentation</td>
<td>1 mg vial powder and solution for reconstitution (1 mL).</td>
</tr>
<tr>
<td>Administration</td>
<td>Intramuscular (IM). (CPG: 5/6.4.19, 5/6.7.9, 4.4.19, 4.7.9).</td>
</tr>
<tr>
<td>Indications</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>Contra-Indications</td>
<td>Known severe adverse reaction. Phaeochromocytoma.</td>
</tr>
</tbody>
</table>
| Usual Dosages | **Adult:** 1 mg IM.  
               | **Paediatric:**  
               | ≤ 8 years 0.5 mg (500 mcg) IM.  
               | >8 years 1 mg IM. |
| Pharmacology/Action | Glycogenolysis. Increases plasma glucose by mobilising glycogen stored in the liver. |
| Side effects   | Rare, may cause hypotension, dizziness, headache, nausea and vomiting. |
| Additional information | 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. |
### GLUCOSE GEL

<table>
<thead>
<tr>
<th><strong>CLASS</strong></th>
<th>Antihypoglycaemic.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DESCRIPTIONS</strong></td>
<td>Synthetic glucose paste.</td>
</tr>
<tr>
<td><strong>PRESENTATION</strong></td>
<td>Glucose gel in a tube or sachet.</td>
</tr>
<tr>
<td><strong>ADMINISTRATION</strong></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><strong>INDICATIONS</strong></td>
<td>Hypoglycaemia. Blood Glucose &lt; 4 mmol/L. EFR: Known diabetic with confusion or altered levels of consciousness.</td>
</tr>
<tr>
<td><strong>CONTRA-INDICATIONS</strong></td>
<td>Known severe adverse reaction.</td>
</tr>
<tr>
<td><strong>USUAL DOSAGES</strong></td>
<td>Adult: 10 – 20 g buccal. Repeat prn. Paediatric: ≤ 8 years; 5 – 10 g buccal, &gt;8 years; 10 – 20 g buccal. Repeat prn.</td>
</tr>
<tr>
<td><strong>PHARMACOLOGY/ACTION</strong></td>
<td>Increases blood glucose levels.</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>May cause vomiting in patients under the age of five if administered too quickly.</td>
</tr>
<tr>
<td><strong>ADDITIONAL INFORMATION</strong></td>
<td>Glucose gel will maintain glucose levels once raised but should be used secondary to Dextrose or Glucagon to reverse hypoglycaemia. Proceed with caution: - patients with airway compromise. - altered level of consciousness.</td>
</tr>
</tbody>
</table>
# Glyceryl Trinitrate (GTN)

## Class
Nitrate.

## Descriptions
Special preparation of Glyceryl trinitrate in an aerosol form that delivers precisely 0.4 mg of Glyceryl trinitrate per spray.

## Presentation
Aerosol spray: metered dose 0.4 mg (400 mcg).

## Administration
**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).

## Indications
- Angina.
- Suspected Myocardial Infarction (MI).
- EFR: may assist with administration.
- Advanced Paramedic and Paramedic: Pulmonary oedema.

## Contraindications
- SBP < 90 mmHg.
- Viagra or other phosphodiesterase type 5 inhibitors (Sildenafil, Tadalafil and Vardenafil) used within previous 24 hr.
- Known severe adverse reaction.

## Usual Dosages
- **Adult:** Angina or MI; 0.4 mg (400 mcg) Sublingual. Repeat at 3–5 min intervals, Max: 1.2 mg. EFR: 0.4 mg sublingual max. Pulmonary oedema; 0.8 mg (800 mcg) sublingual. Repeat x 1.
- **Paediatric:** Not indicated.

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

## Side effects
Headache, Transient Hypotension, Flushing, Dizziness.

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

**CLINICAL LEVEL:**

<table>
<thead>
<tr>
<th>DRUG NAME</th>
<th>NITROUS OXIDE 50% AND OXYGEN 50% (ENTONOX®)</th>
</tr>
</thead>
<tbody>
<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>Usual Dosages</td>
<td><strong>Adult:</strong> Self-administered until pain relieved. <strong>Paediatric:</strong> Self-administered until pain relieved.</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>
<tr>
<td>Administration</td>
<td>Inhalation via: - high concentration reservoir (non-rebreather) mask - simple face mask - venturi mask - tracheostomy mask - nasal cannulae - Bag Valve Mask (CPG: Oxygen is used extensively throughout the CPGs)</td>
</tr>
<tr>
<td>Indications</td>
<td>Absent/inadequate ventilation following an acute medical or traumatic event. SpO2 &lt; 94% adults and &lt; 96% paediatrics. SpO2 &lt; 92% for patients with acute exacerbation of COPD.</td>
</tr>
<tr>
<td>Contra-Indications</td>
<td>Paraquat poisoning &amp; Bleomycin lung injury.</td>
</tr>
<tr>
<td>Usual Dosages</td>
<td>Adult: Cardiac and respiratory arrest: 100%. Life threats identified during primary survey: 100% until a reliable SpO2 measurement obtained then titrate O2 to achieve SpO2 of 94% - 98%. For patients with acute exacerbation of COPD, administer O2 titrate to achieve SpO2 92% or as specified on COPD Oxygen Alert Card. All other acute medical and trauma titrate O2 to achieve SpO2 94% - 98%. Paediatric: Cardiac and respiratory arrest: 100%. Life threats identified during primary survey: 100% until a reliable SpO2 measurement obtained then titrate O2 to achieve SpO2 of 96% - 98%. All other acute medical and trauma titrate O2 to achieve SpO2 of 96% - 98%.</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>Oxygenation of tissue/organs.</td>
</tr>
<tr>
<td>Side Effects</td>
<td>Prolonged use of O2 with chronic COPD patients may lead to reduction in ventilation stimulus.</td>
</tr>
<tr>
<td>Additional Information</td>
<td>A written record must be made of what oxygen therapy is given to every patient. Documentation recording oximetry measurements should state whether the patient is breathing air or a specified dose of supplemental oxygen. Consider humidifier if oxygen therapy for paediatric patients is &gt;30 minute duration. Avoid naked flames, powerful oxidising agent.</td>
</tr>
</tbody>
</table>
### Paracetamol

<table>
<thead>
<tr>
<th><strong>Class</strong></th>
<th>Analgesic and antipyretic.</th>
</tr>
</thead>
<tbody>
<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. Advanced Paramedics 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>
</tbody>
</table>
| **Usual Dosages**  | **Adult**: 1 g PO. **Paediatric** (AP Only)  
 < 1 year – 60 mg PR.  
 1-3 years – 180 mg PR.  
 4-8 years – 360 mg PR.  
 PO 20 mg/Kg PO. |
| **Pharmacology/Action** | Analgesic – central prostaglandin inhibitor. Antipyretic – prevents the hypothalamus from synthesising prostaglandin E, inhibiting the body temperature from rising further. |
| **Side effects**   | None. Long term use at high dosage or over dosage can cause liver damage and less frequently renal damage. |
| **Additional information** | 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. |
### APPENDIX 1 - MEDICATION FORMULARY

**CLINICAL LEVEL:**

<table>
<thead>
<tr>
<th>DRUG NAME</th>
<th>SALBUTAMOL</th>
</tr>
</thead>
<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>
</tbody>
</table>
| **Presentation** | Nebule 2.5 mg in 2.5 mL.  
Nebule 5 mg in 2.5 mL.  
Aerosol inhaler: metered dose 0.1 mg (100 mcg). |
| **Administration** | 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). |
| **Indications** | Bronchospasm.  
Exacerbation of COPD.  
Respiratory distress following submersion incident. |
| **Contra-Indications** | Known severe adverse reaction. |
| **Usual Dosages** | **Adult:** 5 mg NEB.  
Repeat at 5 min prn (APs x 3 and Ps x 1).  
EMT & EFR: 0.1 mg metered aerosol spray x 2.  
**Paediatric:** < 5 yrs - 2.5 mg NEB.  
≥ 5 yrs - 5 mg NEB.  
Repeat at 5 min prn (APs x 3 and Ps x 1).  
EMT & EFR: 0.1 mg metered aerosol spray x 2. |
| **Pharmacology/Action** | Beta 2 agonist.  
Bronchodilation.  
Relaxation of smooth muscle. |
| **Side effects** | Tachycardia.  
Tremors.  
Tachyarrhythmias. |
| **Long-term side effects** | High doses may cause hypokalaemia. |
| **Additional information** | 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. |
NEW FOR 2012:

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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

**CLINICAL LEVEL**

<table>
<thead>
<tr>
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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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### APPENDIX 2 - MEDICATION & SKILLS MATRIX

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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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## APPENDIX 2 - MEDICATION & SKILLS MATRIX

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### APPENDIX 2 - MEDICATION & SKILLS MATRIX

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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
APPENDIX 3 - CRITICAL INCIDENT STRESS MANAGEMENT

POST-TRAUMATIC STRESS REACTIONS

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

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

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

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

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

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

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

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

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

**Experiencing signs of excessive stress**

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

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

- Speak to your **GP**.

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

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

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

We would like to thank the National Ambulance Service CISM Committee for their help in preparing this section.
APPENDIX 4 - CPG UPDATES FOR EMERGENCY MEDICAL TECHNICIAN

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>
<thead>
<tr>
<th>CPGS</th>
<th>THE PRINCIPAL DIFFERENCES ARE:</th>
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<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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</tbody>
</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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</table>
| 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. |
PRE-HOSPITAL DEFIBRILLATION POSITION PAPER

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

Cardiac arrest management process

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