Practitioner
Emergency Medical Technician
Clinical Practice Guidelines

EMERGENCY MEDICAL TECHNICIAN

CLINICAL PRACTICE GUIDELINES - 2014 Edition

PHECC Clinical Practice Guidelines

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Abbey Moat House, Abbey Street, Naas, Co Kildare, Ireland
Phone: + 353 (0)45 882042
Fax: + 353 (0)45 882089
Email: info@phecc.ie
Web: www.phecc.ie

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Clinical Practice Guidelines
EMERGENCY MEDICAL TECHNICIAN

CLINICAL PRACTICE GUIDELINES - 2014 Edition

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The role of the Pre-Hospital Emergency Care Council (PHECC) is to protect 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 contents of this clinical publication are fundamental to how we achieve this goal.

Clinical Practice Guidelines have been developed for responders and practitioners to aid them in providing world-class pre-hospital emergency care to people in Ireland.

I would like to thank the members of the Medical Advisory Committee, chaired by Dr Mick Molloy for their efforts and expertise in developing these guidelines. The council acknowledge the work of the PHECC Executive in researching and compiling these Guidelines, in particular Mr Brian Power, Programme Development Officer. I also commend the many responders and practitioners whose ongoing feedback has led to the improvement and creation of many of the Guidelines herein.

The publication of these Guidelines builds on the legacy of previous publications and marks yet another important milestone in the development of care delivered by responders and practitioners throughout Ireland. Despite the difficulties faced by responders and licensed service providers, I am proud that they continue to develop their skills and knowledge to provide safer and more effective patient care.

Mr Tom Mooney, Chair, Pre-Hospital Emergency Care Council
Accepted abbreviations

Advanced Paramedic ................................................................. AP
Advanced Life Support ............................................................. ALS
Airway, Breathing & Circulation ............................................. ABC
All Terrain Vehicle ................................................................. ATV
Altered Level of Consciousness .............................................. ALoC
Automated External Defibrillator .......................................... AED
Bag Valve Mask ........................................................................ BVM
Basic Life Support ................................................................. BLS
Blood Glucose ........................................................................... BG
Blood Pressure .......................................................................... BP
Basic Tactical Emergency Care ............................................. BTEC
Carbon Dioxide ........................................................................ CO₂
Cardiopulmonary Resuscitation ............................................. CPR
Cervical Spine ........................................................................... C-spine
Chronic Obstructive Pulmonary Disease ............................... COPD
Clinical Practice Guideline ...................................................... CPG
Degree ....................................................................................... °
Degrees Centigrade ................................................................... °C
Dextrose 10% in water .............................................................. D₁₀₀W
Drop (gutta) ................................................................................ gtt
Electrocardiogram ................................................................. ECG
Emergency Department ........................................................... ED
Emergency Medical Technician .............................................. EMT
Endotracheal Tube ...................................................................... ETT
Foreign Body Airway Obstruction ........................................... FBAO
Fracture ..................................................................................... #
General Practitioner ............................................................... GP
Glasgow Coma Scale ............................................................... GCS
Gram ......................................................................................... g
Milligram .................................................................................... mg
Millilitre ....................................................................................... mL
### ACCEPTED ABBREVIATIONS (contd)

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<td>Millimole</td>
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<tr>
<td>Minute</td>
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<td>Modified Early Warning Score</td>
<td>MEWS</td>
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<tr>
<td>Motor Vehicle Collision</td>
<td>MVC</td>
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<tr>
<td>Myocardial Infarction</td>
<td>MI</td>
</tr>
<tr>
<td>Nasopharyngeal airway</td>
<td>NPA</td>
</tr>
<tr>
<td>Milliequivalent</td>
<td>mEq</td>
</tr>
<tr>
<td>Millimetres of mercury</td>
<td>mmHg</td>
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<tr>
<td>Nebulised</td>
<td>NEB</td>
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<tr>
<td>Negative decadic logarithm of the H+ ion concentration</td>
<td>pH</td>
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<td>Orally (per os)</td>
<td>PO</td>
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<tr>
<td>Oropharyngeal airway</td>
<td>OPA</td>
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<tr>
<td>Oxygen</td>
<td>O₂</td>
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<tr>
<td>Paramedic</td>
<td>P</td>
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<tr>
<td>Peak Expiratory Flow</td>
<td>PEF</td>
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<tr>
<td>Per rectum</td>
<td>PR</td>
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<tr>
<td>Percutaneous Coronary Intervention</td>
<td>PCI</td>
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<tr>
<td>Personal Protective Equipment</td>
<td>PPE</td>
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<tr>
<td>Pulseless Electrical Activity</td>
<td>PEA</td>
</tr>
<tr>
<td>Respiration rate</td>
<td>RR</td>
</tr>
<tr>
<td>Return of Spontaneous Circulation</td>
<td>ROSC</td>
</tr>
<tr>
<td>Revised Trauma Score</td>
<td>RTS</td>
</tr>
<tr>
<td>Saturation of arterial oxygen</td>
<td>SpO₂</td>
</tr>
<tr>
<td>ST Elevation Myocardial Infarction</td>
<td>STEMI</td>
</tr>
<tr>
<td>Subcutaneous</td>
<td>SC</td>
</tr>
<tr>
<td>Sublingual</td>
<td>SL</td>
</tr>
<tr>
<td>Systolic Blood Pressure</td>
<td>SBP</td>
</tr>
<tr>
<td>Therefore</td>
<td>:</td>
</tr>
<tr>
<td>Total body surface area</td>
<td>TBSA</td>
</tr>
<tr>
<td>Ventricular Fibrillation</td>
<td>VF</td>
</tr>
<tr>
<td>Ventricular Tachycardia</td>
<td>VT</td>
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<tr>
<td>When necessary (pro re nata)</td>
<td>prn</td>
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</table>

- Millimole: mmol
- Minute: min
- Modified Early Warning Score: MEWS
- Motor Vehicle Collision: MVC
- Myocardial Infarction: MI
- Nasopharyngeal airway: NPA
- Milliequivalent: mEq
- Millimetres of mercury: mmHg
- Nebulised: NEB
- Negative decadic logarithm of the H+ ion concentration: pH
- Orally (per os): PO
- Oropharyngeal airway: OPA
- Oxygen: O₂
- Paramedic: P
- Peak Expiratory Flow: PEF
- Per rectum: PR
- Percutaneous Coronary Intervention: PCI
- Personal Protective Equipment: PPE
- Pulseless Electrical Activity: PEA
- Respiration rate: RR
- Return of Spontaneous Circulation: ROSC
- Revised Trauma Score: RTS
- Saturation of arterial oxygen: SpO₂
- ST Elevation Myocardial Infarction: STEMI
- Subcutaneous: SC
- Sublingual: SL
- Systolic Blood Pressure: SBP
- Therefore: :
ACKNOWLEDGEMENTS

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

PROJECT LEADER & EDITOR

Mr Brian Power, Programme Development Officer, PHECC.

INITIAL CLINICAL REVIEW

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

MEDICAL ADVISORY COMMITTEE

Dr Mick Molloy, (Chair) Consultant in Emergency Medicine
Dr Niamh Collins, (Vice Chair) Consultant in Emergency Medicine, Connolly Hospital Blanchardstown
Prof Gerard Bury, Professor of General Practice, University College Dublin
Dr Seamus Clarke, General Practitioner, representing the Irish College of General Practitioners
Mr Jack Collins, Emergency Medical Technician, Representative from the PHECC register
Prof Stephen Cusack, Consultant in Emergency Medicine, Cork University Hospital
A/Prof Conor Deasy, Consultant in Emergency Medicine, Cork University Hospital, Deputy Medical Director HSE National Ambulance Service
Mr Michael Dineen, Paramedic, Vice Chair of Council
Mr David Hennelly, Advanced Paramedic, Clinical Development Manager, National Ambulance Service
Mr Macartan Hughes, Advanced Paramedic, Head of Education & Competency Assurance, HSE National Ambulance Service
Mr David Irwin, Advanced Paramedic, representative from the Irish College of Paramedics
Mr Thomas Keane, Paramedic, Member of Council
Mr Shane Knox, Education Manager, National Ambulance Service College
Col Gerard Kerr, Director, the Defence Forces Medical Corps
Mr Declan Loneran, Advanced Paramedic, Education & Competency Assurance Manager, HSE National Ambulance Service
Mr Seamus McAllister, Divisional Training Officer, Northern Ireland Ambulance Service
Dr David McManus, Medical Director, Northern Ireland Ambulance Service
Dr David Menzies, Consultant in Emergency Medicine, Clinical Lead, Emergency Medical Science, University College Dublin
Mr Shane Mooney, Advanced Paramedic, Chair of Quality and Safety Committee
Mr Joseph Mooney, Emergency Medical Technician, Representative from the PHECC register
Mr David O’Connor, Advanced Paramedic, representative from the PHECC register
Dr Peter O’Connor, Consultant in Emergency Medicine, Medical Advisor Dublin Fire Brigade
Mr Cathal O’Donnell, Consultant in Emergency Medicine, Medical Director, HSE National Ambulance Service
Mr Kenneth O’Dwyer, Advanced Paramedic, representative from the PHECC register
Mr Martin O’Reilly, Advanced Paramedic, District Officer Dublin Fire Brigade
Mr David O’Connor, Advanced Paramedic, representative from the PHECC register
Mr Rory Prevett, Paramedic, representative from the PHECC register
Dr Neil Reddy, Medical Director, Code Blue
Mr Derek Rooney, Paramedic, representative from the PHECC register
Ms Valerie Small, Advanced Nurse Practitioner, Chair of Education and Standards Committee.
Dr Sean Walsh, Consultant in Paediatric Emergency Medicine, Our Lady’s Hospital for Sick Children, Crumlin
EXTERIOR CONTRIBUTORS
Ms Diane Brady, CNM II, Delivery Suite, Castlebar Hospital.
Mr Ray Brady, Advanced Paramedic
Mr Joseph Browne, Advanced Paramedic
Dr Ronan Collins, Director of Stroke Services, Age Related Health Care, Adelaide & Meath Hospital, Tallaght.
Mr Denis Daly, Advanced Paramedic
Mr Jonathan Daly, Emergency Medical Technician
Dr Zelie Gaffney Daly, General Practitioner
Prof Kieran Daly, Consultant Cardiologist, University Hospital Galway
Mr Mark Dixon, Advanced Paramedic
Dr Colin Doherty, Neurology Consultant
Mr Michael Donnellan, Advanced Paramedic
Dr John Dowling, General Practitioner, Donegal
Mr Damien Gaumont, Advanced Paramedic
Dr Una Geary, Consultant in Emergency Medicine
Dr David Janes, General Practitioner
Mr Lawrence Kenna, Advanced Paramedic
Mr Paul Lambert, Advanced Paramedic
Dr George Little, Consultant in Emergency Medicine
Mr Christy Lynch, Advanced Paramedic
Dr Pat Manning, Respiratory Consultant
Dr Adrian Murphy, Specialist Register in Emergency Medicine
Dr Regina McQuillan, Palliative Care Consultant, St Francis Hospice, Raheney
Prof. Alf Nicholson, Consultant Paediatrician
Dr Susan O’Connell, Consultant Paediatrician
Mr Paul O’Driscoll, Advanced Paramedic
Ms Helen O’Shaughnessy, Advanced Paramedic
Mr Tom O’Shaughnessy, Advanced Paramedic
Dr Michael Power, Consultant Anaesthetist
Mr Colin Pugh, Paramedic
Mr Kevin Reddington, Advanced Paramedic
Ms Barbara Shinners, Emergency Medical Technician
Dr Dermott Smith, Consultant Endocrinologist
Dr Alan Watts, Register in Emergency Medicine
Prof Peter Weedle, Adjunct Prof of Clinical Pharmacy, National University of Ireland, Cork.
Mr Brendan Whelan, Advanced Paramedic

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HSE National Clinical Programme for Emergency Medicine
HSE National Clinical Programme for Epilepsy
HSE National Clinical Programme for Paediatrics and Neonatology

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EXTERNAL CLINICAL PROOFREADING
Ms Joanne Fitzroy, EMT
Ms Niamh O’Leary, EMT
Clinical Practice Guidelines for pre-hospital care are under constant review as practices change, new therapies and medications are introduced, and as more pre-hospital clinical pathways are introduced such as Code STEMI and code stroke which are both leading to significant improved outcomes for patients. A measure of how far the process has developed can be gained from comparing the 29 Standard Operating Procedures for pre-hospital care in existence prior to the inception of the Pre-Hospital Emergency Care Council and the now more than 319 guidelines and growing.

The 2014 guidelines include such new developments as the use of intranasal fentanyl for advanced paramedics and harness induced suspension trauma for both practitioners and responders.

Clinical Practice Guidelines recognise that practitioners and responders provide care to the same patients but to different skill levels and utilising additional pharmaceutical interventions depending on the practitioner level.

This edition of the guidelines has introduced some new concepts such as the basic tactical emergency care standard at EFR and EMT level for appropriately employed individuals. As ever feedback on the guidelines from end users or interested parties is always welcomed and may be directed to the Director of PHECC or the Medical Advisory Committee who review each and every one of the guidelines before they are approved by the Council.

Feedback on the CPGs may be given through the centre for Pre-hospital Research www.ul.ie/cpr/forum
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 a licensed CPG provider (paid or voluntary).
3. The practitioner is privileged by the licensed CPG provider 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 utilised.

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>Classification</th>
<th>Description</th>
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<tbody>
<tr>
<td>Adult</td>
<td>A patient of 16 years or greater, unless specified on the CPG.</td>
</tr>
<tr>
<td>Child</td>
<td>A patient between 1 and less than or equal to (≤) 15 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>

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, the provision of emergency care comes from a range of disciplines and includes responders (Cardiac First Responders, First Aid Responders and Emergency First Responders) 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 traumatic 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.

Emergency Medical Technician – Basic Tactical Emergency Care (EMT–BTEC)

EMT-BTEC certifies registered EMTs with additional knowledge and skill set for providing pre-hospital emergency care in hostile or austere environments. EMT-BTEC training is restricted to EMTs who have the potential to provide emergency care in hostile or austere environments and who are working or volunteering on behalf of a Licensed CPG Provider with specific approval for BTEC provision.

Emergency First Response – Basic Tactical Emergency Care (EFR–BTEC)

EFR-BTEC is a new education and training standard published in 2014. Persons certified at EFR-BTEC learn EFR and the additional knowledge and skill set for providing pre-hospital emergency care in hostile or austere environments. Entry to this course is restricted to people who have the potential to provide emergency first response in hostile or austere environments and who are working or volunteering on behalf of a Licensed CPG Provider with specific approval for BTEC provision.

First Aid Response

First Aid Response (FAR) is a new education and training standard published in 2014. This standard offers training and certification to individuals and groups who require a first aid skill set including cardiac first response. This standard is designed to meet basic first aid and basic life support (BLS) requirements that a certified person, known as a “First Aid Responder”, may encounter in their normal daily activities.

Defibrillation Policy

The Medical Advisory Committee 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.
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Clinical Practice Guidelines

EMERGENCY MEDICAL TECHNICIAN

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

- **Emergency Medical Technician**
- **Paramedic**
- **Advanced Paramedic**

**Sequence step**
- A sequence (skill) to be performed
- A mandatory sequence (skill) to be performed
- A decision process
- Consider treatment options
- Finding following clinical assessment, leading to treatment modalities
- Reassess the patient following intervention
- Contact Ambulance Control and request Advanced Life Support (AP or doctor)
- Consider requesting an ALS response, based on the clinical findings

**Mandatory sequence step**
- The Practitioner must follow one route
- Given the clinical presentation consider the treatment option specified
- Transport to an appropriate medical facility and maintain treatment en-route
- If no ALS available

**Special instructions**
- Which the Practitioner must follow
- An instruction box for information
- A skill or sequence that only pertains to Paramedic or higher clinical levels
- Special authorisation

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

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

**Go to xxx CPG**
- A clinical condition that may precipitate entry into the specific CPG

**Start from**
- A cyclical process in which a number of sequence steps are completed

**Versioning**
- 4/5/6.4.1
- Version 2, 07/11
- 4/5/6.x.y
- Version 2, mm/yy

**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

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

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

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

**A direction to go to a specific CPG following a decision process**
- Note: only go to the CPGs that pertain to your clinical level
SECTION 1
CARE PRINCIPLES

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

PHECC Care Principles

1. Ensure the safety of yourself, other emergency service personnel, your patients and the public.
2. Seek consent prior to initiating interventions and/or administering medications.
3. Identify and manage life-threatening conditions.
4. Ensure adequate ventilation and oxygenation.
5. Optimise tissue perfusion.
6. Provide appropriate pain relief.
7. Identify and manage other conditions.
8. Place the patient in the appropriate posture according to the presenting condition.
9. Ensure the maintenance of normal body temperature (unless a CPG indicates otherwise).
10. Provide reassurance at all times.
11. Monitor and record patient’s vital observations.
12. Maintain responsibility for patient care until handover to an appropriate practitioner.
13. Arrange transport to an appropriate medical facility as necessary and in an appropriate time frame.
14. Complete patient care records following an interaction with a patient.
15. Identify the clinical leader on scene; this shall be the most qualified practitioner on scene. In the absence of a more qualified practitioner, the practitioner providing care during transport shall be designated the clinical leader as soon as practical.
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 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.

- **Scene safety**
- **Scene survey**
- **Scene situation**

**Assess responsiveness**

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

B - **Adequate ventilation**
   - Yes
   - **Agressiveness**
   - No

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

**Life threatening**

- Request ALS
- Go to appropriate CPG

**Clinical status decision**

- **Non serious or life threat**
- **Serious not life threat**

- **Go to Secondary Survey CPG**
- **Consider ALS**
- **Oxygen therapy**

**Special Authorisation:**
EMTs having completed the BTEC course may be privileged by a licensed CPG provider to insert an NPA on its behalf.

Reference: ILCOR Guidelines 2010
**Clinical Practice Guidelines**

**SECTION 2**

**PATIENT ASSESSMENT**

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

**Primary Survey Trauma – Adult**

1. **Trauma**
   - Take standard infection control precautions
   - 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
             - Yes: Suction, OPA, NPA
             - No: Jaw thrust
               - Yes: Oxygen therapy
               - No:
                 - B: Adequate ventilation
                   - Yes: Special Authorisation: EMTs having completed the BTEC course may be privileged by a licensed CPG provider to insert an NPA on its behalf
                   - No:
                     - C: Adequate circulation
                       - Yes: AVPU assessment
                       - No:
                         - Treat life-threatening injuries only at this point
               - Go to Secondary Survey CPG
     - No:
       - Life threatening:
         - Request ALS
         - Go to appropriate CPG
       - Non serious or life threat:
         - Go to Secondary Survey CPG
       - Serious not life threat:
         - Consider ALS
         - Go to Secondary Survey CPG

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

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

Go to appropriate CPG

Identify positive findings and initiate care management

Record vital signs

Patient acutely unwell
- Yes
  - Identify positive findings and initiate care management

No
  - Focused medical history of presenting complaint
  - SAMPLE history
  - Check for medications carried or medical alert jewellery
  - Consider Paramedic

Gleadle, J. 2003, History and Examination at a glance, Blackwell Science
Rees, JE, 2003, Early Warning Scores, World Anaesthesia Issue 17, Article 10
SECTION 2
PATIENT ASSESSMENT

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

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
- Consider Paramedic
- Request ALS

No
- Primary Survey
- Record vital signs
- SAMPLE history
- Complete a head to toe survey as history dictates
- Check for medications carried or medical alert jewellery
- Consider Paramedic
- Request ALS

Go to appropriate CPG

Identify positive findings and initiate care management

**SECTION 2**

**PATIENT ASSESSMENT**

---

**Pain Management – Adult**

---

**Pain**

Practitioners, depending on his/her scope of practice, may make a clinical judgement and commence pain relief on a higher rung of the pain ladder.

---

**Pain assessment**

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

---

**Yes or best achievable**

Go back to originating CPG

---

**Adequate relief of pain**

No

---

Reassess and move up the pain ladder if appropriate

---

**Reference:** World Health Organization, Pain Ladder and/or PHECC Pain Ladder and/or AP Pain Management – Adult

---

**Mild pain**

(1 to 3 on pain scale)

- Paracetamol 1 g PO

---

**Consider other non-pharmacological interventions**

---

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

---

**Special Authorisation:**

APs are authorised to administer Morphine, up to 10 mg IM, if IV not accessible, the patient is cardiovascularly stable and no cardiac chest pain present

---

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

Advanced Airway Management – Adult

Adult Cardiac arrest

Able to ventilate

Yes

Consider option of advanced airway

No

Consider FBAO

Go to BLS-Adult CPG

Supraglottic Airway insertion

Successful

Yes

2nd attempt Supraglottic Airway insertion

Successful

Yes

Revert to basic airway management

No

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

Continue ventilation and oxygenation

Go to appropriate CPG

Minimum interruptions of chest compressions.
Maximun 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

Special Authorisation:
EMTs may use cuffed supraglottic airways subject to maintaining competence and Medical Director authorisation

Reference: ILCOR Guidelines 2010
SECTION 3
RESPIRATORY EMERGENCIES

Inadequate Ventilations – Adult

Respiratory difficulty

- Airway patent & protected
  - Yes
    - Check SpO2
    - Consider ETCO2

- No
  - Go to Airway CPG

Oxygen therapy

- Request ALS

Patient assessment

Consider positive pressure ventilations (Max 10 per minute)

Brain insult

- Go to Head injury CPG

Respiratory failure

- Go to Respiratory assessment

Substance intake

- Go to Poison CPG

Other

- Consider pain, posture & neuromuscular disorders

Asymmetrical breath sounds

- Go to Asthma CPG
  - Bronchospasm/know asthma
  - Go to Allergy/COPD CPG

Creptations

- Go to Sepsis CPG

Other

- Consider shock, cardiac/neurological/systemic illness, pain or psychological upset

Consider collapse, consolidation & fluid

- Tension Pneumothorax suspected
  - Yes
    - Needle decompression
  - No
    - Go to APO CPG

100% O2 initially unless patient has known COPD
Titrated O2 to standard as clinical condition improves

Raised ETCO2 + reduced SpO2:
- Consider assisted ventilation

Raised ETCO2 + normal SpO2:
- Encourage deep breaths

Go to Apo CPG

Go to Asthma CPG
Go to COPD CPG
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)
**Clinical Practice Guidelines**

**SECTION 3**

**RESPIRATORY EMERGENCIES**

---

**Asthma – Adult**

- **Evaluating and Maintaining Airway**
- **Respiratory Assessment**

**Mild Asthma**

- Salbutamol, 5 mg, NEB
- Or
- Ipratropium bromide 0.5 mg NEB & salbutamol 5 mg NEB mixed

**Moderate Asthma**

- Salbutamol, 5 mg, NEB

**Severe Asthma**

- Hydrocortisone, 100 mg slow IV (infusion in 100 mL NaCl)
- If no improvement, Salbutamol aerosol, 0.1 mg may be repeated up to 5 times as required

**Life-threatening Asthma**

- Consider Magnesium Sulphate 2 g IV (infusion in 100 mL NaCl)
- Salbutamol, 5 mg, NEB
- Every 5 minutes prn

---

SECTION 4
MEDICAL EMERGENCIES

**Basic Life Support – Adult**

- **Cardiac Arrest**
  - Assess Rhythm
  - Give 1 shock
  - Immediately resume CPR x 2 minutes
  - Rhythm check *
  - Go to VF/VT CPG (VF/VT)
  - ROSC
  - Go to Post Resuscitation Care CPG
  - Asystole CPG
  - PEA CPG
  - Go to Asystole CPG
  - Go to VF/VT CPG

- **Shockable**
  - VF or pulseless VT
  - Consider changing defibrillator to manual mode
  - Change defibrillator to manual mode
  - Oxygen therapy

- **Non-Shockable**
  - Asystole or PEA
  - Change defibrillator to manual mode

**Oxygen therapy**

**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

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

**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.**

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

Reference: ILCOR Guidelines 2010
**SECTION 4**

**MEDICAL EMERGENCIES**

Foreign Body Airway Obstruction – Adult

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

- After each cycle of CPR open mouth and look for object. If visible attempt once to remove it.
**VF or Pulseless VT – Adult**

1. **Immediate IO access if IV not immediately accessible**

2. **VF or VT arrest**
   - **Defibrillate**
   - **Rhythm check**
     - **Yes**
     - **VF/VT**
   - **No**
     - **Asystole**

3. **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

4. **Sodium Bicarbonate (8.4%) 1 mEq/Kg IV**
   - Initial epinephrine between 2nd and 4th shock
   - Epinephrine (1:10 000) 1 mg IV/IO
   - Every 3 to 5 minutes prn

5. **Initial Epinephrine between 2nd and 4th shock**

6. **Go to Post Resuscitation Care CPG**
   - **ROSC**
   - **PEA CPG**

7. **Go to Asystole CPG**
   - **Asystole**

8. **If torsades de pointes, consider**
   - **Magnesium Sulphate 2 g IV/IO**

9. **Consider transport to ED if no change after 20 minutes resuscitation**
   - **If no ALS available**

10. **Consider causes and treat as appropriate:**
    - Hydrogen ion acidosis
    - Hypo/hyperkalaemia
    - Hypothermia
    - Hypovolaemia
    - Hypoxia
    - Thrombosis – pulmonary
    - Tension pneumothorax
    - Thrombus – coronary
    - Tamponade – cardiac
    - Toxins
    - Trauma

11. **Clinical leader to monitor quality of CPR**
    - Include use of waveform capnography

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

**VF or Pulseless VT – Adult**

**Defibrillate**

- **1st dose**
- **2nd dose (if required)**
  - **Amiodarone 300 mg (5 mg/kg) IV/IO**
  - **Amiodarone 150 mg (2.5 mg/kg) IV/IO**

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

**Continue CPR during charging**

**Immediate IO access if IV not immediately accessible**

**VF or VT arrest**

**Rhythm check**

**VF/VT**

**Asystole**

**Epinephrine (1:10 000) 1 mg IV/IO**

**Sodium Bicarbonate (8.4%) 1 mEq/Kg IV**

**Initial Epinephrine between 2nd and 4th shock**

**Go to Post Resuscitation Care CPG**

**ROSC**

**PEA CPG**

**Go to Asystole CPG**

**Asystole**

**If torsades de pointes, consider**

**Magnesium Sulphate 2 g IV/IO**

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

**If no ALS available**

**Consider causes and treat as appropriate:**

- Hydrogen ion acidosis
- Hypo/hyperkalaemia
- Hypothermia
- Hypovolaemia
- Hypoxia
- Thrombosis – pulmonary
- Tension pneumothorax
- Thrombus – coronary
- Tamponade – cardiac
- Toxins
- Trauma

**Clinical leader to monitor quality of CPR**

- Include use of waveform capnography

**Special Authorisation:**

- Advanced Paramedics are authorised to substitute Amiodarone with a single bolus of Lidocaine (1-1.5 mg/Kg IV) if Amiodarone is not available

**Reference:** ILCOR Guidelines 2010

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* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm
SECTION 4
MEDICAL EMERGENCIES

4.4.4
Version 2, 03/11

Asystole – Adult

From BLS Adult CPG

Go to Post Resuscitation Care CPG

Go to PEA CPG

Go to VF / Pulseless VT CPG

Consider transport to ED if no change after 20 minutes resuscitation

If no ALS available

Rhythm check *

Yes

Asystole

No

Consider mechanical CPR assist

PEA

ROS C

Advanced airway management

Mechanical CPR device is the optimum care during transport

With CPR ongoing maximum hands off time 10 seconds

Clinical leader to monitor quality of CPR

Drive smoothly

* +/- 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

Immediate IO access if IV not immediately accessible

Go to Post Resuscitation Care CPG

Go to Asystole CPG

Go to VF / Pulseless VT CPG

Consider transport to ED if no change after 20 minutes resuscitation

If no ALS available

Mechanical CPR device is the optimum care during transport

4/5/6.4.6
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AP

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

With CPR ongoing maximum hands off time 10 seconds

Clinical leader to monitor quality of CPR

Consider use of waveform capnography

NaCl 20 mL/Kg IV/IO

If Tricyclic Antidepressant Toxicity or harness induced suspension trauma consider

Sodium Bicarbonate (8.4%) 1 mEq/Kg IV

Reference: ILCOR Guidelines 2010

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm
SECTION 4
MEDICAL EMERGENCIES

**Post-Resuscitation Care – Adult**

- Return of Spontaneous Circulation
  - Maintain patient at rest
  - Monitor vital signs
  - Maintain Oxygen therapy
  - Request ALS
    - Conscious
      - Yes
      - No
    - No
      - Adequate ventilation
        - Yes
        - No
          - Positive pressure ventilations
            - Max 10 per minute
          - Recovery position
  - Consider active cooling if unresponsive
  - Maintain care until handover to appropriate Practitioner

- Titrate O2 to 94% - 98%
- Drive smoothly

**Equipment list**
- Cold packs

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

4.4.8
Version 1, 06/10

End of Life – DNR

End stage terminal illness

Patient becomes acutely unwell

Yes

Respiratory distress

No

Basic airway maintenance

Oxygen therapy

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

Yes

Agreement between caregivers present and Practitioners not to resuscitate

No

Go to Primary survey CPG

Patient becomes acutely unwell

Pulse present

Yes

Inform Ambulance Control

No

Complete all appropriate documentation

Keep next of kin informed, if present

Emotional support for relatives should be considered before leaving the scene

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

End stage terminal illness

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

Appropriate Practitioner

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

Follow local protocol for care of deceased

Provide supportive care until handover to appropriate Practitioner

Consult with Ambulance Control re: ‘location to transport patient / deceased’
Signs of Life

Yes
Go to Primary survey CPG

Definitive indicators of Death

Yes

It is inappropriate to commence resuscitation

Inform Ambulance Control

Complete all appropriate documentation

Await arrival of appropriate Practitioner and / or Gardaí

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

Apparent dead body

No

Definitive indicators of Death

No

Go to Primary survey CPG

Recognition of Death – Resuscitation not Indicated
Cardiac Chest Pain – Acute Coronary Syndrome

**Cardiac Chest Pain**

- Oxygen therapy
  - Request ALS
- Apply 3 lead ECG & SpO2 monitor
- Aspirin, 300 mg PO
- GTN, 0.4 mg SL, repeat at 3 to 5 min prn (max 1.2 mg SL)
- Monitor vital signs

**Yes: Chest Pain**

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

**No**

- Time critical, commence transport to definitive care ASAP

Reference: ILCOR Guidelines 2010
SECTION 4
MEDICAL EMERGENCIES

Symptomatic Bradycardia – Adult

- Oxygen therapy
- ECG & SpO2 monitoring
- Atropine, 0.6 mg IV
  Repeat at 3 to 5 min intervals prn to max 3 mg
- 12 lead ECG
- NaCl (0.9%) 250 mL IV infusion
  (Repeat x one prn)
- Reassess

Symptomatic includes:
- Acute altered mental status
- Ischemic chest discomfort
- Acute heart failure
- Hypotension
- Signs of shock

Titrate Atropine to effect (HR > 60)

Reference: ILCOR guidelines 2010
Altered Level of Consciousness – Adult

V, P or U on AVPU scale

Maintain airway

No: Trauma

Yes: Recovery Position

Consider Cervical Spine

P or U on AVPU scale

Yes: Obtain SAMPLE history from patient, relative or bystander

ECG & SPo2 monitoring

Check temperature

Check pupillary size & response

Check for skin rash

Check for medications carried or medical alert jewellery

Check blood glucose

Differential Diagnosis

Symptomatic Bradycardia

Glycaemic emergency

Shock from blood loss

Inadequate respirations

Post resuscitation care

Stroke

Submersion incident

Head injury

Hypothermia

Poison

Seizures

Go to CPG

Go to CPG

Go to CPG

Go to CPG

Go to CPG

Go to CPG

Go to CPG

Go to CPG

Go to CPG
**Clinical Practice Guidelines**

**EMERGENCY MEDICAL TECHNICIAN**

**SECTION 4**

**MEDICAL EMERGENCIES**

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**4.4.15**

**Version 3, 02/14**

**Allergic Reaction/Anaphylaxis – Adult**

- **Mild**
  - Urticaria and/or angioedema
  - Salbutamol 5 mg NEB
  - Repeat at 5 min prn
  - Monitor reaction

- **Moderate**
  - Mild symptoms + simple bronchospasm
  - Nebulised Salbutamol may be substituted with up to 4 puffs of Salbutamol aerosol

- **Severe/ anaphylaxis**
  - Moderate symptoms + haemodynamic and/or respiratory compromise
  - Epinephrine (1:1 000) 0.3 mg Auto injection
  - Reassess

- **Deteriorates**
  - Epinephrine administered pre arrival? (within 5 minutes)
    - Yes: Epinephrine (1:1 000) 0.3 mg Auto injection
      - Repeat at 5 min prn
      - Reassess
      - Request ALS
    - No: Salbutamol 5 mg NEB
      - Repeat at 5 min prn
      - Reassess
      - Consider Paramedic

- **Oxygen therapy**

---

**Nebulised Salbutamol may be substituted with up to 4 puffs of Salbutamol aerosol**
SECTION 4
MEDICAL EMERGENCIES

Decompression Illness (DCI)

SCUBA diving within 48 hours

Entonox absolutely contraindicated

Consider diving buddy as possible patient also

Transport dive computer and diving equipment with patient, if possible

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

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

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

Pain relief required

Yes

Go to Nausea & Vomiting CPG

No

Monitor ECG & SpO₂

NaCl (0.9%) 500 mL IV/IO

Notify control of query DCI & alert ED

Epistaxis

Medical

- Advise patient to sit forward
- Apply digital pressure for 15 minutes
- Advise patient to breathe through mouth only and not to blow nose

Trauma

- Primary Survey Medical
- Primary Survey Trauma

Haemorrhage controlled
- No
- Consider ALS
- P
- Consider insertion of a proprietary nasal pack
- Hypovolaemic
- Yes
- Request ALS
- Go to Shock CPG
- P
- No
- Go to Shock CPG

Glycaemic Emergency – Adult

Abnormal blood glucose level

< 4 mmol/L

Yes

Blood Glucose ≥ 4 mmol/L

No

Allow 5 minutes to elapse following administration of medication

> 20 mmol/L

Consider ALS

11 to 20 mmol/L

Consider or Glucose gel, 10 - 20 g buccal

< 4 mmol/L

Glucagon 1 mg IM

Blood Glucose ≥ 4 mmol/L

Yes

Reassess

No

Consider ALS

Repeat x 1 pm Glucose gel 10-20 g buccal

Reassess
Clinical Practice Guidelines
EMERGENCY MEDICAL TECHNICIAN

SECTION 4
MEDICAL EMERGENCIES

4.4.21
Version 2, 02/14

Hypothermia

- Query hypothermia

- Immersion
  - Yes
    - Remove patient horizontally from liquid (Provided it is safe to do so)
  - No

- Protect patient from wind chill

- Complete primary survey (Commence CPR if appropriate)

- 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)
  - If Cardiac Arrest follow CPGs but - no active re-warming
    - Pulse check for 30 to 45 seconds
    - Request ALS
    - Hot packs to armpits & groin
    - Check blood glucose

- Hypothermic patients should be handled gently & not permitted to walk

- Members of rescue teams should have a clinical leader of at least EFR level

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

Reference:
- Pennington M, et al, 1994, Wilderness EMT, Wilderness EMS Institute
Poison source

- Yes: Ingested corrosive
  - Sips of water or milk
  - ConsiderALS

- No: Caution with oral intake

Poison type

- Paraquat
  - With Paraquat poisoning do not administer oxygen unless SpO₂ < 92%
- Other
- Alcohol
  - Check blood glucose
  - BG < 4 or > 20 mmol/L
    - Yes: Go to Glycaemic Emergency CPG
    - No: Adequate ventilations
- Opiate
  - Consider Oxygen therapy
  - ECG & SpO₂ monitoring
  - Naloxone 0.8 mg IN or Naloxone 0.4 mg IM/SC
  - Go to Inadequate Ventilations CPG

Reference:
- ILCOR Guidelines 2010
SECTION 4
MEDICAL EMERGENCIES

4.4.23
Version 2, 07/11

Seizure/Convulsion – Adult

Seizure / convolution

- Protect from harm
- Oxygen therapy

Seizure status

Seizing currently

- Request ALS
- Support head
- Check blood glucose

Blood glucose < 4 mmol/L

- Yes
- Go to Glycaemic Emergency CPG

- No
- Transport to ED if requested by Ambulance Control

Seizure status

Post seizure

Consider ALS

Alert

Yes

Recovery position

No

Check blood glucose

Blood glucose < 4 mmol/L

- Yes
- Go to Glycaemic Emergency CPG

- No

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

Transport to ED if requested by Ambulance Control

Go to Glycaemic Emergency CPG
If systolic BP < 100 mmHg consider aliquots NaCl 0.9%, 250 mL IV/IO

If temperature > 38°C consider Paracetamol, 1 g PO

Patient unwell

Sepsis – Adult

Signs of Systemic Inflammatory Response Syndrome (SIRS)
- Temperature < 36 or > 38.3°C
- Heart rate > 90
- Respiratory rate > 20
- Acutely confused
- Glucose > 7.7 (not diabetic)
- Has the patient two or more signs (SIRS)

Could this be a severe infection?
For example
- Pneumonia
- Meningitis/ meningococcal disease
- UTI
- Abdominal pain or distension
- Indwelling medical device
- Cellulitis/ septic arthritis/ infected wound
- Chemotherapy < 6 weeks
- Recent organ transplant

Yes

ECG & SpO2 monitoring

Oxygen therapy

Request ALS

Benzylpenicillin, 1,200 mg slow IV or IM

If temperature > 38°C consider Paracetamol, 1 g PO

If systolic BP < 100 mmHg consider aliquots NaCl 0.9%, 250 mL IV/IO

If meningitis suspected ensure appropriate PPE is worn; Mask and goggles

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

Sickle Cell crisis

Oxygen therapy

Pain management required

Yes

Go to Pain CPG

No

Elevated temperature

Yes

Go to Sepsis CPG

No

Encourage oral fluids

Dehydration & unable to take oral fluids

Yes

Request ALS

NaCl (0.9%) 1 L IV infusion

SpO₂ & ECG monitor

If patient is cold ensure that he/she is warmed to normal temperature

Consider patient’s care plan


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

4.4.28
Version 1, 05/08

Stroke

Acute neurological symptoms

Complete a FAST assessment

- Maintain airway
- Oxygen therapy
- Check blood glucose

Go to Glycaemic Emergency CPG

BG < 4 or > 20 mmol/L

Yes

No

ECG & SpO2 monitoring

Oxygen therapy

Maintain airway

Check blood glucose

Follow local protocol re notifying ED prior to arrival

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 FAST positive

Reference: ILCOR Guidelines 2010
SECTION 4
MEDICAL EMERGENCIES

Mental Health Emergency

Behaviour abnormal with previous psychiatric history

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

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

Request control to inform Gardaí.

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

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

Transport patient to an Approved Centre.

Co-operate as appropriate with medical or nursing team.

Yes

No

Patent agrees to travel.

Patient Incapacity

Aid to Capacity Evaluation
1. Patient verbalises/communicates understanding of clinical situation?
2. Patient verbalises/communicates appreciation of applicable risk?
3. Patient verbalises/communicates ability to make alternative plan of care?
If no to any of the above consider Patient Incapacity.

HSE Mental Health Services

Version 1, 05/08
Behavioural Emergency

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

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

Obtain a history from patient and or bystanders present as appropriate

Indications of medical cause of illness

Yes

Potential to harm self or others

Yes

Request control to inform Gardai

No

Reassure patient

Explain what is happening at all times

Avoid confrontation

Attempt verbal de-escalation

Patient agrees to travel

No

Injury or illness potentially serious or likely to cause lasting disability

Yes

Inform patient of potential consequences of treatment refusal

Yes

Request control to inform Gardai and or Doctor

No

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

Await arrival of doctor or Gardai or receive implied consent

Document refusal of treatment and or transport to ED

Go to appropriate CPG

Reference: HSE Mental Health Services
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

Position mother

Monitor vital signs and BP

Birth Complications

No

Yes

Support baby throughout delivery

Dry baby and check ABCs

Baby stable

No

Yes

Wrap baby to maintain temperature

Mother stable

No

Yes

If placenta delivers, retain for inspection

Reassess

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

Consider Nitrous Oxide & Oxygen

Go to BLS Neonate CPG

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

Go to Primary Survey CPG

EMT

4.5.1 Version 1, 05/08
### Basic Life Support – Neonate (< 4 weeks)

- **Birth**
  - From Childbirth CPG
  - **< 4 weeks old**

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

**No**
- Request ALS

**Yes**
- Provide warmth
  - Position, Clear airway if necessary
  - Dry, stimulate, reposition

**Assess respirations, heart rate & colour**
- Breathing, HR > 100
- Not breathing or HR < 100

**Breathing, HR > 100 but Cyanotic**
- Give Supplementary O₂

**Persistent Cyanosis**
- No
- Yes

**Provide positive pressure ventilation for 30 sec**
- HR < 60
  - CPR for 30 sec (Ratio 3 : 1)
- HR 60 to 100
  - Assess Heart Rate
- Breathing well, HR > 100

**Contact Ambulance Control for direction on transport**

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

Burn or Scald

Cease contact with heat source

Inhalation and/or facial injury

Yes

Airway management

No

Commen ce local cooling of burn area

Yes

Consider humidified Oxygen therapy

No

Go to Inadequate Ventilations CPG

Rec om mendations

- Monitor body temperature
- Dressing/covering of burn area
- Go to Pain Mgt. CPG

- Caution with hypothermia
- Caution with the elderly, circumferential & electrical burns
- Special Authorisation: Paramedics are authorised to continue the established infusion in the absence of an Advanced Paramedic or Doctor during transportation

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

Special Authorisation:

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

Reference:
External Haemorrhage – Adult

Open wound

Active bleeding

Yes

Posture Elevation Examination Pressure

Yes

Catastrophic haemorrhage

No

Haemorrhage controlled

Yes

Apply sterile dressing

Consider Oxygen therapy

Haemorrhage controlled

No

Apply additional dressing(s)

Yes

Depress proximal pressure point

Yes

Apply tourniquet

No

Significant blood loss

Yes

Go to Shock CPG

No

Reference:
ILCOR Guidelines 2010,

Equipment list
Sterile dressing (various sizes)
Crepe bandage (various sizes)
Conforming bandage (various sizes)
Triangular bandage
Trauma tourniquet
Dressing impregnated with haemostatic agent

Special Authorisation:
EMTs, having completed the BTEC course, may be privileged by a licensed CPG provider to apply a tourniquet on its behalf.

Request ALS
Clinical Practice Guidelines
SECTION 6
TRAUMA

Harness Induced Suspension Trauma

Fall arrested by harness/rope

Patient still suspended

Advise patient to move legs to encourage venous return

Elevate lower limbs if possible during rescue

Place patient in a horizontal position as soon as practically possible

Monitor BP, SpO2 and ECG

Oxygen therapy to maintain SpO2 > 94%

NaCl (0.9%) 20 mg/Kg aliquots IV to maintain Sys BP > 90 mmHg

Go to appropriate CPG

Patients must be transported to ED following suspension trauma regardless of injury status

Consider removing a harness suspended person from suspension in the direction of gravity i.e. downwards, so as to avoid further negative hydrostatic force, however this measure should not otherwise delay rescue.

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

Reference:
Adish A et al, 2009, Evidence-based review of the current guidance on first aid measures for suspension trauma, Health and Safety Executive (UK) Research report RR708
Australian Resuscitation Council, 2009, Guideline 9.1.5 Harness Suspension Trauma first aid management.
Consider mechanism of injury; is spinal immobilisation indicated?

Maintain Airway

Maintain in-line immobilisation

V, P or U on AVPU

Yes

No

Request ALS

Consider Paramedic

SpO2 & ECG monitoring

Check blood glucose

Patient seizing

Consider Vacuum mattress

Heat-Related Emergency – Adult

Collapse from heat-related condition

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

Yes
Alert
No

Give cool fluids to drink
Maintain airway

Mild Hyperthermia
(heat stress)

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

Moderate Hyperthermia
(Heat exhaustion)

Severe Hyperthermia
(Heat stroke) > 40°C

Check blood glucose

Cool patient

SpO₂ & ECG monitor

Consider
ALS

Consider

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

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

Do not over cool
Cooling may be achieved by:
- Removing clothing
- Fanning
- Tepid sponging
- Ice packs

Elevate oedematous limbs

European Resuscitation Guidelines 2010.
RFDS, 2011, Primary Clinical Care Manual
Limb Injury – Adult

1. Establish need for pain relief
2. Expose and examine limb
3. Dress open wounds
4. Provide manual stabilisation for injured limb
5. Check CSMs distal to injury site

Injury type

Fracture
Fractured femur
Soft tissue injury
Dislocation

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

**Shock from Blood Loss – Adult**

**Signs of poor perfusion**

- A: Not affected
- B: Tachypnea
- C: Tachycardia
- D: V, P or U / Irritability / confusion
- E: Cool, pale & moist skin

**Control external haemorrhage**

**Oxygen therapy**

**Lie patient flat with legs elevated (if safe to do so)**

**Request ALS**

**SpO₂ & ECG monitor**
If in doubt, treat as spinal injury.

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

Stabilise cervical spine.

Remove helmet (if worn).

Life Threatening?

Yes

Apply cervical collar.

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

Consider Vacuum mattress.

Rapid extrication with long board and cervical collar.

Load onto vacuum mattress/long board.

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

Do not forcibly restrain a patient that is combative.
If bronchospasm consider:
- Salbutamol
  - ≥ 5 years: 5 mg NEB
  - < 5 years: 2.5 mg NEB

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

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 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.

Maximum ventilation rate of 5 ventilations

No

Consider pre-arrival information

Scene safety
Scene survey
Scene situation

Paediatric Assessment Triangle

A

Airway patent & protected

Yes

Give 5 Ventilations

Adequate ventilation

Yes

No

Oxygen therapy

Head tilt/chin lift

Suction, OPA, NPA

P

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

If child protection concerns are present

Request ALS

Go to Secondary Survey

CPG

Clinical status decision

Life threatening

Non serious or life threat

Serious not life threat

Go to appropriate CPG

Normal ranges

<table>
<thead>
<tr>
<th>Age</th>
<th>Pulse</th>
<th>Respirations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant</td>
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</table>

Reference:
ILCOR Guidelines 2010, American Academy of Pediatrics, 2000, Pediatric Education for Prehospital Professionals
Department of Children and Youth Affairs, 2011, Children First: National Guidance for the Protection and Welfare of Children
Primary Survey Trauma – Paediatric (≤ 15 years)

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

1. **Scene safety**
2. **Scene survey**
3. **Scene situation**

**Paediatric Assessment Triangle**

- **Appearance**
- **Work of breathing**
- **Circulation**

**Control catastrophic external haemorrhage**

- **Mechanism of injury suggestive of spinal injury**
  - Yes: C-spine control
  - No:
    - **Exposure & check obvious injuries**
    - **Treat life-threatening injuries only**

**Paediatric Assessment Triangle**

- **Airway**
  - **A** Airway patent & protected
    - Yes
    - **B** Adequate ventilation
      - Yes
      - **C** Pulse < 60 & signs of poor perfusion
        - No: AVPU assessment
        - Yes:
          - **Pulse < 60** & signs of poor perfusion
            - Yes:
              - **AVPU assessment**
            - No: Expose & check obvious injuries
      - No: Consider Oxygen therapy
    - No: Go to Secondary Survey CPG

**Give 5 Ventilations**

- **氧etherapy**
- **Jaw thrust (Head tilt/ chin lift)**

**No**:

- Suction, CPOA (NPA> 1 year)

**Yes**:

- **Life threatening**
  - Go to appropriate CPG
  - **Clinical status decision**
  - **Non serious or life threat**
    - Go to Secondary Survey CPG

**Normal ranges**

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- ILCOR Guidelines 2010, American Academy of Pediatrics
- 2000, Pediatric Education for Prehospital Professionals
- National Guidance for the Protection and Welfare of Children
SECTION 7
PAEDIATRIC EMERGENCIES

Secondary Survey – Paediatric (≤ 15 years)

Primary Survey

- Make appropriate contact with patient and/or guardian if possible
- Use age appropriate language for patient
- 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
- Children and adolescents should always be examined with a chaperone (usually a parent) if possible
- Head to toe examination:
  - pyrexia
  - rash
  - pain
  - tenderness
  - bruising
  - wounds
  - fractures
  - medical alert jewellery
- Recheck vital signs
- Check for current medications
- Identify patient’s weight
- Estimated weight:
  - Neonate = 3.5 Kg
  - Six months = 6 Kg
  - One to five years = (age x 2) + 8 Kg
  - Greater than 5 years = (age x 3) + 7 Kg

Go to appropriate CPG

Identify positive findings and initiate care management

If child protection concerns are present

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

Reference:
Miall, Lawrence et al, 2003, Paediatrics at a Glance, Blackwell Publishing
Department of Children and Youth Affairs, 2011, Children First: National Guidance for the Protection and Welfare of Children
Luscombe, M et al 2010, BMJ, Weight estimation in paediatrics: a comparison of the APLS formula and the formula "Weight(3/age)+7"
Pain Management – Paediatric (≤ 15 years)

Pain assessment

Administer pain medication based on pain assessment and pain ladder recommendations

Adequate relief of pain

Yes or best achievable

Go back to originating CPG

No

Reassess and move up the pain ladder if appropriate

Pain assessment recommendation

0 ≤ 5 years use FLACC scale
3 – 7 years use Wong Baker scale
3 ≥ 8 years use analogue pain scale

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

Pain scale:
0 = no pain
10 = unbearable

Practitioners, depending on his/her scope of practice, may make a clinical judgement and commence pain relief on a higher rung of the pain ladder.

Severe pain
(≥ 7 on pain scale)

Paracetamol 20 mg/Kg PO

Morphine 0.05 mg/Kg PO
Max 10 mg

Morphine 0.0015 mg/Kg IN
(1.5 mcg/Kg)
Repeat every 4 h

Fentanyl 0.0015 mg/Kg IN
(1.5 mcg/Kg)
Repeat every 4 h

Consider

Ondansetron 0.1 mg/Kg
IV slowly (Max 4 mg)

Nitrous Oxide & Oxygen, inh

Mild pain
(1 to 3 on pain scale)

Paracetamol 20 mg/Kg PO

Consider other non-pharmacological interventions

Practitioners, depending on his/her scope of practice, may make a clinical judgement and commence pain relief on a higher rung of the pain ladder.

Consider

Paramedic

Repeat Fentanyl IN, once only, at not < 10 min after initial dose.

Repeat Morphine IV at not < 2 min intervals pm to Max: 0.1 mg/Kg IV

Moderate pain
(4 to 6 on pain scale)

Paracetamol 20 mg/Kg PO

and / or

Ibuprofen 10 mg/Kg PO

and / or

Nitrous Oxide & Oxygen, inh

Fentanyl 0.0015 mg/Kg IN
(1.5 mcg/Kg)
Repeat every 4 h

Consider

Ondansetron 0.1 mg/Kg
IV slowly (Max 4 mg)

Nitrous Oxide & Oxygen, inh

Mild pain
(1 to 3 on pain scale)

Paracetamol 20 mg/Kg PO

Consider other non-pharmacological interventions

Practitioners, depending on his/her scope of practice, may make a clinical judgement and commence pain relief on a higher rung of the pain ladder.

Consider

Paramedic

Repeat Fentanyl IN, once only, at not < 10 min after initial dose.

Repeat Morphine IV at not < 2 min intervals pm to Max: 0.1 mg/Kg IV

Reference: World Health Organization, Pain Ladder

Decisions to give analgesia must be based on clinical assessment and not directly on a linear scale
If suspected narcotic OD Consider

Airway patent & protected

Check \( \text{SpO}_2 \)

Oxygen therapy

Request ALS

Patient assessment

Consider positive pressure ventilations (12 to 20 per minute) via BVM

Brain insult

Respiratory failure

Substance intake

Other

Consider collapse, consolidation & fluid

Consider shock, cardiac/ neurological systemic illness, pain or psychological upset

Yes

Tension Pneumothorax suspected

Needle decompression

No

Go to Head injury CPG

Respiratory assessment

Respiratory difficulty

Asymmetrical breath sounds

Crepitations

Other

Go to Asthma CPG

Go to Anaphylaxis CPG

Go to Sepsis CPG

Consider pain, posture & neuromuscular disorders

Raised \( \text{ETCO}_2 \) + reduced \( \text{SpO}_2 \):

Consider assisted ventilation

Raised \( \text{ETCO}_2 \) + normal \( \text{SpO}_2 \):

Encourage deep breaths

100% \( \text{O}_2 \) initially

Titrate \( \text{O}_2 \) to standard as clinical condition improves

100% \( \text{O}_2 \) initially

Titrate \( \text{O}_2 \) to standard as clinical condition improves

Respiratory difficulty

Airway patent & protected

Check \( \text{SpO}_2 \)

ETCO2

Check ETCO2

Oxygen therapy

Request ALS

Patient assessment

Consider positive pressure ventilations (12 to 20 per minute) via BVM

Brain insult

Respiratory failure

Substance intake

Other

Consider collapse, consolidation & fluid

Consider shock, cardiac/ neurological systemic illness, pain or psychological upset

Yes

Tension Pneumothorax suspected

Needle decompression

No

Go to Head injury CPG

Respiratory assessment

Respiratory difficulty

Airway patent & protected

Check \( \text{SpO}_2 \)

ETCO2

Check ETCO2

Oxygen therapy

Request ALS

Patient assessment

Consider positive pressure ventilations (12 to 20 per minute) via BVM

Brain insult

Respiratory failure

Substance intake

Other

Consider collapse, consolidation & fluid

Consider shock, cardiac/ neurological systemic illness, pain or psychological upset

Yes

Tension Pneumothorax suspected

Needle decompression

No

Go to Head injury CPG

Respiratory assessment

Respiratory difficulty

Airway patent & protected

Check \( \text{SpO}_2 \)

ETCO2

Check ETCO2

Oxygen therapy

Request ALS

Patient assessment

Consider positive pressure ventilations (12 to 20 per minute) via BVM

Brain insult

Respiratory failure

Substance intake

Other

Consider collapse, consolidation & fluid

Consider shock, cardiac/ neurological systemic illness, pain or psychological upset

Yes

Tension Pneumothorax suspected

Needle decompression

No

Go to Head injury CPG

Respiratory assessment
Asthma – Paediatric (≤ 15 years)

Assess and maintain airway

Respiratory assessment

< 5 years Salbutamol 2.5 mg NEB
≥ 5 years Salbutamol 5 mg, NEB

Ox

Salbutamol (0.1 mg) metered aerosol

Resolved/improved

Yes

No

ECG & SpO2 monitoring

Oxygen therapy

Request ALS

< 5 years Salbutamol 2.5 mg NEB
≥ 5 years Salbutamol 5 mg, NEB

Pretropirn bromide

< 12 years 0.25 mg NEB
≥ 12 years 0.5 mg NEB
& age specific Salbutamol NEB mixed

Resolved/improved

Yes

No

Salbutamol, age-specific dose, NEB

Resolved/improved

Yes

No

Hydrocortisone (in 100 mL NaCl)

< 1 year 25 mg IV
1 – 5 years 50 mg IV
> 5 years 100 mg IV

Salbutamol, age-specific dose, NEB

Resolved/improved

Yes

No

Salbutamol, age specific dose, NEB
Every 5 minutes prn

If no improvement Salbutamol aerosol, 0.1 mg may be repeated; for < 5 year olds up to 3 times, for ≥ 5 year olds up to 5 times, as required

**Stridor – Paediatric (≤ 15 years)**

1. **Stridor**
2. **Consider FBAO**
3. **Assess & maintain airway**
   - **Group or epiglottis suspected**
     - **Yes**
       - **Do not insert anything into the mouth**
     - **No**
5. **Do not distress**
   - **Transport in position of comfort**
6. **Humidified O₂ – as high a concentration as tolerated**
   - **Oxygen therapy**
7. **ECG & SpO₂ monitoring**
Basic Life Support – Paediatric (≤ 15 Years)

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

Give 1 shock

Shockable: VF or pulseless VT

Assess Rhythm

Go to VF / Pulsatile VT CPG

Non- Shockable: Asystole or PEA

Apply paediatric system AED pads

Immediately resume CPR x 2 minutes

Rhythm check *

Go to VF / Pulsatile VT CPG

Infant AED

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

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

Reference: ILCOR Guidelines 2010
Foreign Body Airway Obstruction – Paediatric (≤ 15 years)

**Are you choking?**
- **Yes**: Encourage cough
  - Breathing adequately
    - Yes: Positive pressure ventilations (12 to 20/min)
    - No: Go to BLS Paediatric CPG
  - Not breathing adequately
    - Yes: Consider Oxygen therapy
    - No: Go to BLS Paediatric CPG

- **No**: FBAO Severity
  - Severe (ineffective cough)
    - Conscious
      - Yes: 1 to 5 back blows followed by 1 to 5 thrusts (child – abdominal thrusts) (infant – chest thrusts) as indicated
      - No: Consider Oxygen therapy
    - Request ALS
  - Mild (effective cough)
    - Effective
      - Yes: Go to BLS Paediatric CPG
      - No: One cycle of CPR
    - No: Go to BLS Paediatric CPG

**Conscious**
- Yes: Attempt 5 Rescue Breaths
- No: Go to BLS Paediatric CPG

**Effective**
- Yes: Go to BLS Paediatric CPG
- No: One cycle of CPR

**Emergency Medical Technician (EMT)**
- Paediatric

**Pre-Hospital Emergency Care Council**

**SECTION 7**
PAEDIATRIC EMERGENCIES

4/5.7.21
Version 2, 12/13
**VF or Pulseless VT – Paediatric (≤ 15 years)**

- **VF or VT arrest**
- **VF or Pulseless VT**
- **Immediate IO access if IV not immediately accessible**
- **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:**

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

**Consider causes and treat as appropriate:**

- Hypoxia
- Hypoglycemia
- Hypothermia
- Hypovolemia
- Hypoxia
- Thrombosis – pulmonary
- Tension pneumothorax
- Thrombus – coronary
- Tamponade – cardiac
- Toxins
- Trauma

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

**Continued CPR during charging**

**Defibrillate (4 joules/Kg)**

**VF/VT**

- **Rhythm check**
- **No**
- **VF/VT**
- **Yes**

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

**Repeat every 3 to 5 minutes prn**

**Initial Epinephrine between 2nd and 4th shock**

**Refractory VF/VT post Epinephrine**

- **Amiodarone, 5 mg/kg, IV/IO**

**Transport to ED if no change after 10 minutes resuscitation**

**If no ALS available**

**Advanced airway management**

**Check blood glucose**

**Clinical leader to monitor quality of CPR**

**Choose causes and treat as appropriate:**

- Hydrogen ion acidosis
- Hyper/hypokalaemia
- Hypothermia
- Hypovolaemia
- Hypoxia
- Thrombosis – pulmonary
- Tension pneumothorax
- Thrombus – coronary
- Tamponade – cardiac
- Toxins
- Trauma

**Consider use of waveform capnography**

**Follow before successful Advanced Airway management:**

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

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

**VF or VT arrest**

**≤ 8 years use paediatric defibrillation system**

(if not available use adult pads)

**VF or VT arrest**

**≤ 8 years use paediatric defibrillation system**

(if not available use adult pads)

**VF or VT arrest**

**≤ 8 years use paediatric defibrillation system**

(if not available use adult pads)

**VF or VT arrest**

**≤ 8 years use paediatric defibrillation system**

(if not available use adult pads)

**VF or VT arrest**

**≤ 8 years use paediatric defibrillation system**

(if not available use adult pads)

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**VF or VT arrest**

**≤ 8 years use paediatric defibrillation system**

(if not available use adult pads)

**VF or VT arrest**

**≤ 8 years use paediatric defibrillation system**

(if not available use adult pads)
**SECTION 7**

**PAEDIATRIC EMERGENCIES**

**Asystole/PEA – Paediatric (≤ 15 years)**

From BLS Paediatric CPG

**Asystole/PEA arrest**

Immediate IO access if IV not immediately accessible

Go to Post Resuscitation Care CPG

Transport to ED if no change after 10 minutes resuscitation

If no ALS available

**VF/VT**

ROSC

Go to Post Resuscitation Care CPG

**VF/VT CPG**

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

Repeat every 3 to 5 minutes prn

Rhythm check *

Yes

No

With CPR ongoing maximum hands off time 10 seconds

**Clinical leader to monitor quality of CPR**

**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 (0.9%) 20 mL/Kg IV/IO

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

**Check blood glucose**

AP

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

Reference: ILCOR Guidelines 2010

* +/- Pulse check: pulse check after 2 minutes of CPR if potentially perfusing rhythm
**Symptomatic Bradycardia – Paediatric (≤ 15 years)**

**Oxygen therapy**

Yes → Hypoxia

No → Consider positive pressure ventilations (12 to 20/min)

**ECG & SpO2 monitoring**

**Yes**

**ALS**

**Unresponsive Signs of Inadequate perfusion & HR < 60**

Yes → CPR

No → Check blood glucose

**No**

**Check blood glucose**

**NaCl (0.9%) 20 mL/Kg IV/IO**

**Yes**

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

Every 3 – 5 min prn

**No**

**Persistent bradycardia**

Yes → Continue CPR

**If no ALS available**

**Immediate IO access if IV not immediately accessible**

**Collective signs of inadequate perfusion**

- Tachypnoea
- Diminished/absent peripheral pulses
- Delayed capillary refill
- Cool extremities, mottling
- Unresponsive

Post-Resuscitation Care – Paediatric (≤ 15 years)

**Return of Spontaneous Circulation**

- Maintain patient at rest
- Monitor vital signs
- Check blood glucose
- Maintain care until handover to appropriate Practitioner

**Yes**
- Oxygen therapy
- ECG & SpO2 monitoring
- Monitor vital signs
- Check blood glucose
- Maintain care until handover to appropriate Practitioner

**No**
- Recovery position
- Consider active cooling if unresponsive
- Positive pressure ventilations Max 12 to 20 per minute
- Request ALS
  - Conscious
    - Yes
    - Maintain Oxygen therapy
    - Request ALS
  - No
    - Adequate ventilation
      - Yes
      - Maintain Oxygen therapy
      - Request ALS
      - Conscious
        - Yes
        - Maintain Oxygen therapy
        - Request ALS
      - No
        - Adequate ventilation
          - Yes
          - Maintain Oxygen therapy
          - Request ALS
          - Conscious
            - Yes
            - Maintain Oxygen therapy
            - Request ALS
            - Adequate ventilation
              - Yes
              - Maintain Oxygen therapy
              - Request ALS
              - Conscious
                - Yes
                - Maintain Oxygen therapy
                - Request ALS
                - Adequate ventilation
                  - Yes
                  - Maintain Oxygen therapy
                  - Request ALS
                  - Conscious
                    - Yes
                    - Maintain Oxygen therapy
                    - Request ALS
                    - Adequate ventilation
                      - Yes
                      - Maintain Oxygen therapy
                      - Request ALS
                      - Conscious
                        - Yes
                        - Maintain Oxygen therapy
                        - Request ALS
                        - Adequate ventilation
                          - Yes
                          - Maintain Oxygen therapy
                          - Request ALS
                          - Conscious
                            - Yes
                            - Maintain Oxygen therapy
                            - Request ALS
                            - Adequate ventilation
                              - Yes
                              - Maintain Oxygen therapy
                              - Request ALS
                              - Conscious
                                - Yes
                                - Maintain Oxygen therapy
                                - Request ALS
                                - Adequate ventilation
                                  - Yes
                                  - Maintain Oxygen therapy
                                  - Request ALS
                                  - Conscious
                                    - Yes
                                    - Maintain Oxygen therapy
                                    - Request ALS
                                    - Adequate ventilation
                                      - Yes
                                      - Maintain Oxygen therapy
                                      - Request ALS
                                      - Conscious
                                        - Yes
                                        - Maintain Oxygen therapy
                                        - Request ALS
                                        - Adequate ventilation
                                          - Yes
                                          - Maintain Oxygen therapy
                                          - Request ALS
                                          - Conscious
                                            - Yes
                                            - Maintain Oxygen therapy
                                            - Request ALS
                                            - Adequate ventilation
                                              - Yes
                                              - Maintain Oxygen therapy
                                              - Request ALS
                                              - Conscious
                                                - Yes
                                                - Maintain Oxygen therapy
                                                - Request ALS
                                                - Adequate ventilation
                                                  - Yes
                                                  - Maintain Oxygen therapy
                                                  - Request ALS
                                                  - Conscious
                                                    - Yes
                                                    - Maintain Oxygen therapy
                                                    - Request ALS
                                                    - Adequate ventilation
                                                      - Yes
                                                      - Maintain Oxygen therapy
                                                      - Request ALS
                                                      - Conscious
                                                        - Yes
                                                        - Maintain Oxygen therapy
                                                        - Request ALS
                                                        - Adequate ventilation
                                                          - Yes
                                                          - Maintain Oxygen therapy
                                                          - Request ALS
                                                          - Conscious
                                                            - Yes
                                                            - Maintain Oxygen therapy
                                                            - Request ALS
                                                            - Adequate ventilation
                                                              - Yes
                                                              - Maintain Oxygen therapy
                                                              - Request ALS
                                                              - Conscious
                                                                - Yes
                                                                - Maintain Oxygen therapy
                                                                - Request ALS
                                                                - Adequate ventilation
                                                                  - Yes
                                                                  - Maintain Oxygen therapy
                                                                  - Request ALS
                                                                  - Conscious
                                                                    - Yes
                                                                    - Maintain Oxygen therapy
                                                                    - Request ALS
                                                                    - Adequate ventilation
                                                                      - Yes
                                                                      - Maintain Oxygen therapy
                                                                      - Request ALS
                                                                      - Conscious
                                                                        - Yes
                                                                        - Maintain Oxygen therapy
                                                                        - Request ALS
                                                                        - Adequate ventilation
                                                                          - Yes
                                                                          - Maintain Oxygen therapy
                                                                          - Request ALS
                                                                          - Conscious
                                                                            - Yes
                                                                            - Maintain Oxygen therapy
                                                                            - RequestALS
                                                                            - Adequate ventilation
                                                                              - Yes
                                                                              - Maintain Oxygen therapy
                                                                              - Request ALS
                                                                              - Conscious
                                                                                - Yes
                                                                                - Maintain Oxygen therapy
                                                                                - Request ALS
                                                                                - Adequate ventilation
                                                                                  - Yes
                                                                                  - Maintain Oxygen therapy
                                                                                  - Request ALS
                                                                                  - Conscious
                                                                                      - No
                                                                                      - Monitor vital signs
                                                                                      - Check blood glucose
                                                                                      - Maintain care until handover to appropriate Practitioner

**Equipment list**
- Cold packs

**Reference:** ILCOR Guidelines 2010
Consider EMT Epinephrine (1:1,000) 

6 mts to < 10 yrs 0.15 mg (auto injector) 

≥ 10 yrs 0.3 mg (auto injector) 

Epinephrine administered pre arrival? (within 5 minutes) 

No 

Deteriorates Yes 

No 

Monitor reaction 

ECG & SpO₂ monitor 

Consider Paramedic 

Allergic Reaction/Anaphylaxis - Paediatric (≤ 15 years)

Salbutamol NEB may be substituted with Salbutamol aerosol 0.1 mg. 
If no improvement Salbutamol may be repeated; for < 5 year olds up to 3 times, for ≥ 5 year olds up to 5 times, prn

Mild Urticaria and or angio oedema

Moderate Mild symptoms + simple bronchospasm

Severe Moderate symptoms + haemodynamic and or respiratory compromise
Clinical Practice Guidelines

SECTION 7
PAEDIATRIC EMERGENCIES

Glycaemic Emergency – Paediatric (≤ 15 years)

Abnormal blood glucose level

< 4 mmol/L

Yes

No

Glucose gel
≤ 8 years 5-10 g Buccal
> 8 years 10-20 g Buccal
or
Sweetened drink

Blood Glucose

> 10 mmol/L

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

Consider

A or V on AVPU

Reassess

Patient alert

Request ALS

EMT

Blood Glucose

4.7.32
Version 3, 12/13
Section 7: Paediatric Emergencies

Seizure/Convulsion – Paediatric (≤ 15 years)

- Check blood glucose
- Recovery position
- Protect from harm
- Oxygen therapy

**Seizure status**

- Seizing currently
  - Seizure status
    - Seizing currently
      - Request ALS
        - Support head
          - Check blood glucose
            - Blood glucose ≤ 4 mmol/L
              - Reassess
            - Still seizing
              - Transport to ED if requested by Ambulance Control
        - Go to Glycaemic Emergency CPG
    - Go to Glycaemic Emergency CPG
  - Seizing currently
    - Request ALS
      - Support head
        - Check blood glucose
          - Blood glucose ≤ 4 mmol/L
            - Reassess
          - Still seizing
            - Transport to ED if requested by Ambulance Control
      - Go to Glycaemic Emergency CPG

**Post seizure**

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

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

- Post seizure
  - Consider ALS
    - Alert
      - Yes
        - Recovery position
        - Airway management
      - No
        - Pyrexia
          - Yes
            - Go to Pyrexia CPG
          - No
            - Reassess
              - Check blood glucose
                - Blood glucose ≤ 4 mmol/L
                  - Go to Glycaemic Emergency CPG
                - No
                  - Go to Glycaemic Emergency CPG

- Post seizure
  - Consider ALS
    - Alert
      - Yes
        - Recovery position
        - Airway management
      - No
        - Pyrexia
          - Yes
            - Go to Pyrexia CPG
          - No
            - Reassess
              - Check blood glucose
                - Blood glucose ≤ 4 mmol/L
                  - Go to Glycaemic Emergency CPG
                - No
                  - Go to Glycaemic Emergency CPG

- Post seizure
  - Consider ALS
    - Alert
      - Yes
        - Recovery position
        - Airway management
      - No
        - Pyrexia
          - Yes
            - Go to Pyrexia CPG
          - No
            - Reassess
              - Check blood glucose
                - Blood glucose ≤ 4 mmol/L
                  - Go to Glycaemic Emergency CPG
                - No
                  - Go to Glycaemic Emergency CPG
Pyrexia – Paediatric (≤ 15 years)

Child with elevated temperature

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

Alert

Give cool fluids to drink

No

Recovery position (maintain airway)

Check blood glucose

Cool patient

≤ 38°C temperature with signs of distress or pain

Paracetamol, 20 mg/Kg PO

Or

Paracetamol

≥ 1 mth < 1 year: 90 mg PR
1 to 3 years: 180 mg PR
4 to 8 years: 360 mg PR

Consider ALS

Go to Septic Shock CPG

No

Query severe Sepsis

SpO2 & ECG monitor

Reference: ILCOR Guidelines 2010
RFDS, 2011, Primary Clinical Care Manual
Sickle Cell Crisis – Paediatric (≤ 15 years)

Sickle Cell crisis

Oxygen therapy

Pain management required
Yes

Elevated temperature
Yes

Dehydration & unable to take oral fluids
Yes

Request ALS

NaCl (0.9%) 10 mL/Kg IV

SpO₂ & ECG monitor

Go to Pyrexia CPG

Encourage oral fluids

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


Consider patient’s care plan

No
External Haemorrhage – Paediatric (≤ 15 years)

Open wound

Active bleeding

Yes

Catastrophic haemorrhage

Yes

Posture Elevation Examination Pressure

Consider applying a dressing impregnated with haemostatic agent

Apply sterile dressing

Consider Oxygen therapy

Haemorrhage controlled

Yes

Apply additional dressing(s)

Haemorrhage controlled

Yes

Depress proximal pressure point

No

Haemorrhage controlled

No

Apply tourniquet

Significant blood loss

Yes

Go to Shock CPG

No

Reference:
ILCOR Guidelines 2010,

Equipment list
Sterile dressing (various sizes)
Crepe bandage (various sizes)
Conforming bandage (various sizes)
Triangular bandage
Trauma tourniquet
Dressing impregnated with haemostatic agent

Special Authorisation:
EMTs having completed the BTEC course may be privileged by a licensed CPG provider to apply a tourniquet on its behalf

Request ALS

4/5/6.7.50
Version 3, 02/14

Posture

Elevation

Examination

Pressure
Control external haemorrhage

Signs of poor perfusion

Oxygen therapy

Lie patient flat with legs elevated (if safe to do so)

Request ALS

SpO2 & ECG monitor

Signs of inadequate perfusion

A: (not directly affected)
B: Increased respiratory rate (without increased effort)
C: Tachycardia
   - Diminished/absent peripheral pulses
   - Delayed capillary refill
D: Irritability/confusion/ALoC
E: Cool extremities, mottling
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

Pre-Hospital Emergency Care Council

References:
Slack, S. & Clancy, M, 2004, Clearing the cervical spine of paediatric trauma patients, EMJ 21; 189-193
Clinical Practice Guidelines

SECTION 7

PAEDIATRIC EMERGENCIES

Burns – Paediatric (≤ 15 years)

1. Cease contact with heat source

2. Inhalation and/or facial injury
   - Yes: Airway management
   - No: Commence local cooling of burn area

3. Isolated superficial injury (excluding F/HFP)
   - Yes: Consider humidiﬁed Oxygen therapy
   - No: Go to Pain Mgt. CPG

4. TBSA burn > 5%
   - Yes: Go to Inadequate Ventilations CPG
   - No: ECG & SpO2 monitoring

5. > 10% TBSA and/or time from injury to ED > 1 hour
   - Yes: NaCl (0.9%), IV/IO
     - 5 to 10 years = 250 mL
     - > 10 years = 500 mL
   - No: Monitor body temperature

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

Major Emergency (Major Incident) – First Practitioners on site

Possible Major Emergency

Take standard infection control precautions

Consider pre-arrival information

PPE (high visibility jacket and helmet) must be worn

Practitioner 1

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

Practitioner 2 (Ideally MIMMS trained)

Carry out scene survey
Give situation report to Ambulance Control using METHANE message
Carry out HSE Controller of Operations (Ambulance Incident Officer) role until relieved
Liaise with Garda Controller of Operations (Police Incident Officer) and Local Authority Controller of Operations (Fire Incident Officer)
Select location for Holding Area (Ambulance Parking Point)
Set up key areas in conjunction with other Principal Response Agencies on site:
- Site Control Point (Ambulance Control Point),
- Casualty Clearing Station
- Ambulance loading point
- On site co-ordination centre

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

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

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 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)

Please note that Controller of Operations may be other than ambulance or fire officers, depending on the nature of the emergency.

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 3 (Delayed)
  - No: Is casualty breathing?

  - Yes: Open airway one attempt
    - Breathing now?
      - Yes: DEAD
      - No: Respiratory rate < 10 or > 29

  - No: Capillary refill > 2 sec or Pulse > 120

Priority 1 (Immediate)
- RED

Priority 2 (Urgent)
- YELLOW

Priority 3 (Delayed)
- GREEN

DEAD
APPENDIX 1
MEDICATION FORMULARY

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 the Medicinal Products 7th Schedule (SI 300 of 2014). 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 Committee (MAC) 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 a PHECC licensed CPG provider.
4. The practitioner is privileged, 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 7th Schedule.

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

Every effort has been made to ensure accuracy of the medication doses herein. The dose specified on the relevant CPG shall be the definitive dose in relation to 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.

Water for injection shall be used when diluting medications, however if not available NaCl (0.9%) may be used if not contraindicated.

All medication doses for patients’ ≤ 15 years shall be calculated on a weight basis unless an age-related dose is specified for that medication.

The route of administration should be appropriate to the patients clinical presentation.

The dose for paediatric patients may never exceed the adult dose.

Paediatric weight estimations acceptable to PHECC are:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonate</td>
<td>3.5 Kg</td>
</tr>
<tr>
<td>Six months</td>
<td>6 Kg</td>
</tr>
<tr>
<td>One to five years</td>
<td>(age x 2) + 8 Kg</td>
</tr>
<tr>
<td>Greater than 5 years</td>
<td>(age x 3) + 7 Kg</td>
</tr>
</tbody>
</table>

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

This version contains 11 medications.
Amendments to the 2012 Edition

The paediatric age range has been increased to reflect the HSE National Clinical Programme for Paediatrics and Neonatology age profile:

A paediatric patient is defined as a patient up to the eve of his/her 16th birthday (≤ 15 years).

Water for injection shall be used when diluting medications, however if not available NaCl (0.9%) may be used if not contraindicated.

The paediatric weight estimation formulae have been modified.

New Medications introduced;
- Ibuprofen
- Naloxone

**Epinephrine (1:1,000)**

<table>
<thead>
<tr>
<th>HEADING</th>
<th>ADD</th>
<th>DELETE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usual Dosages</td>
<td>Auto-injector</td>
<td>EpiPen® Jr</td>
</tr>
</tbody>
</table>

**Ibuprofen**

<table>
<thead>
<tr>
<th>HEADING</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Clinical Level</td>
<td>EMT</td>
<td></td>
</tr>
<tr>
<td>Presentation</td>
<td>400 mg tablet</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>It is an anti-inflammatory analgesic</td>
<td>It is used to reduce mild to moderate pain</td>
</tr>
<tr>
<td>Additional information</td>
<td>Caution with significant burns or poor perfusion due to risk of kidney failure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caution if concurrent NSAIDs use</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 1
MEDICATION FORMULARY

### Naloxone

<table>
<thead>
<tr>
<th>HEADING</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Clinical level</td>
<td></td>
<td>EMT</td>
</tr>
<tr>
<td>Administration</td>
<td>Intranasal (IN), CPG: 6.4.23, 4/5.4.23, 4/5/6.7.5</td>
<td>CPG: 5/6.3.2, 5/6.7.5</td>
</tr>
<tr>
<td>Indications</td>
<td>Inadequate respiration and/or ALoC following known or suspected narcotic overdose</td>
<td>Respiratory rate &lt; 10 secondary to known or suspected narcotic overdose</td>
</tr>
</tbody>
</table>
| Usual Dosages | **Adult:** 0.8 mg (800 mcg) IN (EMT)  
**Paediatric:** 0.02 mg/Kg (20 mcg/Kg) IN (EMT) | (Paramedic repeats by one prn) |

### Nitrous Oxide 50% and Oxygen 50% (Entonox®)

<table>
<thead>
<tr>
<th>HEADING</th>
<th>ADD</th>
<th>DELETE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional information</td>
<td>Caution when using Entonox for greater than one hour for Sickle Cell Crisis</td>
<td></td>
</tr>
</tbody>
</table>

### Oxygen

<table>
<thead>
<tr>
<th>HEADING</th>
<th>ADD</th>
<th>DELETE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contraindications</td>
<td></td>
<td>Paraquat poisoning</td>
</tr>
<tr>
<td>Indications</td>
<td>Sickle Cell Disease ~ 100%</td>
<td></td>
</tr>
<tr>
<td>Additional Information</td>
<td>Caution with paraquat poisoning, administer oxygen if SpO₂ &lt; 92%</td>
<td></td>
</tr>
</tbody>
</table>
## Paracetamol

<table>
<thead>
<tr>
<th>HEADING</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>250 mg in 5 mL</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.</td>
</tr>
<tr>
<td>Indications</td>
<td>Pyrexia</td>
<td></td>
</tr>
<tr>
<td>Contraindications</td>
<td>&lt; 1 month old</td>
<td></td>
</tr>
<tr>
<td>Usual Dosages</td>
<td>&gt; 1 month &lt; 1 year - 90 mg PR.</td>
<td>&lt; 1 year - 60 mg PR</td>
</tr>
</tbody>
</table>

## Salbutamol

<table>
<thead>
<tr>
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<th>ADD</th>
<th>DELETE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td></td>
<td>Advanced Paramedics may repeat Salbutamol x 3</td>
</tr>
<tr>
<td>Usual Dosages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult:</td>
<td>(or 0.1 mg metered aerosol spray x 5)</td>
<td>Adult: Repeat at 5 min prn (APs x 3 and Ps x 1) (EMTs &amp; EFRs: 0.1 mg metered aerosol spray x 2)</td>
</tr>
<tr>
<td></td>
<td>Repeat at 5 min prn</td>
<td>Paediatric: Repeat at 5 min prn (APs x 3 and Ps x 1) (EMTs &amp; EFRs: 0.1 mg metered aerosol spray x 2)</td>
</tr>
<tr>
<td>Paediatric:</td>
<td>(or 0.1 mg metered aerosol spray x 3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repeat at 5 min prn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EFRs: 0.1 mg metered aerosol spray x 2)</td>
<td></td>
</tr>
</tbody>
</table>

Please visit [www.phecc.ie](http://www.phecc.ie) for the latest edition/version.
**LIST OF MEDICATIONS**

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<th>Page</th>
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</thead>
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## APPENDIX 1
### MEDICATION FORMULARY

**CLINICAL LEVEL:**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Aspirin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Platelet aggregation inhibitor</td>
</tr>
<tr>
<td><strong>Descriptions</strong></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><strong>Presentation</strong></td>
<td>300 mg dispersible tablet</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Orally (PO) - dispersed in water, or to be chewed - if not dispersible form (CPG: 5/6.4.10, 4.4.10, 1/2/3.4.10)</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Cardiac chest pain or suspected Myocardial Infarction</td>
</tr>
<tr>
<td><strong>Contraindications</strong></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><strong>Usual Dosages</strong></td>
<td>Adult: 300 mg tablet</td>
</tr>
<tr>
<td></td>
<td>Paediatric: Contraindicated</td>
</tr>
<tr>
<td><strong>Pharmacology/Action</strong></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><strong>Side effects</strong></td>
<td>Epigastric pain and discomfort, Bronchospasm, Gastrointestinal haemorrhage</td>
</tr>
<tr>
<td><strong>Long-term effects</strong></td>
<td>Generally mild and infrequent but incidence of gastro-intestinal irritation with slight asymptomatic blood loss, increased bleeding time, bronchospasm and skin reaction in hypersensitive patients.</td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
<td>Aspirin 300 mg is indicated for cardiac chest pain regardless if patient is on anticoagulants or is already on aspirin. 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>
## Epinephrine (1:1,000)

### Class
Sympathetic agonist

### Description
Naturally occurring catecholamine. It is a potent alpha and beta adrenergic stimulant; however, its effect on beta receptors is more profound.

### Presentation
Pre-filled syringe, ampoule or Auto injector (for EMT use)
1 mg/1 mL (1:1,000)

### Administration
Intramuscular (IM)
(CPG: 5/6.4.15, 4.4.15, 2/3.4.16, 5/6.7.31, 4.7.31, 2/3.7.31)

### Indications
Severe anaphylaxis

### Contraindications
None known

### Usual Dosages

<table>
<thead>
<tr>
<th>Usual Dosages</th>
<th>Adult:</th>
<th>EMT:</th>
<th>Pediatric:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.5 mg (500 mcg) IM (0.5 mL of 1:1,000)</td>
<td>0.3 mg (Auto injector)</td>
<td>0.05 mg (50 mcg) IM (0.05 mL of 1:1,000)</td>
</tr>
<tr>
<td></td>
<td>Repeat every 5 minutes if indicated</td>
<td></td>
<td>0.125 mg (125 mcg) IM (0.13 mL of 1:1,000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.25 mg (250 mcg) IM (0.25 mL of 1:1,000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 8 years: 0.5 mg (500 mcg) IM (0.5 mL of 1:1,000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EMT: 6 months &lt; 10 years: 0.15 mg (Auto injector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>≥ 10 years: 0.3 mg (Auto injector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Repeat every 5 minutes if indicated</td>
</tr>
</tbody>
</table>

### Pharmacology/Action
Alpha and beta adrenergic stimulant
Reversal of laryngeal oedema & bronchospasm in anaphylaxis
Antagonises the effects of histamine

### Side effects
- Palpitations
- Tachyarrhythmias
- Hypertension
- Angina-like symptoms

### Additional information
N.B. Double check the concentration on pack before use
**APPENDIX 1**
**MEDICATION FORMULARY**

**CLINICAL LEVEL:**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Glucagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Hormone and Antihypoglycaemic</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Glucagon is a protein secreted by the alpha cells of the Islets of Langerhans in the pancreas. It is used to increase the blood glucose level in cases of hypoglycaemia in which an IV cannot be immediately placed.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>1 mg vial powder and solution for reconstitution (1 mL)</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Intramuscular (IM) (CPG: 5/6.4.19, 4.4.19, 5/6.7.32, 4.7.32)</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Hypoglycaemia in patients unable to take oral glucose or unable to gain IV access, with a blood glucose level &lt; 4 mmol/L</td>
</tr>
<tr>
<td><strong>Contraindications</strong></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 & 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.  
Store in refrigerator  
Protect from light |
## APPENDIX 1
### MEDICATION FORMULARY

- **CLINICAL LEVEL:**
  - EFR
  - EMT
  - P
  - AP

### Medication: Glucose gel

<table>
<thead>
<tr>
<th>Class</th>
<th>Antihypoglycaemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Synthetic glucose paste</td>
</tr>
<tr>
<td>Presentation</td>
<td>Glucose gel in a tube or sachet</td>
</tr>
</tbody>
</table>

#### Administration

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, 4.4.19, 2/3.4.19, 5/6.7.32, 4.7.32)

#### Indications

- Hypoglycaemia
- Blood glucose < 4 mmol/L
- EFR – Known diabetic with confusion or altered levels of consciousness

#### Contraindications

- Known severe adverse reaction

#### Usual Dosages

- **Adult:**  10 – 20 g buccal
  Repeat prn
- **Paediatric:** ≤ 8 years;  5 – 10 g buccal
  >8 years: 10 – 20 g buccal
  Repeat prn

#### Pharmacology/Action

Increases blood glucose levels

#### Side effects

- May cause vomiting in patients under the age of five if administered too quickly

#### Additional information

- Glucose gel will maintain glucose levels once raised but should be used secondary to Dextrose to reverse hypoglycaemia.

  **Proceed with caution:**
  - Patients with airway compromise
  - Altered level of consciousness
### Glyceryl Trinitrate (GTN)

<table>
<thead>
<tr>
<th>Class</th>
<th>Nitrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Special preparation of Glyceryl trinitrate in an aerosol form that delivers precisely 0.4 mg of Glyceryl trinitrate per spray.</td>
</tr>
<tr>
<td>Presentation</td>
<td>Aerosol spray: metered dose 0.4 mg (400 mcg)</td>
</tr>
</tbody>
</table>
| 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: 5/6.3.5, 4.4.10, 5/6.4.10) |
| Indications | Angina
  - Suspected Myocardial Infarction (MI)
  - EFRs 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 hours.
  - 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
  - EFRs 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’s workload.
  - Reduces BP |
| Side effects | Headache
  - Transient Hypotension
  - Flushing
  - Dizziness |
| Additional information | If the pump is new or has not been used for a week or more, the first spray should be released into the air. |
# APPENDIX 1

## MEDICATION FORMULARY

### CLINICAL LEVEL: EMT, P, AP

<table>
<thead>
<tr>
<th>Medication</th>
<th>Ibuprofen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>It is an anti-inflammatory analgesic</td>
</tr>
</tbody>
</table>
| **Presentation** | Suspension 100 mg in 5 mL  
200 mg tablet, 400 mg tablet |
| **Administration** | Orally (PO)  
(CPG: 4/5/6.2.6, 4/5/6.7.5) |
| **Indications** | Mild to moderate pain |
| **Contraindications** | Not suitable for children under 3 months  
Patient with history of asthma exacerbated by aspirin  
Pregnancy  
Peptic ulcer disease  
Known severe adverse reaction |
| **Usual Dosages** | **Adult:** 400 mg PO  
**Paediatric:** 10 mg/Kg PO |
| **Pharmacology/Action** | Suppresses prostaglandins, which cause pain via the inhibition of cyclooxygenase (COX). Prostaglandins are released by cell damage and inflammation. |
| **Side effects** | Skin rashes, gastrointestinal intolerance and bleeding |
| **Long-term side effects** | Occasionally gastrointestinal bleeding and ulceration occurs  
May also cause acute renal failure, interstitial nephritis and NSAID-associated nephropathy |
| **Additional information** | If ibuprofen administered in previous 6 hours, adjust the dose downward by the amount given by other sources resulting in a maximum of 10 mg/Kg.  
Caution with significant burns or poor perfusion due to risk of kidney failure.  
Caution if concurrent NSAIDs use. |
### Naloxone

<table>
<thead>
<tr>
<th>Class</th>
<th>Narcotic antagonist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Effective in management and reversal of overdoses caused by narcotics or synthetic narcotic agents.</td>
</tr>
<tr>
<td>Presentation</td>
<td>Ampoules 0.4 mg in 1 mL (400 mcg /1 mL) or pre-loaded syringe</td>
</tr>
<tr>
<td>Administration</td>
<td>Intravenous (IV) Intramuscular (IM) Subcutaneous (SC) Intraosseous (IO) Intranasal (IN) (CPG: 6.4.22, 4/5.4.22, 5/6.5.2, 4/5/6.7.11)</td>
</tr>
<tr>
<td>Indications</td>
<td>Inadequate respiration and/or ALoC following known or suspected narcotic overdose</td>
</tr>
<tr>
<td>Contraindications</td>
<td>Known severe adverse reaction</td>
</tr>
<tr>
<td>Usual Dosages</td>
<td><strong>Adult:</strong> 0.4 mg (400 mcg) IV/IO (AP) 0.4 mg (400 mcg) IM or SC (P) 0.8 mg (800 mcg) IN (EMT) Repeat after 3 min if indicated to a Max 2 mg <strong>Paediatric:</strong> 0.01 mg/Kg (10 mcg/Kg) IV/IO (AP) 0.01 mg/Kg (10 mcg/Kg) IM/SC (P) 0.02 mg/Kg (20 mcg/Kg) IN (EMT) Repeat dose prn to maintain opioid reversal to Max 0.1 mg/Kg or 2 mg</td>
</tr>
<tr>
<td>Pharmacology/Action</td>
<td>Narcotic antagonist Reverse the respiratory depression and analgesic effect of narcotics</td>
</tr>
<tr>
<td>Side effects</td>
<td>Acute reversal of narcotic effect ranging from nausea &amp; vomiting to agitation and seizures</td>
</tr>
<tr>
<td>Additional information</td>
<td>Use with caution in pregnancy. Administer with caution to patients who have taken large dose of narcotics or are physically dependent. Rapid reversal will precipitate acute withdrawal syndrome. Prepare to deal with aggressive patients.</td>
</tr>
</tbody>
</table>
## APPENDIX 1
### MEDICATION FORMULARY

**CLINICAL LEVEL:**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Nitrous Oxide 50% and Oxygen 50% (Entonox®)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Analgesic</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Potent analgesic gas contains a mixture of both nitrous oxide and oxygen</td>
</tr>
<tr>
<td><strong>Presentation</strong></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><strong>Administration</strong></td>
<td>Self-administered Inhalation by demand valve with face-mask or mouthpiece (CPG: 4/5/6.2.6, 5/6.5.1, 4.5.1, 5/6.5.6, 4/5/6.7.5)</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Pain relief</td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
<td>Altered level of consciousness Chest Injury/Pneumothorax Shock Recent scuba dive Decompression sickness Intestinal obstruction Inhalation Injury Carbon monoxide (CO) poisoning Known severe adverse reaction</td>
</tr>
<tr>
<td><strong>Usual Dosages</strong></td>
<td><strong>Adult:</strong> Self-administered until pain relieved <strong>Paediatric:</strong> Self-administered until pain relieved</td>
</tr>
<tr>
<td><strong>Pharmacology/Action</strong></td>
<td>Analgesic agent gas: - CNS depressant - Pain relief</td>
</tr>
<tr>
<td><strong>Side effects</strong></td>
<td>Disinhibition Decreased level of consciousness Light-headedness</td>
</tr>
<tr>
<td><strong>Additional information</strong></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. Caution when using Entonox for greater than one hour for Sickle Cell Crisis.</td>
</tr>
</tbody>
</table>
# APPENDIX 1
## MEDICATION FORMULARY

### CLINICAL LEVEL:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Oxygen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Gas</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Odourless, tasteless, colourless gas necessary for life</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>D, E or F cylinders, coloured black with white shoulders&lt;br&gt;CD cylinder; white cylinder&lt;br&gt;Medical gas</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Inhalation via:&lt;br&gt;High concentration reservoir (non-rebreather) mask&lt;br&gt;Simple face mask&lt;br&gt;Venturi mask&lt;br&gt;Tracheostomy mask&lt;br&gt;Nasal cannulae&lt;br&gt;Bag Valve Mask&lt;br&gt;(CPG: Oxygen is used extensively throughout the CPGs)</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Absent/inadequate ventilation following an acute medical or traumatic event&lt;br&gt;SpO₂ &lt; 94% adults and &lt; 96% paediatrics&lt;br&gt;SpO₂ &lt; 92% for patients with acute exacerbation of COPD</td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
<td>Bleomycin lung injury</td>
</tr>
<tr>
<td><strong>Usual Dosages</strong></td>
<td><strong>Adult:</strong> Cardiac and respiratory arrest or Sickle Cell Crisis; 100%&lt;br&gt;Life threats identified during primary survey; 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 94% - 98%&lt;br&gt;For patients with acute exacerbation of COPD, administer O₂ titrate to achieve SpO₂ 92% or as specified on COPD Oxygen Alert Card&lt;br&gt;All other acute medical and trauma titrate O₂ to achieve SpO₂ 94% -98%&lt;br&gt;&lt;br&gt;<strong>Paediatric:</strong> Cardiac and respiratory arrest or Sickle Cell Crisis; 100%&lt;br&gt;Life threats identified during primary survey; 100% until a reliable SpO₂ measurement obtained then titrate O₂ to achieve SpO₂ of 96% - 98%&lt;br&gt;All other acute medical and trauma titrate O₂ to achieve SpO₂ of 96% - 98%</td>
</tr>
<tr>
<td><strong>Pharmacology/Action</strong></td>
<td>Oxygenation of tissue/organs</td>
</tr>
<tr>
<td><strong>Side effects</strong></td>
<td>Prolonged use of O₂ with chronic COPD patients may lead to reduction in ventilation stimulus.</td>
</tr>
<tr>
<td><strong>Additional information</strong></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. Caution with paraquat poisoning, administer oxygen if SpO₂ &lt; 92% Avoid naked flames, powerful oxidising agent.</td>
</tr>
</tbody>
</table>
Clinical Practice Guidelines
EMERGENCY MEDICAL TECHNICIAN

APPENDIX 1
MEDICATION FORMULARY

CLINICAL LEVEL: EMT P AP

<table>
<thead>
<tr>
<th>Medication</th>
<th>Paracetamol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Analgesic and antipyretic</td>
</tr>
<tr>
<td>Description</td>
<td>Paracetamol is used to reduce pain and body temperature</td>
</tr>
</tbody>
</table>
| Presentation| Rectal suppository 180 mg and 60 mg  
Suspension 120 mg in 5 mL or 250 mg in 5 mL  
500 mg tablet |
| Administration| Per Rectum (PR)  
Orally (PO)  
(CPG: 4/5/6.2.6, 4/5/6.4.24, 4/5/6.7.5, 4/5/6.7.35) |
| Indications| Pyrexia  
Minor or moderate pain (1 - 6 on pain scale) for adult and paediatric patients |
| Contraindications| Known severe adverse reaction  
Chronic liver disease  
< 1 month old |
| Usual Dosages| Adult: 1 g PO  
Paediatric: PR (AP)  
> 1 mth < 1 year - 90 mg PR  
1-3 years - 180 mg PR  
4-8 years - 360 mg PR  
PO (AP, P & EMT) 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 side effects| 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. |
## Medication Formulary

### Clinical Level: EFR EMT P AP

<table>
<thead>
<tr>
<th>Medication</th>
<th>Salbutamol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Sympathetic agonist</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Sympathomimetic that is selective for beta-2 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  
(CPG: 4/5/6.3.3, 4/5/6.3.4, 3.3.4, 5/6.4.15, 4.4.15, 2/3.4.16, 4/5/6.6.10, 4/5/6.7.12, 3.7.12, 5/6.7.31, 4.7.31, 2/3.7.31) |
| **Indications** | Bronchospasm  
Exacerbation of COPD  
Respiratory distress following submersion incident |
| **Contraindications** | Known severe adverse reaction |
| **Usual Dosages** | **Adult:**  
5 mg NEB (or 0.1 mg metered aerosol spray x 5)  
Repeat at 5 min prn  
EFRs: 0.1 mg metered aerosol spray x 2  
**Paediatric:**  
< 5 yrs - 2.5 mg NEB (or 0.1 mg metered aerosol spray x 3)  
> 5 yrs - 5 mg NEB (or 0.1 mg metered aerosol spray x 5)  
Repeat at 5 min prn  
EFRs: 0.1 mg metered aerosol spray x 2 |
| **Pharmacology/Action** | Beta-2 agonist  
Bronchodilation  
Relaxation of smooth muscle |
| **Side effects** | Tachycardia.  
Tremors  
Tachyarrhythmias  
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 nebuliser is used to administer Salbutamol for a patient with acute exacerbation of COPD it should be limited to 6 minutes maximum. |
# APPENDIX 2
## MEDICATIONS & SKILLS MATRIX

### NEW FOR 2014

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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. Practitioners must be privileged by a licensed CPG provider to administer specific medications and perform specific clinical interventions.

### 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
- BTEC = Authorised subject to Basic Tactical Emergency Care rules
## APPENDIX 2
### MEDICATIONS & SKILLS MATRIX

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<th>CFR-C</th>
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## APPENDIX 2
### MEDICATIONS & SKILLS MATRIX

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### AIRWAY & BREATHING MANAGEMENT

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## TRAUMA

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### APPENDIX 2

#### MEDICATIONS & SKILLS MATRIX

**TRAUMA (contd)**

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**PATIENT ASSESSMENT**

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## APPENDIX 2
MEDICATIONS & SKILLS MATRIX

### PATIENT ASSESSMENT (contd)

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<td>Assess pupils</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Capacity evaluation</td>
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<tr>
<td>Do Not Attempt Resuscitation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Paediatric Assessment Triangle</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Pain assessment</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Patient Clinical Status</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Pre-hospital Early Warning Score</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Pulse check (cardiac arrest)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>Temperature °C</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>Triage sieve</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Chest auscultation</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>GCS</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Treat and referral</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Triage sort</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
</tbody>
</table>
APPENDIX 3
CRITICAL INCIDENT STRESS MANAGEMENT

Your Psychological Well-Being

As a Practitioner 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. However sometimes you may encounter a situation which is highly stressful for you, giving rise to Critical Incident Stress (CIS). A critical incident is an incident or event which may overwhelm or threaten to overwhelm our normal coping responses. As a result of this we can experience CIS.

### SYMPTOMS OF CIS INCLUDE SOME OR ALL OF THE FOLLOWING:

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

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

### Post-Traumatic Stress Reactions

Normally the symptoms of Critical Incident Stress 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 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 CISM support network or system.
We recommend that you contact them for help and advice. (i.e. your peer support worker/coordinate/staff support officer).

- For a self-help guide, please go to www.cismnetworkireland.ie
- The NAS CISM/CISM Network published a booklet called 'Critical Incident Stress Management for Emergency Personnel'. It can be purchased by emailing info@cismnetworkireland.ie
- The NAS CISM committee in partnership with PHECC developed an eLearning CISM Stress Awareness Training (SAT) module. It can be accessed by all PHECC registered practitioners using their PHECC eLearning username and password.
  In due course PHECC will launch a CISM SAT module for non-PHECC registered personnel.
- See a health professional who specialises in traumatic stress.
APPENDIX 4

CPG UPDATES FOR EMERGENCY MEDICAL TECHNICIANS

CPG updates 2014

For administrative purposes the numbering system on some CPGs has been changed.

The paediatric age range has been extended to reflect the new national paediatric age (≤ 15 years), as outlined by National Clinical Programme for Paediatrics and Neonatology.

CPGs that have content changes are outlined below.

Updated CPGs from the 2012 version.

<table>
<thead>
<tr>
<th>CPGs</th>
<th>The principal differences are</th>
<th>Theory</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPG 4/5/6.2.1 Primary Survey Medical – Adult</td>
<td>EMTs, who have completed the BTEC course, may be privileged by a licenced CPG provider to insert an NPA following appropriate training</td>
<td>✓</td>
<td>BTEC only</td>
</tr>
<tr>
<td>CPG 4/5/6.2.2 Primary Survey Trauma – Adult</td>
<td>EMTs, who have completed the BTEC course, may be privileged by a licenced CPG provider to insert an NPA following appropriate training</td>
<td>✓</td>
<td>BTEC only</td>
</tr>
<tr>
<td>CPG 4/5/6.2.6 Pain Management – Adult</td>
<td>Delete ‘Minor pain (2 to 3 on pain scale)’ replace with ‘Mild pain (1 to 3 on pain scale)’</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Change Moderate pain to ‘4 to 6 on the pain scale’</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Change Severe pain to ‘≥ 7 on the pain scale’</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Add Fentanyl IN for advanced paramedic practice</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Add Ibuprofen PO for EMT practice</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CPG 4.3.1 Advanced Airway Management – Adult</td>
<td>Special authorisation may be given to EMTs to insert a cuffed supraglottic airway subject to maintaining competence and Medical Director authorisation</td>
<td>✓</td>
<td>✓ if authorised</td>
</tr>
<tr>
<td>CPG 4/5/6.3.2 Inadequate Ventilations – Adult</td>
<td>This CPG replaces Inadequate Respirations – Adult (5/6.3.2 and 4.3.2) incorporating all three practitioner levels in one CPG</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>This CPG outlines generic care for all patients with inadequate ventilation and then offers pathways for specific clinical issues</td>
<td>✓</td>
<td>x</td>
</tr>
</tbody>
</table>
## CPG UPDATES FOR EMERGENCY MEDICAL TECHNICIANS

<table>
<thead>
<tr>
<th>CPGs</th>
<th>The principal differences are</th>
<th>Theory</th>
<th>Skills</th>
</tr>
</thead>
</table>
| CPG 4/5/6.3.3 Exacerbation of COPD | This CPG incorporating all three practitioner levels in one CPG replacing 4.3.3 at EMT level  
Peak expiratory flow measurement is now within the scope of practice for paramedics  
Salbutamol Neb is now within the scope of practice for EMTs  
Ipratropium bromide Neb is now within the scope of practice for paramedics | ✓ | x |
| CPG 4/5/6.4.11 Symptomatic Bradycardia – Adult | The dose of Atropine has been increased from 0.5 mg to 0.6 mg  
Add 'NaCl infusion 250 mL (repeat by one)'  
Insert information box; 'Titrate Atropine to effect (HR > 60)' | ✓ | x |
| CPG 4.4.15 Allergic Reaction/Anaphylaxis – Adult | Salbutamol NEB is now within the scope of practice for EMTs  
The conditions for use of Epinephrine auto injector has been changed; it is now indicated for all patients with severe anaphylaxis regardless of whether it has been previously prescribed or not. | ✓ | x |
| CPG 4/5/6.4.17 Epistaxis | Digital pressure has been increased to 15 minutes  
The insertion of a proprietary nasal pack is now within the scope of practice for paramedics and advanced paramedics | ✓ | x |
| CPG 4.4.21 Hypothermia | Paramedic has been removed from this CPG  
Warmed O2 has been removed | ✓ | x |
| CPG 4/5.4.22 Poisons – Adult | The methods of introduction of a poison have been removed  
Naloxone has been added to this CPG for opiate induced poison  
Naloxone IN is now within the scope of practice for EMTs and paramedics  
The absolute contraindication for O2 has been removed following paraquat poisoning | ✓ | x |
| CPG 4/5/6.4.24 Sepsis – Adult | This CPG replaces Septic Shock – Adult  
It authorises the administration of Paracetamol for pyrexic patients  
It authorises the administration, by advanced paramedics, of Benzylpenicillin for severe sepsis.  
Advanced paramedics may consider additional aliquots of NaCl to maintain systolic BP > 100 mmHg | ✓ | x |
# CPG Updates for Emergency Medical Technicians

<table>
<thead>
<tr>
<th>CPGs</th>
<th>The principal differences are</th>
<th>Theory</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPG 4/5/6.6.1 Burns – Adult</td>
<td>Add 'Caution with hypothermia'</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>CPG 4/5/6.6.3 External Haemorrhage – Adult</td>
<td>This CPG has been updated to reflect the importance of managing catastrophic haemorrhage immediately.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Dressings impregnated with haemostatic agents are now within the scope of practice for EMTs, paramedics and advanced paramedics.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>EMTs, who have completed the BTEC course, may be privileged by a licenced CPG provider to apply a tourniquet.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CPG 4.6.5 Head Injury – Adult</td>
<td>Add V as a rationale for requesting ALS</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Add 'consider mechanism of injury; is spinal immobilisation indicated?'</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Replace 'apply cervical collar' and 'secure to long board' with 'immobilise spine appropriately'</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>CPG 4/5/6.6.7 Limb Injury – Adult</td>
<td>Fractured neck of femur has been included</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>With a fractured neck of femur, if the transport time to ED is &gt; 20 minutes, ALS should be requested.</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>With a fractured neck of femur advanced paramedics should consider NaCl infusion</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>CPG 4.6.8 Shock from Blood Loss – Adult</td>
<td>The signs of poor perfusion have been presented in an ABCDE format</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>CPG 4/5/6.10 Submersion Incident</td>
<td>Salbutamol is now within the scope of practice for EMTs</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CPG 4/5/6.7.4 Secondary Survey – Paediatric</td>
<td>The estimated weight formula has been updated; Neonate = 3.5 Kg Six months = 6 Kg One to five years = (age x 2) + 8 Kg Greater than 5 years = (age x 3) + 7 Kg</td>
<td>✓</td>
<td>x</td>
</tr>
</tbody>
</table>
## APPENDIX 4
### CPG UPDATES FOR EMERGENCY MEDICAL TECHNICIANS

<table>
<thead>
<tr>
<th>CPGs</th>
<th>The principal differences are</th>
<th>Theory</th>
<th>Skills</th>
</tr>
</thead>
</table>
| CPG 4/5/6.7.5 Pain Management – Paediatric | Pain assessment recommendations;  
< 5 years use FLACC scale  
5 – 7 years use Wong Baker scale  
≥ 8 years use analogue pain scale  
Delete 'Minor pain (2 to 3 on pain scale)' replace with 'Mild pain (1 to 3 on pain scale)'  
Change Moderate pain to '4 to 6 on the pain scale'  
Change Severe pain to '≥ 7 on the pain scale'  
Fentanyl IN is now within the scope of practice for advanced paramedics  
Ibuprofen PO is now within the scope of practice for EMTs | ✓ | ✓ |
| CPG 4/5/6.7.11 Inadequate Ventilations – Paediatric | This CPG replaces Inadequate Respirations – Paediatric (5/6.7.5 and 4.7.5) incorporating all three practitioner levels in one CPG  
This CPG outlines generic care for all patients with inadequate ventilation and then offers pathways for specific clinical issues  
Naloxone IN is now within the scope of practice for EMTs, paramedics and advanced paramedics. | ✓ | x |
| CPG 4/5/6.7.24 Symptomatic Bradycardia – Paediatric | The routine ventilations has been changed to ventilations if hypoxic.  
Unresponsive has been added as criteria for CPR  
Consider advanced airway management if prolonged CPR has been removed. | ✓ | x |
| CPG 4.7.31 Allergic Reaction/ Anaphylaxis – Paediatric | Salbutamol NEB is now within the scope of practice for EMTs  
The conditions for use of Epinephrine auto injector has been changed; it is now indicated for all patients with severe anaphylaxis regardless of whether it has been previously prescribed or not. | ✓ | x |
| CPG 4.7.32 Glycaemic Emergency – Paediatric | A dose of Glucose gel for > 8 year olds has been added | ✓ | x |
| CPG 4.7.33 Seizure/ Convulsion – Paediatric | Paracetamol has been removed and replaced with a direction to go to the pyrexia CPG | ✓ | x |
## Appendix 4

### CPG Updates for Emergency Medical Technicians

<table>
<thead>
<tr>
<th>CPGs</th>
<th>The principal differences are</th>
<th>Theory</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPG 4/5/6.7.50 External Haemorrhage – Paediatric</td>
<td>This CPG has been updated to reflect the importance of managing catastrophic haemorrhage immediately</td>
<td>✔</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Dressings impregnated with haemostatic agents are now within the scope of practice for EMTs, paramedics and advanced paramedics</td>
<td>✔</td>
<td>BTEC only</td>
</tr>
<tr>
<td></td>
<td>EMTs, who have completed the BTEC course, may be privileged by a licenced CPG provider to apply a tourniquet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPG 4.7.51 Shock from Blood Loss – Paediatric</td>
<td>The entry to this CPG has been changed from ‘shock’ to ‘signs of poor perfusion’</td>
<td>✔</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✔</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>An additional care management step has been introduced; Lie patient flat and elevate the legs (if safe to do so)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPG 4.7.52 Spinal Immobilisation – Paediatric</td>
<td>‘Consider Paramedic’ has been changed to ‘Notify a paramedic, advanced paramedic or doctor’</td>
<td>✔</td>
<td>x</td>
</tr>
<tr>
<td>CPG 4/5/6.7.53 Burns – Paediatric</td>
<td>Add ‘Caution with hypothermia’</td>
<td>✔</td>
<td>x</td>
</tr>
<tr>
<td>4/5/6.8.1 Major Emergency – First Practitioners on site</td>
<td>Add ‘ambulance loading point’</td>
<td>✔</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Add ‘On site co-ordination centre’</td>
<td>✔</td>
<td>x</td>
</tr>
<tr>
<td>4/5/6.8.2 Major Emergency – Operational Control</td>
<td>Add information box ‘Controller of Operations may be other than ambulance or fire officers, depending on nature of emergency</td>
<td>✔</td>
<td>x</td>
</tr>
</tbody>
</table>
## New CPGs

<table>
<thead>
<tr>
<th>New CPGs</th>
<th>The new skills and medications incorporated in the CPG are:</th>
<th>Theory</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPG 4/5/6.3.4 Asthma – Adult</td>
<td>This CPG outlines the care for a patient with an acute asthma episode.</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>CPG 4/5/6.4.27 Sickle Cell Crisis – Adult</td>
<td>This CPG outlines the care for a patient with a sickle cell crisis.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>CPG 4/5/6.6.4 Harness Induced Suspension Trauma</td>
<td>This CPG outlines, in particular, the correct posture for patients following harness induced suspension trauma.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>CPG 4/5/6.6.6 Heat Related Emergency – Adult</td>
<td>This CPG outlines the care for a patient with a heat related emergency.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>CPG 4/5/6.7.12 Asthma – Paediatric</td>
<td>This CPG outlines the care for a paediatric patient with an acute asthma episode.</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>CPG 4/5/6.7.35 Pyrexia – Paediatric</td>
<td>This CPG outlines the care for a paediatric patient with a pyrexia episode.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>CPG 4/5/6.7.36 Sickle Cell Crisis – Paediatric</td>
<td>This CPG outlines the care for a paediatric patient with a sickle cell crisis.</td>
<td>✔️</td>
<td>✗</td>
</tr>
</tbody>
</table>
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.
APPENDIX 5
PRE-HOSPITAL DEFIBRILLATION POSITION PAPER

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.

8 Cardioversion
8.1 Advanced paramedics are authorised to use synchronised cardioversion for unresponsive patients with a tachycardia greater than 150.
Emergency Medical Technician