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| Non-Emergency Patient Transport  Clinical Practice Protocols  2019 Edition  Version 5 |
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Department of Health

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| Non-emergency patient transport  Clinical Practice Protocols  2019 Edition  Version 5 |
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# Abbreviations

|  |  |
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| Abbreviation | Description |
| **ACD** | Advance care directive |
| **AED** | Automatic external defibrillator |
| **APGAR** | Appearance, pulse, grimace, activity, respiratory effort |
| **ARC** | Australian Resuscitation Council |
| **ARV** | Adult Retrieval Victoria |
| **ATA** | Ambulance transport attendant |
| **AV** | Ambulance Victoria |
| **AV clinician** | Ambulance Victoria paramedic working in the Ambulance Victoria communications centre |
| **AV referral** | A secondary triage service operated by Ambulance Victoria and staffed by registered nurses and paramedics |
| **BGL** | Blood glucose level |
| **BVM** | Bag valve mask |
| **BP** | Blood pressure |
| **bpm** | Beats per minute |
| **CPR** | Cardiopulmonary resuscitation |
| **CVC** | Central venous catheter |
| **ECC** | External cardiac compression |
| **ECG** | Electro-cardiograph |
| **EN** | Enrolled nurse (division 2) |
| **GCS** | Glasgow Coma Scale |
| **GTN** | Glyceryl trinitrate |
| **Hg** | Mercury |
| **ICC** | Inter-costal catheter |
| **IHT** | Inter-hospital transfer |
| **IMI** | Intra-muscular injection |
| **IV** | Intravenous |
| **kg** | Kilograms |
| **km/hr** | Kilometres per hour |
| **L** | Litre |
| **L/min** | Litres per minute |
| **LVF** | Left ventricular failure |
| **m** | Metre |
| **mcg** | Micrograms |
| **mg** | Milligrams |
| **MICA** | Mobile Intensive Care Ambulance |
| **min** | Minute |
| **mL** | Millilitre |
| **mm** | Millimetres |
| **MRSA** | Methicillin-resistant staphylococcus aureus |
| **NEPT** | Non-emergency patient transport |
| **NFR** | Not for resuscitation |
| **NSTEMI** | Non-ST segment elevation myocardial infarction |
| **ODT** | Orally dissolving tablet |
| **PCA** | Patient controlled analgesia |
| **PEA** | Pulseless electrical activity |
| **pMDI** | Pressurised metered dose inhaler |
| **PICC** | Peripherally inserted central catheter |
| **PIPER** | Paediatric Infant Perinatal Emergency Retrieval |
| **prn** | When necessary |
| **PTCA** | Percutaneous transluminal coronary angioplasty |
| **PTO** | Patient transport officer |
| **RBG** | Random blood glucose |
| **RN1** | Registered nurse division 1 |
| **RN1 CC** | Registered nurse division 1 with critical care qualification |
| **ROSC** | Return of spontaneous circulation |
| **ROTC** | Refusal of treatment certificate |
| **RR** | Respiratory rate |
| **SAED** | Semi-automatic external defibrillator |
| **secs** | Seconds |
| **SGA** | Supra-glottic airway |
| **SHERP** | State health emergency response plan |
| **TB** | Tuberculosis |
| **TE** | Trained and Endorsed |
| **VF** | Ventricular fibrillation |
| **VRE** | Vancomycin-resistant enterococci |
| **VT** | Ventricular tachycardia |

# Purpose

The purpose of the *Non-emergency patient transport: clinical practice protocols* is to provide practice requirements to licensed non-emergency patient transport (NEPT) providers in the triage, care and transport of patients.

In accordance with the *Non-Emergency Patient Transport Act 2003* (the Act) and the Non-Emergency Patient Transport Regulations 2016 (the Regulations), the *Clinical practice protocols* set out additional practices that NEPT providers must follow. These additional requirements assist licensed NEPT providers, health services and other organisations to make decisions about the use of NEPT services for patients with a variety of clinical conditions and in a range of acuities.

The protocols also provide a framework for licensed NEPT providers in planning and organising their services as well as understanding the knowledge and training requirements for employees.

It is important to note that Ambulance Victoria is the point of contact for clinical emergencies.

## 2019 Edition – Review Overview

The 2018 edition of the NEPT CPP's have been developed with oversight from a multidisciplinary panel with representation from the NEPT sector, the Department of Health, Ambulance Victoria, and the Ambulance Employees Association - Victoria. The review process focused on the clinical aspects of NEPT care and has included consideration of current best practice standards and feedback from a broad consultation phase. The review also caters for the changes to the Ambulance Victoria revised clinical response model and the expected actions of the NEPT sector during State Health Emergency Response Plan events. There have been a number of clinical categories that have been used across the sector since the sector was legislated, these may have had different scopes of practice at various times, however the 2018 edition of the CPP's seeks to make it very clear that whilst there may be a range of clinical providers (e.g. PTO, EN, ATA, RN1, RN1 CC, etc) that the scopes of practice are aligned into functional groups.

## 2018 Edition – Paramedic Registration

A retiring term within the 2018 CPP's is the clinical level of 'Ambulance Officer'. NEPT staff contracted under this term are able to align their practice to the Ambulance Transport Attendant (ATA) scope of practice. For consistency of language the CPP's refer only to the ATA scope–this is to remove any confusion related to the commencement of paramedic registration in late 2018.

# Guide to using the clinical practice protocols

The protocols set out the scope of practice for employees of licensed NEPT providers who are credentialed to a level of practice as described. While taking into account the variety of clinical conditions and acuities of patients that may be serviced by licensed NEPT providers, the types of conditions described in these protocols are not exhaustive. There may be exceptional times where they are confronted with a need to provide care beyond their scope of credentialed practice, and this—in the emergency situation—can be facilitated by a consultation with the AV communications centre staff or in the non-emergency situation, with the party requesting the service.

It is also acknowledged that the information provided in the protocols has been selected for the relevance to licensed NEPT providers and is not suitable for use in other clinical situations. In particular, the references to medications including use, contraindications, side effects and dose ranges are specific to the types of conditions seen by licensed NEPT providers.

#### Visual guide to the Clinical Practice Protocols

**STOP**

** Escalation to emergency ambulance (notification or activation)**

* Critical safety information

**Assess**

* Specific patient assessment

** Escalation to emergency ambulance (notification or activation)**

** Escalation to emergency ambulance (notification or activation)**

**Action**

* Specific patient management / medication administration
* Additional management protocol for accredited NEPT staff (refer to Scope of Practice)

**Action**

# Scope of Practice

NB: To clarify more specific aspects of care, a guide including a detailed list of devices and interventions is also listed in Table 1: Authority to practice matrix; p. 78.

| **No** | **Protocol/Skill** | **PTO** | **EN** | **ATA** | **RN1** | **RN1 CC** |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Patient management** |  |  |  |  |  |
|  | **Clinical approach** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Conscious state assessment** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Perfusion status assessment** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Respiratory status assessment** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Time critical guidelines** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Mental status assessment** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Cardiac arrest** |  |  |  |  |  |
|  | Manual defibrillation |  |  | ✓ | ✓ | ✓ |
|  | Automatic/semi-automatic defibrillation | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | Oropharyngeal airway | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | Nasopharyngeal airway |  |  |  | ✓ | ✓ |
|  | Supra-Glottic airway |  | TE | TE | ✓ | ✓ |
|  | Bag Valve Mask Ventilation | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | IV cannulation |  |  |  | TE | ✓ |
|  | Adrenaline (IV) |  |  |  | TE | ✓ |
|  | Amiodarone (IV) |  |  |  | TE | ✓ |
|  | **Anaphylaxis** |  |  |  |  |  |
|  | Adrenaline (via auto injector) (IM) | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Breathing Difficulties** |  |  |  |  |  |
|  | Oxygen saturation monitoring | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | Oxygen (nasal prongs/face mask) | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | Titrated oxygen care based on oxygen saturation |  |  | ✓ | ✓ | ✓ |
|  | Salbutamol (pMDI/neb) |  | ✓ | ✓ | ✓ | ✓ |
|  | Ipratropium Bromide (Atrovent) |  | ✓ | ✓ | ✓ | ✓ |
|  | Bag Valve Mask Ventilation | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Breathing Difficulties (Choking)** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | **Chest Pain** |  |  |  |  |  |
|  | 3 lead ECG monitoring |  | TE | ✓ | ✓ | ✓ |
|  | 12 Lead ECG |  | TE | TE | ✓ | ✓ |
|  | Aspirin (oral) |  | ✓ | ✓ | ✓ | ✓ |
|  | GTN (sublingual) |  | ✓ | ✓ | ✓ | ✓ |
|  | Methoxyflurane (inhaled) |  | ✓ | ✓ | ✓ | ✓ |
|  | ***Hypoglycaemia*** |  |  |  |  |  |
|  | *Glucose paste (oral)* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *BGL* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *Glucagon (IM)* |  | ✓ | ✓ | ✓ | ✓ |
|  | ***Nausea and Vomiting*** |  |  |  |  |  |
|  | *Ondansetron (oral)* |  | ✓ | ✓ | ✓ | ✓ |
|  | ***Oxygen Therapy*** |  |  |  |  |  |
|  | *Pulse oximetry* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *Titrated oxygen therapy* |  |  | ✓ | ✓ | ✓ |
|  | ***Pain Relief*** |  |  |  |  |  |
|  | *Paracetamol (oral)* | TE | ✓ | ✓ | ✓ | ✓ |
|  | *Methoxyflurane (inhaled)* |  | ✓ | ✓ | ✓ | ✓ |
|  | ***Stroke*** |  |  |  |  |  |
|  | *Stroke assessment* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | ***Traumatic Injuries*** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | ***Falls*** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | ***Principles of Trauma Care*** | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *Cervical collars/spinal immobilisation* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *Arterial tourniquets* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *Pressure dressings* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *Traction splints* | TE | TE | TE | ✓ | ✓ |
|  | *Pelvic splinting* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | ***Hospital Transfers*** |  |  |  |  |  |
|  | ***Maintenance of medication administration*** |  |  |  |  |  |
|  | *Narcotic infusion (s/c)* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *IV Crystalloid* |  | TE | ✓ | ✓ | ✓ |
|  | *GTN infusion* |  | TE | ✓ | ✓ | ✓ |
|  | *Heparin infusion* |  | TE | ✓ | ✓ | ✓ |
|  | *Blood products* |  | TE | ✓ | ✓ | ✓ |
|  | *IV Crystalloid with potassium added* |  | TE | ✓ | ✓ | ✓ |
|  | *Antibiotics* |  | TE | ✓ | ✓ | ✓ |
|  | *Narcotic infusion (IV)* |  |  |  | ✓ | ✓ |
|  | *Other vasoactive medications (e.g. inotropes)* |  |  |  |  | ✓ |
|  | *Anti-arrhythmic medication infusion (amiodarone or lignocaine)* |  |  |  |  | ✓ |
|  | ***Other treatments*** |  |  |  |  |  |
|  | *Capped CVC for low acuity patients* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *PICC that is not in active use* | ✓ | ✓ | ✓ | ✓ | ✓ |
|  | *TPN via PICC* |  | TE | ✓ | ✓ | ✓ |
|  | *Chemotherapy infusion* |  | TE | ✓ | ✓ | ✓ |
|  | *CVC infusion (including TPN)* |  |  |  | ✓ | ✓ |
|  | *ICC* |  |  |  | ✓ | ✓ |
|  | *Insulin infusion* |  |  |  | ✓ | ✓ |
|  | *IV cannula insertion* |  |  |  | TE | ✓ |
|  | *Arterial line* |  |  |  |  | ✓ |
|  | *Intra-aortic balloon pump* |  |  |  |  | ✓ |
|  | *Pacing wire* |  |  |  |  | ✓ |

*TE = Where trained and endorsed*

# Section One – Patient Assessment

## Clinical Approach

#### Notes

1. The Clinical Approach provides the standard of care expected for the systematic assessment, management, and assessment by NEPT providers. In certain situations, transport of patients is key to patient care and should not be unduly delayed. If there is no clinical requirement to provide assessment and/or management (e.g. low acuity transport), this should be documented on the PCR.
2. The frequency of reassessment depends on the clinical situation. If management is provided using one of the CPPs, patients should be reassessed at a minimum of 15-minute intervals.
3. During inter-hospital transfers, some patients will have ‘Clinical escalation criteria’ recorded by the sending facility on their observation chart. These values will supersede the values otherwise considered as abnormal according to the assessment tools in these CPPs and the clinical escalation plan should be implemented in accordance with the instructions from the sending facility.
4. The pause and plan moment provides an opportunity for the caregivers on scene to discuss their clinical impression of the patient problem/s, along with the plan for management. Ideally these discussions should be openly held in front of the patient to allow for their input.
5. When the patient is first assessed, consideration should be given to not only how the patient presents at that time, but also where the patient is placed on their clinical trajectory. For example, a patient who has had a chest infection for three days is potentially much sicker than a patient presenting with a productive cough and high temperature on day one of their illness, although their VSS may be the same.
6. The dynamic risk assessment is highlighted as part of the clinical approach to reinforce to all staff that it is not expected that they put themselves at risk of injury during manual handling or any other procedure.

## Clinical Approach to Assessment



* Utilise standard precautions, PPE and personal safety awareness
* Dangers
* Handover from health professionals / bystanders on scene
* History of presenting complaint e.g. DOLOR
* Patient medical history e.g. AMPLE
* Full assessment including:
  + Baseline vital signs survey
  + Conscious state assessment, PSA, RSA
  + Secondary survey / other relevant assessments

**Assess – History and Secondary Survey**

* Rapport, rest and reassurance
* Position appropriately

**Action – Basic Care**

If patient appears unwell, each point in the primary survey must be considered and identified issues addressed

* Response
* Airway (consider spinal precautions)
* Breathing
* Circulation (including haemorrhage check)
* Disability (AVPU)
* Exposure

**Assess – Primary Survey**

**STOP – Scene Safety**

** Activate emergency ambulance response if life-threatening condition identified (e.g. cardiac arrest, choking, unconscious, severe haemorrhage)**

**Clinical Approach to Assessment continued**

# 

** If not suitable for NEPT, notify AV communications**

**Action – Pause and Plan**

# 

1. Verbally identify clinical problems
2. Consider patient suitability for NEPT:
   1. If suitable for NEPT, verbally confirm treatment plan with team
   2. If not suitable for NEPT, notify AV communications. Consider remaining on scene vs. rendezvous / transport

# 

** Continue to provide regular situation reports to AV communications as required**

* Manage patient using appropriate Protocol as required
* Reassess during transport as required

**Action – Management and Transport**

* Further management for accredited NEPT employees

## Conscious State Assessment

| Glasgow Coma Scale | | |
| --- | --- | --- |
| Assess | Response adult | Score |
| 1. **Eye opening** | Spontaneous | 4 |
| To sound | 3 |
| To pressure | 2 |
| None | 1 |
| 1. **Best verbal response** | Orientated | 5 |
| Confused | 4 |
| Intelligible single words | 3 |
| Incomprehensible sounds | 2 |
| None | 1 |
| 1. **Best motor response** | Obeys command | 6 |
| Localises to pain | 5 |
| Normal flexion (pain) | 4 |
| Abnormal flexion (pain) | 3 |
| Extension (pain) | 2 |
| None | 1 |
| TOTAL SCORE |  |

**AVPU**

AVPU is a quick and simple to apply and is appropriate to determine conscious state whilst initial assessment is conducted, and treatment is being established. A formal GCS should be undertaken in more complex patient presentations.

A patient cannot have a conscious state assessment done while asleep. They must be woken first. If the patient wakes and remains awake and alert, record this as an 'A' for AVPU. If the patient wakes but remains drowsy and appears inattentive, report this as a 'V'.

When assessed, does the patient:

Appear and respond Alertly? = **A**

Respond to Voice? = **V**

Respond to Pain? = **P**

Remain Unresponsive? = **U**

**Not suitable for NEPT**

* Reduction in GCS by > 2 points from the patient’s normal conscious state within the past 24 hours (unless mechanically ventilated with a medical practitioner escort)
* Paediatric patient who is not alert and does not have a suitable clinical escort

## Perfusion Status Assessment (Adult)

| Assess | Adequate perfusion | Borderline perfusion | Inadequate perfusion | Extremely poor | No perfusion |
| --- | --- | --- | --- | --- | --- |
| **Skin** | Warm, pink, dry | Cool, pale, clammy | Cool, pale, clammy | Cool, pale, clammy | Cool, pale, clammy |
| **Heart rate** | 60–100 bpm | 50-100 bpm | <50 or >100 bpm | <50 or >110 bpm | No palpable pulse |
| **Blood pressure** | >100 mmHg systolic | 80-100 mmHg systolic | 60-80 mmHg systolic | <60 mmHg systolic or un-recordable | Un-recordable |
| **Conscious state** | Alert and orientated to time and place | Alert and orientated to time and place | Either alert and orientated to time and place or altered | Altered or unconscious | Unconscious |

* BP <100 mmHg (unless normal for patient). A patient with acute hypotension which is expected (e.g. after dialysis) may be transported by NEPT
* HR <50 bpm or >100 bpm (unless normal for patient). A patient with a temporary pacing wire for bradycardia may be transported by NEPT

**Not suitable for NEPT**

## Respiratory Status Assessment (Adult)

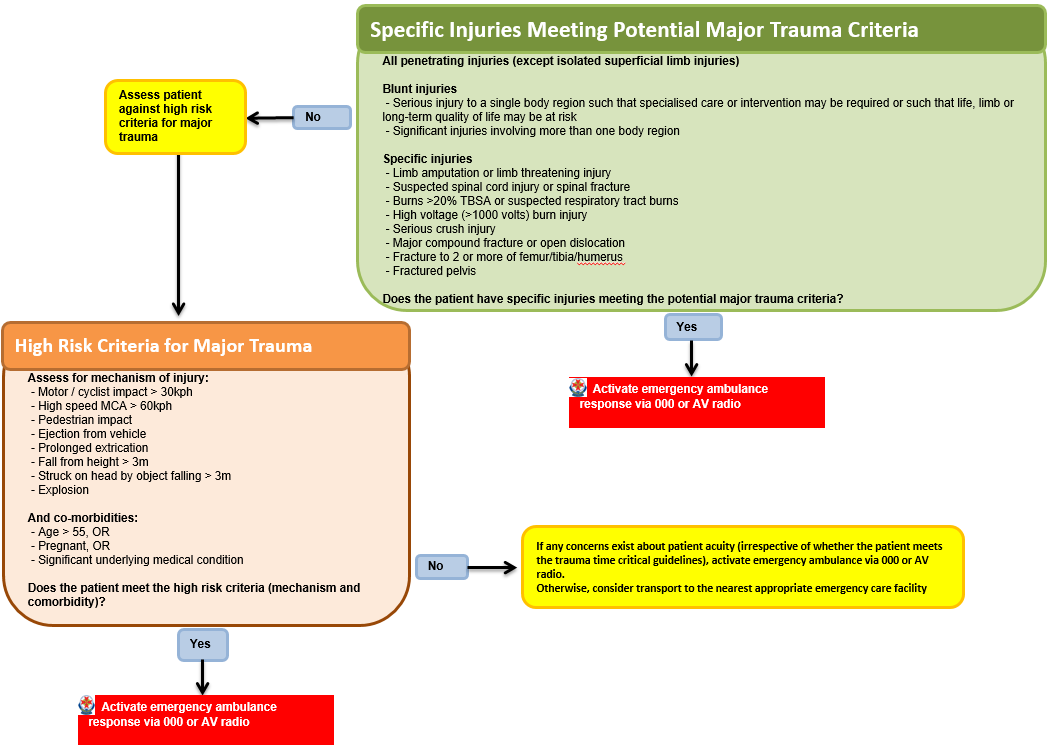
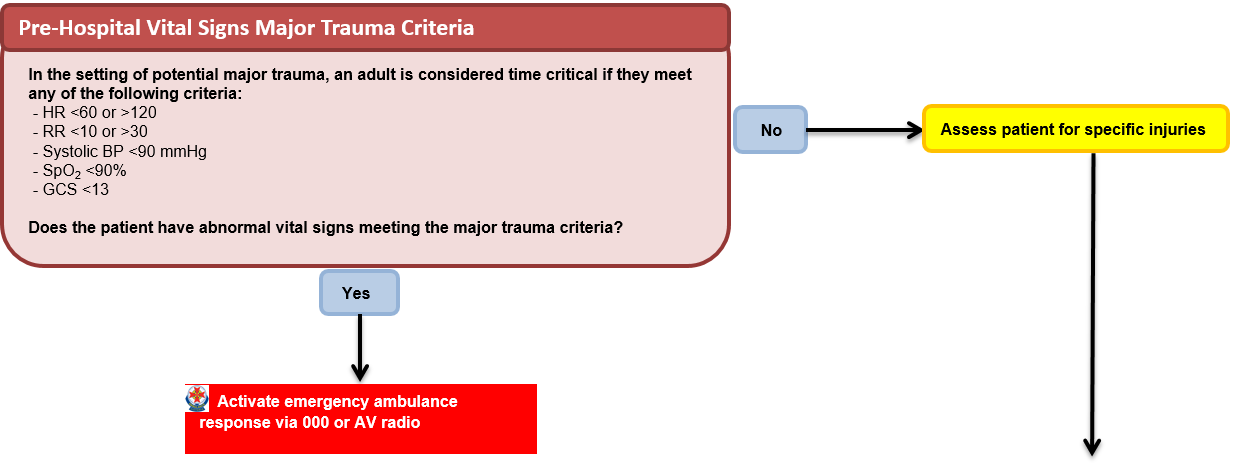
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Assess | Normal | Mild distress | Moderate distress | Severe distress  (life threatening) |
| **General appearance** | Calm, quiet | Calm or mildly anxious | Distressed or anxious | Distressed, anxious, fighting to breathe, exhausted, catatonic |
| **Speech** | Clear and steady sentences | Full sentences | Short phrases only | Words only or unable to speak |
| **Breath sounds or auscultation** | Usually quiet, no wheeze  No crackles or  scattered fine basal  crackles,  e.g. postural | Able to cough  Asthma: mild expiratory wheeze  Left Ventricular Failure (LVF): may be some fine crackles at bases | Able to cough  Asthma: expiratory  wheeze, +/– inspiratory  wheeze  LVF: crackles at bases - to mid-zone | Unable to cough  Asthma: expiratory wheeze, +/– inspiratory wheeze, maybe no breath sounds (late)  LVF: fine crackles – full field, with possible wheeze  Upper Airway Obstruction: Inspiratory stridor |
| **Respiratory rate** | 12–16 per minute | 16–20 per minute | >20 per minute | > 20 per minute  Bradypnoea (<8 per minute) |
| **Respiratory rhythm** | Regular even cycles | Asthma: may have slightly prolonged expiratory phase | Asthma: prolonged expiratory phase | Asthma: prolonged expiratory phase |
| **Breathing effort** | Normal chest movement | Slight increase in normal chest movement | Marked chest movement +/- use of accessory muscles | Marked chest movement with accessory muscle use, intercostal recession +/- tracheal tug. |
| **Heart rate** | 60–100 bpm | 60–100 bpm | 100–120 bpm | > 120 bpm  Bradycardia (HR <50) a late sign |
| **Skin** | Normal | Normal | Pale and sweaty | Pale and sweaty, +/– cyanosis |
| **Conscious state** | Alert | Alert | May be altered | Altered or unconscious |

* Moderate or severe respiratory distress (unless normal for patient)
* Respiratory distress which does not improve after rest or management with the Breathing Difficulties protocol

**Not suitable for NEPT**

## Trauma Time Critical Guidelines (Adult)

The trauma time critical guidelines are included for the purpose of identifying potential major trauma patient. As normal business, patients that meet the guidelines will be transported by an emergency ambulance. NEPT providers may be required to transport potential major trauma patients as part of major incidents or if the State Health Emergency Response Plan is activated. If unsure of transport destination or considering non-transport of a trauma patient, consult with the AV Clinician.

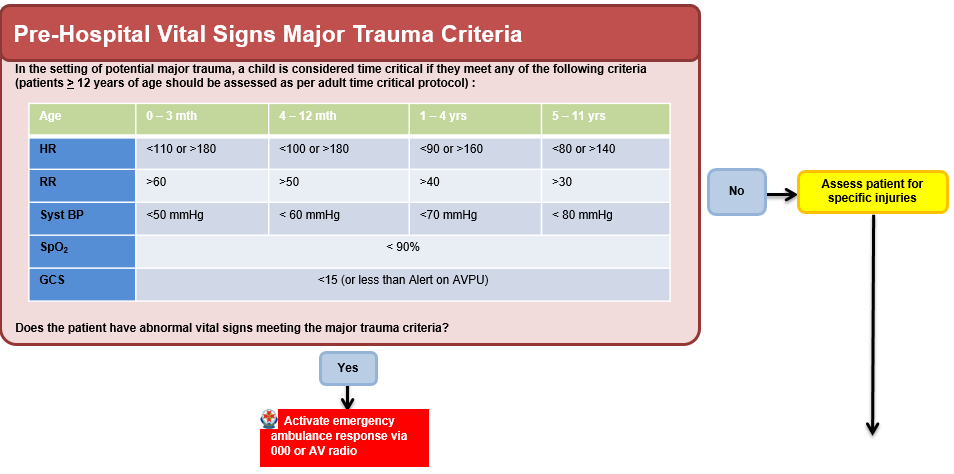


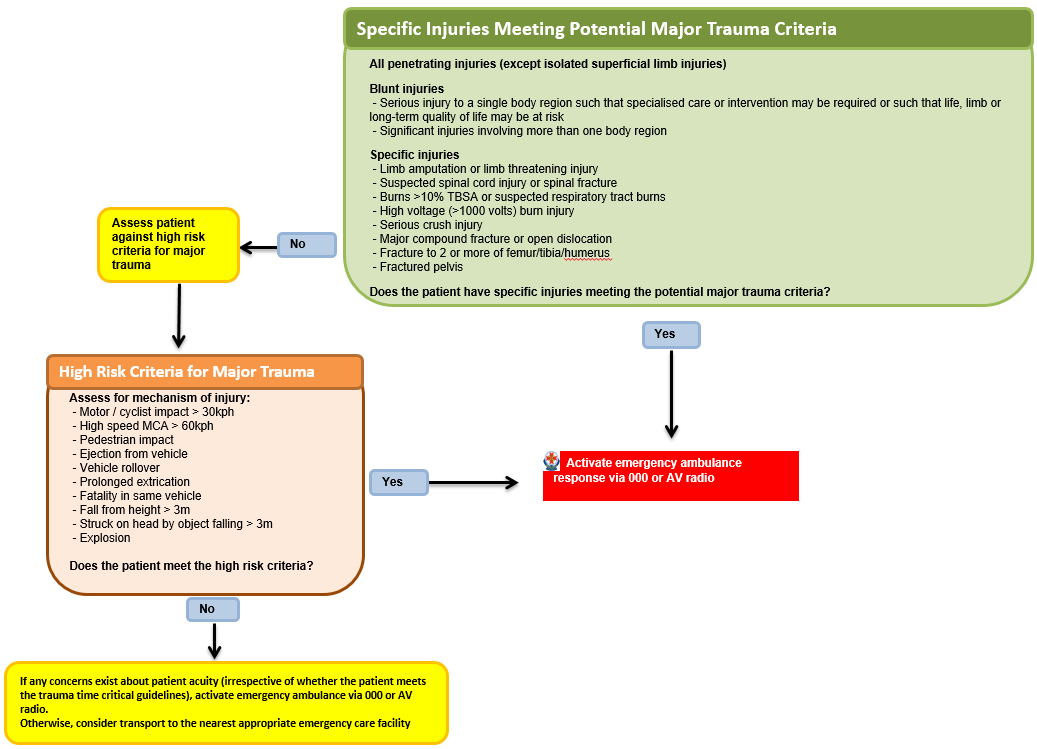
* Patient meets any criteria for Major Trauma (Vital Signs, Specific Injuries or High Risk Criteria), unless assessed as suitable for NEPT transport by a medical practitioner and after consultation with Adult Retrieval Victoria (ARV)
* ARV patients (unless specifically approved by consulting retrieval physician)

**Not suitable for NEPT**

## Trauma Time Critical Guidelines (Paediatric)

For the purposes of the CPP clinical care, a child is defined as 11 years old or younger. The rationale for this relates to the physiological parameters and medication doses of older children being equal to adults. This principle does not relate to emotional care, mental health, or legal obligations of caring for a person under the age of 18.





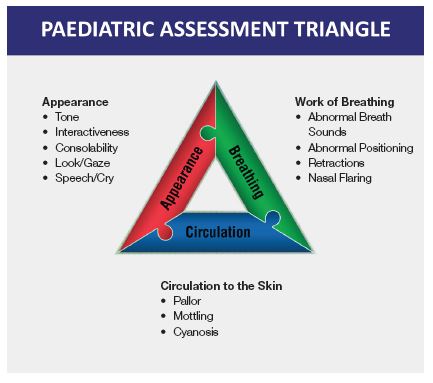
**Not suitable for NEPT**

* Patient meets any criteria for Major Trauma (Vital Signs, Specific Injuries or High-Risk Criteria), unless assessed as suitable for NEPT transport by a medical practitioner and after consultation with the Paediatric Infant Perinatal Emergency Retrieval (PIPER) service
* PIPER patients (unless specifically approved by consulting retrieval physician)

## Paediatric Assessment

### Initial Paediatric Assessment

It is important to form a rapid first impression of the patient’s appearance, breathing, and circulation as illustrated in the Paediatric Assessment Triangle below. Visually evaluate mental status, muscle tone and body position, chest movement, work of breathing, and skin colour whilst also looking for obvious injuries. This assessment should not take more than a few seconds.



**REFERENCE:** Dieckmann RA, Brownstein D, Gausche-Hill M, eds. Pediatric Education for Prehospital Professionals: PEPP Textbook. Sudbury, MA: Jones & Bartlett Publishers; 2000.

If the child appears well with no signs of serious trauma, approach with a calm demeanour whilst explaining your actions to the parents and the child. If a well-appearing patient has experienced a high-risk mechanism of injury, consider the patient potentially unstable due to the risk of serious internal injuries.

For children with a poor appearance and evidence of significant injury, proceed immediately to the primary survey including any lifesaving interventions as appropriate.

### Paediatric Normal Values

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Descriptor | Approximate age range | Heart rate | Blood pressure | Skin | Conscious state | Respiratory rate |
| Newborn | Birth to 24 hours | 110–170 bpm | >60 mmHg systolic | Warm, pink, dry | Alert, active | 25–60 breaths per minute |
| Small infant | <3 months | 110–170 bpm | >60 mmHg systolic | Warm, pink, dry | Alert, active | 25–60 breaths per minute |
| Large infant | 3–12 months | 105–165 bpm | >65 mmHg systolic | Warm, pink, dry | Alert, active | 25–55 breaths per minute |
| Small child | 1–4 years | 85–150 bpm | >70 mmHg systolic | Warm, pink, dry | Alert, active | 20–40 breaths per minute |
| Medium child | 5–11 years | 70–135 bpm | >80 mmHg systolic | Warm, pink, dry | Alert, active | 16–36 breaths per minute |

*Paediatric values are based on the Victorian State Government, Royal Children’s Hospital and Monash Children’s Hospital ViCTOR values.*

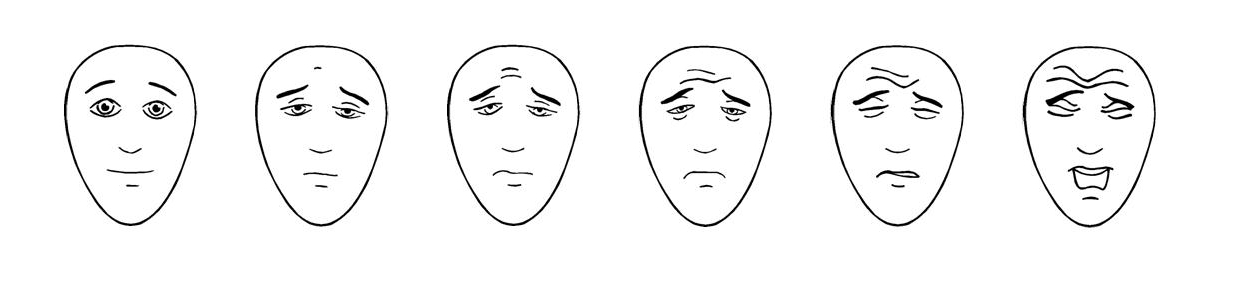
*Go to:* [*www.victor.org.au*](http://www.victor.org.au) *for more information.*

### Paediatric Normal Weights

|  |  |
| --- | --- |
| Age | Weight |
| <24 hours | 3.5 kg |
| 3 months | 6 kg |
| 6 months | 8 kg |
| 1 year | 10 kg |
| 1–9 years | Age x 2 + 8 kg |
| 10–11 years | Age x 3.3 kg |

## Pain Assessment

### Faces Pain Scale

**Reference:** Hicks CL, et al. The Faces Pain Scale - Revised: Toward a common metric in pediatric pain measurement. Pain 2001; 93:173-183.

In the following instructions, say "Hurt" or "Pain," whichever seems right for a particular child:

* **‘These faces show how much something can hurt. This face** *[point to left-most face]* **shows no pain. The faces show more and more pain** *[point to each from left to right]* **up to *this* one.** *[point to right-most face]* **It shows very much pain. Point to the face that shows how much you hurt** *[right now]***.’**
* Score the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so ‘0’ equals ‘No pain’ and ‘10’ equals ‘Very much pain.’ Do not use words like ‘happy’ and ‘sad.’ This scale is intended to measure how children feel inside, not how their face looks.

**Verbal numerical rating scale**

This scale asks the patient to rate their pain from ‘no pain’ (0) to ‘worst pain possible’ (10) and is suitable for use in children over six years of age who have an understanding of the concepts of rank and order. Avoid using numbers on this scale to prevent the patient receiving cues. Some patients are unable to use this scale with only verbal instructions but may be able to look at a number scale and point to the number that describes the intensity of their pain.

## Mental Status Assessment

|  |  |  |
| --- | --- | --- |
|  |  | **LOOK FOR, LISTEN TO & ASK ABOUT ALL CATEGORIES BELOW *THE PATIENT MAY BE SUFFERING FROM SOME OF THE FOLLOWING EXAMPLES***  ***\*Remember verbal de-escalation strategies, active listening and calm/open body language\**** |
| OBSERVE | **Safety** | First responder, patient and bystander safety first is priority. Assess the scene for dangers i.e. location, weapon. Obtain police support early if required. Maintain vigilant reassessment of scene safety. |
| **Appearance** | Look for signs indicative of mental health issues or poor self-caring; uncleanliness, disheveled, malnourished, signs of addiction (injection marks/nicotine stains), posture, pupil size, odour. |
| **Behaviour** | Patient may display; odd mannerisms, impaired gait, avoidance or overuse of eye contact, threatening or violent behaviour, unusual motor activity or activity level (i.e. wired or buzzing), bizarre/inappropriate responses to stimuli, pacing. |
| **Affect** | Observed to be; flat, depressed, agitated, excited, hostile, argumentative, violent, irritable, morose, reactive, unbalanced, bizarre, withdrawn etc. |
| LISTEN | **Speech** | Take note of: rate, volume, quantity, tone, content, overly talkative, difficult to engage, tangential, flat, inflections etc. |
| **Thought**  **process** | May be altered, can be perceived by patient jumping irrationally between thoughts, sounding vague, unsteady through flow when communicating verbally. |
| **Cognition** | May be exhibiting signs of impairment such as; poor ability to organise thoughts, short attention span, poor memory, disorientation, impaired judgement, lack of insight. |
| DISCUSS | **Thought content** | May be dominated by; delusions, obsessions, preoccupations, phobias, suicidal/depressed or homicidal thoughts, compulsions, superstitions. |
| **Self-harm** | Ask patient directly if they have attempted self-harm, suicide or are thinking/planning for these. Ask about previous attempts. |
| **Perceptions** | Patient may be suffering from; hallucinations (ask specifically about auditory, visual and command hallucinations), disassociation  i.e. ‘I feel detached from my body’, ‘my surroundings aren’t real’, ‘I am not in control of my actions’. |
| **Environment** | Risk factors include; lack of familial and social support, addiction or substance abuse, low socio-economic status, life experiences, recent stressors, sleeping problems or comorbidities (either physical or mental health conditions). |

# Section Two **–** Adult Clinical Protocols

**Please note:** With the exception of anaphylaxis, where patients should be treated irrespective of age, medication doses only apply to patients 12 years and older. For treatment of patients 11 years and younger, consult for dose advice with the communications centre. For non-urgent enquiries this does not need to be the AV communications centre.

## Cardiac Arrest (Adult)

#### Notes

1. Signs of life: any patient who is unconscious and not breathing normally should be presumed to be in cardiac arrest and CPR commenced immediately. Palpation of a pulse is unreliable and should not be performed to confirm the need for resuscitation. The benefits of early and high-quality CPR outweigh the low risk of injury to patients not in cardiac arrest.
2. The principles of high-quality CPR include:
   * Ratio of 30 compressions to 2 ventilations, at a compression rate of 100-120 per minute (one or two operators)
   * Where a supra-glottic airway has been established, modify CPR ratio to 15 compressions to 1 ventilation. Do not pause compressions for ventilated breaths
   * Compressions should be performed to approximately one third of the depth of the chest (approx. 5cm in adults), with complete recoil allowed after each compression
   * Minimal interruption to compressions is essential. If it is uncertain whether or not a pulse is present, CPR should recommence immediately
   * Change operator every two minutes to improve CPR performance and reduce fatigue
3. IV cannulation and medications are lower priority interventions than high quality CPR and early defibrillation.
4. For the purposes of the protocols, an automatic external defibrillator (AED) is regarded as being the same as a semi‑automatic external defibrillator (SAED). AED/SAED operation has been shown to decrease the time to first shock compared to manual defibrillation.
5. Ventilations should be delivered with sufficient volume to cause rise and fall of the chest.
6. The decision to cease resuscitation efforts should only be made by a registered paramedic, a registered nurse or doctor. If this support is not available, consult with the AV clinician. Cessation may also be considered where the crew is exhausted or in circumstances where the scene is unsafe.
7. CPR or defibrillation may only be withheld if there is a not-for-resuscitation order, advance care plan/directive or refusal of treatment certificate that states that cardiopulmonary resuscitation be withheld.

For home-to-hospital transfer, this documentation may be sighted or accepted in good faith by those present at the scene that this document exists, i.e. the document does not have to be provided to the attending crew. This may also include instructions communicated to NEPT staff by the patient’s designated medical treatment decision maker[[1]](#footnote-1). NEPT health professionals must record full details of the information given to them and by whom regarding the patient’s wishes. If there is any doubt about the patient’s wishes for resuscitation, the default position of continuing resuscitation should be adopted. For inter-hospital transfer, or hospital-to-home transfer, copies of relevant documentation must be provided by the sending health service and included in the NEPT patient care record. Where a copy is not obtained, the NEPT crew must advise the sending health service that they will provide routine usual care to the patient should it be necessary.

**Cardiac Arrest (Adult)**

**Initial management**

* Position supine with neutral head position
* Immediately commence chest compressions
* Attach defibrillator (AED / SAED) and follow instructions
* **Defibrillate** if shock advised

**Continuing management**

* **CPR 30:2 for 2 minutes**
* Check for signs of life and follow instructions from defibrillator
* Insert OPA / NPA / SGA (CPR ratio now 15:1 with SGA)

** Activate emergency ambulance**

**Signs of life present**

**Ventilate 6-8 breaths/min** via BVM

Transport or rendezvous with emergency ambulance as directed by AV communications

** Continue to provide updates and situation reports to AV communications**

**Patient presentation**

* Unconscious and not breathing normally

**Signs of life absent**

* **Defibrillate** if shock advised
* Continue **CPR**

**Where trained and endorsed (e.g. RN, CCRN)**

* Insert IV and administer **adrenaline** 1 mg IV every second CPR cycle
* **Amiodarone** 300 mg IV after 3rd shock
* **Amiodarone** 150 mg IV after 5th shock

## Anaphylaxis (Adult)

#### Notes

1. Anaphylaxis is a life-threatening medical condition. If anaphylaxis is suspected there must be no delay in administration of **adrenaline** and activation of emergency ambulance.
2. Common triggers include foods, insect bites/stings and medications. A patient may have no prior history of anaphylactic reactions or may be unaware that they have been exposed to an antigen.
3. All suspected or reported anaphylaxis patients **MUST** be transported to hospital for observation, even if they have been treated prior to NEPT arrival and are now showing no signs or symptoms.
4. Standing or walking a patient with suspected anaphylaxis can result in a profound reduction in blood pressure and collapse. Position the patient supine as soon as possible and adjust the head height based on the patients’ blood pressure.
5. This CPP refers to **adrenaline** auto-injectors. Whilst national anaphylaxis guidelines refer to an adult dose of 500 mcg IM, most adult auto-injectors will deliver a 300mcg dose. This is an acceptable dose and the key point is that if a patient meets the criteria for anaphylaxis, they are treated with **adrenaline** in a timely manner.
6. Where NEPT staff are authorised to draw up and administer medication from an ampoule, **adrenaline** may be used from a 1:1000 (1 mL) ampoule. The recommended dose is 10 mcg/kg (maximum 500 mcg) IM up to the age of 11 years, or 500 mcg IM for age 12 years and older.
7. If a patient has an existing anaphylaxis plan, this should be followed in conjunction with the CPP. If a patient meets the clinical criteria for **adrenaline** administration, this should remain the priority treatment.
8. All patients who have received adrenaline for possible anaphylaxis must be transported for follow up medical assessment, even if symptoms have seemingly resolved.

#### Anaphylaxis (Adult)

**Patient presentation**

* Sudden onset of signs and symptoms of anaphylaxis (see below)
* Patient **may or may not** have a history of allergy or anaphylaxis

**Assess**

Anaphylaxis is likely if **either** of the below conditions are met:

* Signs / symptoms from **two or more** of the groups below (with or without exposure to antigen)

**R** Respiratory distress (SOB, wheeze, cough, stridor)

**A** Abdominal symptoms (nausea, vomiting, diarrhoea, abdo pain / cramps)

**S** Skin / mucosal symptoms (hives, welts, itch, flushing, angioedema)

**H** Hypotension (or altered conscious state)

**OR**

* Hypotension only (SBP < 90 mmHg) following confirmed exposure to known antigen

**Management**

** Activate emergency ambulance response**

* Adult
  + **adrenaline 300mcg auto-injector**
* **Oxygen 10-15 L/min** via non-rebreather mask (or face mask)
* Where possible, do not allow patient to stand or walk
* If inadequate perfusion, position patient supine with legs elevated
* If wheeze present, treat as per **Breathing Difficulties protocol**
* Repeat **adrenaline auto-injector (same as original dose) IM after 5 minutes** if no improvement or deterioration
* If patient loses consciousness and is not breathing normally, manage as per **Cardiac Arrest protocol**
* **All patients who have received adrenaline for possible anaphylaxis must be transported for follow up medical assessment, even if symptoms have seemingly resolved.**

** Provide situation report and commence transport / rendezvous as appropriate**

## Breathing Difficulties

#### Notes

* Moderate or severe respiratory distress (unless normal for patient)
* Respiratory distress which does not improve after rest or management with the Breathing Difficulties protocol

**Not suitable for NEPT**

1. If pulse oximetry is unavailable and employee is not accredited in titrated oxygen administration, oxygen may be administered at the following rates:

|  |  |
| --- | --- |
| **Situation** | **Oxygen Administration** |
| Oxygen therapy prescribed by medical practitioner for transfer | Prescribed rate (note in PCR) |
| Patient normally on home oxygen | Usual/prescribed rate (note in PCR) |
| Severe respiratory distress, awaiting emergency ambulance | 8 L/min via face mask or nebuliser mask |
| Mild-moderate respiratory distress, transport via NEPT | 8 L/min via face mask or nebuliser mask |
| Known COPD patient who becomes breathless during loading/transfer | 2 L/min via nasal prongs initially. If breathlessness does not improve after 10 minutes, manage as per Breathing Difficulty protocol |

1. Patients with breathing difficulties and wheeze may benefit from **salbutamol** and **ipratropium bromide** therapy. **Salbutamol** may be administered by inhaler/spacer for asthma patients with mild to moderate distress. In combination they may be delivered by an oxygen-driven nebuliser (8L/min) for the COPD patient, or the asthma patient with severe distress. Indications for therapy are:

|  |  |
| --- | --- |
| **Situation** | **Medication Administration** |
| As prescribed by medical practitioner for respiratory distress | Prescribed dose (note in PCR) |
| Any exacerbation of COPD | Nebulised **salbutamol** and i**pratropium bromide** as per protocol |
| Asthma patient with mild-moderate respiratory distress, awaiting emergency ambulance | **Salbutamol** pMDI or nebulised as per Breathing Difficulties protocol |
| Asthma patient with severe respiratory distress, awaiting emergency ambulance | Nebulised **salbutamol** and **ipratropium bromide** as per protocol |

#### Breathing Difficulties

**Patient presentation**

* Respiratory distress (acute or chronic)
* If possible airway obstruction go to **Breathing Difficulties (Choking) protocol**
* If patient is unconscious with respiratory distress and a wheeze, assess for anaphylaxis

**Assess**

* Respiratory status
* Pulse oximetry (if available)

**Severe respiratory distress**

** If severe, activate emergency ambulance. Provide situation report and commence transport / rendezvous as appropriate**

**Mild or moderate respiratory distress**

* Position upright if possible
* **Oxygen 8L/min**

If wheeze present or history of asthma:

* **Salbutamol 4-12 doses via pMDI**

If pMDI unavailable

* **Salbutamol 5mg neb**
* and if pre-existing history of COPD, add **ipratropium bromide 500mcg neb**
* Position upright if possible
* **Oxygen 8L/min**
  + If wheeze present or history of asthma/COPD
* **Salbutamol 10mg (5mL) neb** and
* **Ipratropium Bromide 500mcg neb**
* If pulse oximetry available, provide titrated Oxygen as per **Oxygen Therapy protocol**
* If pulse oximetry available, provide titrated Oxygen as per **Oxygen Therapy protocol**

**Continuing management**

** If unimproved, activate emergency ambulance. Provide situation report and commence transport / rendezvous as appropriate**

* If improved, commence transport, notify receiving health service and continue to reassess

If unimproved AND wheeze present / history of asthma:

* Repeat **salbutamol 5mg neb once only**
* Consult AV Clinician for further treatment (eg: Adrenaline IM)

If patient requires multiple doses of **Salbutamol**, assess them against the anaphylaxis “RASH” criteria

* Manage patient as per **Cardiac Arrest protocol**

**Patient becomes unconscious**

## Breathing Difficulties (Choking)

* Choking

1. Conscious state

**Patient presentation**

**Assess**

* Ability to cough
* Conscious state

**Ineffective cough but conscious**

** If unconscious or unable to clear obstruction, activate emergency ambulance**

**Ineffective cough and unconscious**

**Effective cough**

* Encourage coughing
* Monitor for clearance or deterioration
* If obstruction cleared, no further intervention is required, commence transport
* Go to Cardiac Arrest protocol
* Give **up to 5 back blows**
* Monitor for clearance or deterioration
* If obstruction remains, give **up to 5 chest thrusts**
* Continue to alternate between 5 back blows and 5 chest thrusts until obstruction cleared

## Chest Pain (of a possible cardiac nature)

**Not suitable for NEPT**

* Adult patient (over 20 years) with potential cardiac chest pain that remains unresolved after administration their usual medication
* Patients requiring immediate time critical transfer for coronary angiography and/or cardiac surgery

|  |
| --- |
| **Notes**   1. During inter-hospital transfer of the patient with an acute coronary syndrome, mild chest pain which occurs despite **GTN** and heparin infusions may be treated with sublingual **GTN** and transport continued. An emergency ambulance need only be called if the chest pain does not promptly resolve with the administration of sublingual **GTN**, or the patient develops instability of vital signs or cardiac rhythm. 2. Similarly, chest pain that occurs during transport of a patient who has known ischaemic heart disease, where the chest pain is not an unusual occurrence for the patient may be treated with sublingual **GTN** and transport continued. An emergency ambulance need only be called if the chest pain does not resolve with the administration of sublingual **GTN**, or the patient develops instability of vital signs or cardiac rhythm. If the pain is not resolved or significantly relieved after 3 doses of **GTN**, or if the pain is significantly worse than the patient’s normal pain, an emergency ambulance should be called (with consideration for time to hospital versus time to assistance). 3. For the patient who has had an episode of chest pain, continuous ECG monitoring should be provided even where the pain has resolved. If available, a 12-lead ECG should be acquired. 4. Patients with cardiac chest pain have potential to deteriorate rapidly. Emergency resuscitation equipment should be available and ready for use in anticipation. |

#### Chest Pain (of a possible cardiac nature)

* Chest pain

**Patient presentation**

**Assess**

* Symptoms and pain score
* Apply cardiac monitor and record ECG if available
* Prepare for possible patient deterioration

**Initial management**

** Notify AV communications**

* **Aspirin 300 mg oral** if not already administered in the last 24 hours
* **GTN**
  + **GTN 300 mcg sublingual** if not previously administered
  + **GTN 600 mcg sublingual** if previously administered
* Monitor patient and remove tablet immediately if side effects occur

** Activate emergency ambulance. Provide situation report and commence transport / rendezvous as appropriate.**

* Repeat **GTN original dose sublingual** at 5 minute intervals until patient is pain-free**.** Cease administration if SBP <110 mmHg or side effects occur
* Treat with **Methoxyflurane** as per **Pain Relief protocol** if pain persists and / or GTN is contraindicated

**Continuing management**

## 

## Hypoglycaemia

#### Notes

1. The treatment of hypoglycaemia is authorised for NEPT employees if:
   * It occurs in a patient with a history of diabetes mellitus, and hypoglycaemia is found on arrival or occurs during transport
   * A patient with diabetes mellitus presents to the NEPT employee with signs or symptoms of hypoglycaemia at a public event
2. Since **glucagon** may take some time to take effect and is not always effective, the patient may need subsequent evaluation by a registered medical practitioner. Activate emergency response ambulance and rendezvous with or await emergency ambulance.

**Patient presentation**

## Nausea and Vomiting

**Continuing management**

**Assess**

* Conscious state, perfusion status and respiratory status
* Blood glucose level if available
* Altered conscious state e.g. drowsy, confused, agitated, combative
* Patient may also have tachycardia and diaphoresis

**Does not respond to command**

* Monitor airway, breathing and circulation and manage as appropriate

If BGL <4 mmol/L

* **Glucagon 1 mg IM** if patient ≥ 25 kg OR
* **Glucagon 0.5 mg IM** if patient < 25 kg

If unimproved and BGL <4 mmol/L

* **Glucagon IM** as above(only if not already administered)

If improved, commence transport, notify receiving health service and continue to reassess

** If unimproved, activate emergency ambulance. Provide situation report and commence transport / rendezvous as appropriate**

* **Glucose paste 15 g oral**

**Responds to command**

#### Notes

1. There are several physiological mechanisms of nausea and vomiting. **Ondansetron** may not be effective for all types. If symptoms are being tolerated, basic care and transport is acceptable.
2. Dehydration can exacerbate symptoms of nausea. If not contraindicated (e.g. fluid restriction) and practical to do so, the patient may be hydrated with oral fluids before and during transport.

**Patient presentation**

* Nausea

and/or

* Vomiting
* Signs and symptoms
* Patient tolerance

**Assess**

**Initial management**

If symptoms not tolerated:

* **Ondansetron 4 mg oral**

**Continuing management**

If symptoms persist:

* Repeat **Ondansetron 4 mg oral** after **20 minutes** (max. dose 8mg total)

## Oxygen Therapy

#### Notes

1. **Oxygen** is a treatment for hypoxaemia, not breathlessness. Where pulse oximetry is available and the NEPT employee is accredited to do so, the Oxygen Therapy Protocol should be used to titrate **oxygen** administration to the patient’s requirements.
2. Excessive **oxygen** administration may be detrimental in some acute conditions (e.g. acute myocardial infarction, COPD or stroke).
3. High flow **oxygen** (e.g. 15 L) is indicated in patients with critical illnesses, including cardiac arrest, major trauma, shock, anaphylaxis and continuous seizures.
4. Pulse oximetry may be unreliable in patients with peripheral vascular disease, severe asthma, severe anaemia, cold extremities, or severe hypotension. False low readings may also occur with nail polish or dirty/infected fingernails, or L.E.D. lighting.
5. Patients with carbon monoxide poisoning will not have a reliable pulse oximetry reading. Administer maximum **oxygen** therapy for these patients irrespective of saturation reading.

#### Oxygen Therapy

**Patient presentation**

## Pain Relief

Initial management:

* **Oxygen** via non-rebreather mask (10-15L/min) or face mask if unavailable
* Consider BVM ventilation with **100% oxygen** if poor or nil respiratory effort

Once patient is haemodynamically stable and has reliable oximetry reading:

* Aim for SpO2 92-96%

Critical illnesses include: cardiac arrest, major trauma, shock, anaphylaxis, continuous seizure

**SpO2 < 85% or critical illness**

* **Oxygen** via nasal prongs (2-4 L/min) or face mask (5-10 L/min)
* Aim for SpO2 92-96%

**SpO2 85-91%**

* **Oxygen** via nasal prongs (2-4 L/min) or face mask (5-10 L/min)
* Aim for SpO2 88-92%

If patient deteriorates or SpO2 <88%:

* Manage as per SpO2 <85%

If known to be normal for patient e.g. history of COPD, neuromuscular disorders, morbid obesity, cystic fibrosis, bronchiectasis, severe kyphoscoliosis

**Chronic hypoxaemia**

No oxygen required

**SpO2 ≥ 92%**

* Acute or chronic?
* Respiratory and perfusion status

**Assess**

* SpO2 <92% on pulse oximetry
* Breathing difficulty – manage as per **Breathing Difficulties protocol**

**Not suitable for NEPT**

* Patient >60 years with sudden onset (<24 hours) and severe abdominal pain where a dissecting aortic aneurysm has not been excluded by a medical practitioner
* Patient with an undiagnosed headache where the treating medical practitioner suspects acute intracranial pathology

#### Notes

1. Consider non-pharmacological analgesic options, e.g. ice-packs, splinting, patient position, heat-packs or distraction therapy
2. **Paracetamol** is an effective analgesic for mild-moderate pain and may be considered where a patient reports a pain score of <4 and requests analgesia. Note that **paracetamol** has a longer onset and duration of action than **methoxyflurane**.
3. **Methoxyflurane** is authorised for use by NEPT if:
   * Pain is moderate to severe.
   * Patient is conscious and able to self-administer the **methoxyflurane**.
   * The maximum dose of **methoxyflurane** for any one patient is 6 ml per 24-hour period. Under no circumstances is this to be exceeded.
   * Ensure there is adequate ventilation in the treatment space.
   * May be administered in combination with **paracetamol.**

#### Pain Relief

#### 

**Patient presentation**

* Complaint of pain

**Assess**

* DOLOR
* Pain rating

**Pain score ≥ 4**

**Pain score < 4**

* **Methoxyflurane** 3 mL via inhaler

If patient requests analgesia

* Age <60 and weight >60kg: **paracetamol 1000 mg oral** (single dose)
* Age ≥60 or weight ≤60kg: **paracetamol 500 mg oral** (single dose)

** If pain is still unimproved and not tolerated despite management, notify the communications centre. For non-urgent enquiries this does not need to be the AV communications centre. Provide situation report and commence transport / rendezvous as appropriate**

**Pain score remains < 4**

**Pain score remains ≥ 4**

If prolonged transport and pain is not tolerable, treat as Pain score ≥ 4

* Repeat m**ethoxyflurane** 3 mL via inhaler (maximum 6 mL in 24 hours)

#### Palliative care/Advance care directives

#### Notes:

1. The Department of Health and Human Services supports a person’s right to articulate wishes for medical treatment and care in advance through any of the following;

* appointment of a medical decision maker
* documentation of wishes in an advance care plan or directive
* refusal of treatment certificate.

1. NEPT providers and staff may provide or withhold treatment based on an advance care directive if the documentation is sighted or accepted in good faith by those present at the scene that the documentation exists. NEPT staff must include details of advance care directive discussions and decisions in their documentation.
2. The NEPT sector in Victoria plays an important role in the continuum of care of Victorians and should consider the key principle of advance care directive strategies including:

* advance care directive as part of ‘usual care’
* advance care directive as ‘everyone’s business’

1. For home to hospital transfers, documentation of an ACD, ROTC or an NFR (or equivalent) that states that cardiopulmonary resuscitation be withheld, may be sighted, or it may be accepted in good faith by those present at the scene that this document exists. If copies of such documentation are available, they should be included in the NEPT patient care record. If documentation is not available, the NEPT health professionals must record full details of the information given to them and by whom regarding the patient’s wishes. If a substitute decision maker is nominated—usually a person with enduring power of attorney (medical treatment)—this person’s details should also be noted in the NEPT patient care record. If there is any doubt about the patient’s wishes for CPR, the default position is to treat, as necessary.
2. For inter-hospital transfer or hospital-to-home transfer, copies of relevant documentation must be provided by the sending health service and included in the NEPT patient care record. Where a copy is not obtained, the NEPT crew must advise the sending health service that they will treat the patient should it be necessary.
3. Regardless of time critical criteria (including abnormal vital signs), palliative care patients with a pre-existing terminal illness and not for advanced life support, may still be transported by NEPT, provided a not for resuscitation order (or equivalent), advance care directive or refusal of treatment certificate is sighted by the NEPT staff. If such documentation is not sighted, then NEPT staff must advise the sending health service they will treat the patient with usual care should it be necessary.

**NB:** For inter-hospital transfer or hospital-to-home transfer, copies of the relevant documentation must be provided by the sending health service and included in the NEPT patient care record. Where a copy is not obtained, the NEPT crew must advise the sending health service that they will treat the patient should it be necessary. For home-to-hospital transfers, documentation of a not for resuscitation (or equivalent), advance care directive or refusal of treatment certificate that states that cardiopulmonary resuscitation be withheld, may be sighted, or it may be accepted in good faith by those present at the scene that this document exists. If copies of such documentation are available, they must be included in the NEPT patient care record.

1. If the patient unexpectedly dies in transit (and where a decision has been made and documented not to treat/resuscitate), contact the AV Clinician who will assist with advice on patient care and transport destination.
2. NEPT staff, other than Registered Nurse Division 1 or medical practitioner, are unable to verify life is extinct.

## Stroke

**Not suitable for NEPT**

* Acute onset of stroke symptoms within 4.5 hours (unless a medical practitioner has evaluated the patient and determined that they are suitable for NEPT).

**Notes:**

1. Acute stroke is a time critical medical emergency and patient outcomes are directly related to the speed of treatment. Where acute onset of stroke symptoms is within 4.5 hours, notify AV Clinician urgently to discuss case.
2. Symptom onset time is taken from when the patient was last seen symptom-free. If the patient wakes up with symptoms, then the time is taken from when they were last witnessed well (e.g. bedtime).

If a NEPT provider is uncertain whether a patient with stroke symptoms is more suitable to be transported by emergency ambulance, this should be discussed with the AV Clinician and/or the registered medical practitioner who has evaluated the patient. If there will be a significant delay for emergency ambulance response to a patient with acute stroke symptoms, the NEPT provider should discuss the most appropriate transport option and destination.

StrokePrinciples of Trauma Care

* Monitor airway, breathing and circulation
* Support affected limbs
* If BGL <4 mmol/L, treat as per **Hypoglycaemia** **protocol**
* Transport

** If patient condition deteriorates during transport, notify ambulance communications**

* Symptom onset time

**Assess**

**Patient presentation**

* Symptoms of stroke

**Management**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment** |  | **Normal** | **Abnormal** |
| **Facial droop** | Pt shows teeth or smiles | Both sides of face move equally | One side of face does not move as well as other |
| **Speech** | Pt repeats “You can’t teach an old dog new tricks” | Pt says the correct words with no slurring | Pt slurs words, says the wrong words or is unable to speak or understand |
| **Hand grip** | Test as for GCS | Equal grip | Unilateral weakness |
| **Blood glucose level** | Test for BGL (if available) | ≥ 4 mmol/L | < 4 mmol/L |

**Assess – Melbourne Ambulance Stroke Screen**

**Not suitable for NEPT**

* Patient meets any criteria for major trauma (vital signs, specific injuries or high-risk criteria) unless assessed as suitable for NEPT transport by a medical practitioner and after consultation with ARV
* ARV patients (unless specifically approved by consulting retrieval physician)
* Undiagnosed spinal cord compression symptoms where the treating medical practitioner suspects spinal cord injury (unless transport by NEPT specifically approved)

**Notes**

1. In cases of clear traumatic cardiac arrest, haemorrhage control and managing correctable causes become the priority prior to commencing chest compressions. This will include pelvic splinting in the setting of significant blunt pelvic injury.
2. For any potential major trauma patient, hypothermia is a significant concern. Preventing heat loss is an important priority.
3. Mechanism of injury is a significant risk factor indicator. Understanding how the incident occurred is key to understanding care urgency and priorities.
4. If a patient has suffered a blunt head injury with or without loss of consciousness and now presents with GCS 13-15 and any of the following:
   * any loss of consciousness >5 minutes
   * skull fracture - depressed, open or base of skull
   * vomiting more than once
   * neurological deficit (loss of function or sensation)
   * any reported seizure activity

his should be considered a significant blunt head injury meeting the potential major trauma criteria and AV attendance should be requested.

1. Spinal immobilisation is indicated if the patient:
   * Meets major trauma criteria  
     OR
   * Has a mechanism of injury suspected to cause spinal injury (such as fall with head strike) AND any of the following:
     1. Age > 55 years
     2. History of bone disease (e.g. osteoporosis, osteoarthritis, rheumatoid arthritis) or muscular weakness disease (muscular dystrophy)
     3. Unconscious, altered conscious state or period of loss of consciousness
     4. Drug or alcohol affected
     5. Significant distracting injury (e.g. extremity fracture or dislocation)
     6. Spinal column pain/bony tenderness
     7. Neurological deficit or changes
2. Timely and effective pain management is important for long term patient outcomes. Severe trauma pain will require large analgesic doses. Consult the AV Clinician in these cases.
3. Effective splinting can reduce pain and blood loss and should be performed where possible.
4. Patients who have fallen but have no apparent injury still require thorough assessment and close monitoring.

Higher risk falls include patients:

* on anti-coagulants, e.g. warfarin, heparin, enoxaparin sodium, dabigatran, rivaroxaban
* with incomplete recall of how the fall occurred
* who have spent an extended period of time on the ground (there is no specific timeframe defined as safe/unsafe)
* who have collapsed due to an underlying medical cause

1. Burns cases hold unique assessment and management challenges. Cooling the burn is a care priority, however keep the patient warm. Monitor for developing airway compromise.
2. In the case of a multiple casualty situation, or in circumstances that result in activation of the State Health Emergency Response Plan, NEPT resources may be responded to assist, and directed by a Health Commander to treat and transport patients that fall outside their normal acuity levels.

## Principles of Trauma Care

* Fall or traumatic injury

**Patient presentation**

# Section Three: Paediatric Clinical Protocols

**Assess**

** If patient condition meets Major Trauma criteria, activate emergency ambulance response**

* Mechanism of injury
* Secondary survey

1. Head to toe assessment e.g. PILSDUCT
2. Neurological assessment of limb injuries (colour, temperature, movement, sensation)

* Pain assessment e.g. DOLOR
* Determine if patient meets time-critical criteria

**Initial management**

* Control external haemorrhage – this may include use of pressure dressings, arterial tourniquets and/or haemostatic dressings
* Splint suspected pelvic injuries
* Apply cervical collar and provide spinal immobilisation if indicated (see Notes)

**Specific management**

* Prevent heat loss
* Burns – cool burns with up to 20 minutes of cool running water, keep patient warm
* Wounds - open wounds should be irrigated with sterile water or normal saline and covered with an appropriate dressing
* Fractures - realign and splint in as close to normal position as possible
* Manage pain as per **Pain Relief** protocol

## Cardiac Arrest (Paediatric)

**Notes:**

1. This protocol should be used for cardiac arrest in patients <12 years of age. Children 12≥ years old can be managed according to the Adult protocol
2. The basic principles of paediatric life support are similar to those of adults. Effective airway control and adequate ventilation with oxygen supplementation is the keystone of paediatric resuscitation.
3. Some procedures need to be adapted for differences in paediatric anatomy. Small children, infants and newborns may need a small amount of padding beneath the shoulders to keep the occiput from causing too much flexion of the head and compressing the neck. Noisy breathing, stridor or wheeze and/or neck and chest soft tissue retraction on inspiration are signs of significant partial airway obstruction.
4. If spontaneous ventilation is not present, an appropriate size oropharyngeal airway should be inserted and assisted ventilation should be commenced immediately using supplemental oxygen. Ventilations should be delivered with sufficient volume to cause rise and fall of the chest.
5. CPR rates and ratios are shown below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Age** | **CPR ratio** | **Compression Rate** | **Technique** |
| Newborn (birth up to 24 hours) | 3 compressions : 1 ventilation | 90 compressions per minute with 0.5 second pause for ventilation | Two finger or two thumbs  One third of the depth of chest |
| Infants (1 day up to 1 year) | 30 compressions : 2 ventilations (one rescuer)  15 compressions : 2 ventilations (two rescuers) | 100-120 compressions per minute | Two finger or two thumbs  One third of the depth of chest |
| Small and Medium Child (1 to 11 years) | 30 compressions : 2 ventilations (one rescuer)  15 compressions : 2 ventilations (two rescuers) | 100-120 compressions per minute | One hand or two hands  One third of the depth of chest |

1. Automatic or semi-automatic defibrillators can be used in children if the appropriate settings and attachments are available. If not accredited in manual defibrillation and an automatic or semi-automatic defibrillator without paediatric settings/attachments is the only option, it should be applied and utilized until further assistance arrives. If defibrillation is required, delivering a higher joulage than the standard is less harmful than failing to defibrillate.
2. If accredited in manual defibrillation, 4 joules per kg should be delivered rounded up to the nearest setting.

#### Cardiac Arrest (Paediatric)

## Anaphylaxis (Paediatric)

* **CPR 30 : 2** **for 2 minutes**
* Check for signs of life and follow instructions from defibrillator

** Continue to provide updates and situation reports to AV communications**

** Activate emergency ambulance**

**Continuing management**

* Position supine with neutral head position (see Notes)
* Immediately commence chest compressions
* Attach defibrillator – use automatic / semi-automatic mode if appropriate according to defibrillator instructions
* **Defibrillate** **4 joules/kg** if shockable rhythm / shock advised

**Initial management**

* Unconscious and not breathing normally

**Patient presentation**

* **Ventilate at appropriate rate for child** via BVM
* Transport or rendezvous with emergency ambulance as directed by AV communications
* **Defibrillate 4 joules/kg** if shock advised
* Continue **CPR**

**Signs of life absent**

**Signs of life present**

#### Notes

1. Anaphylaxis is a life-threatening medical condition. If anaphylaxis is suspected there must be no delay in administration of **adrenaline** and activation of emergency ambulance.
2. Common triggers include foods, insect bites/stings, medications. A patient may have no prior history of anaphylactic reactions or may be unaware that they have been exposed to an antigen.
3. All suspected or reported anaphylaxis patients **MUST** be transported to hospital for observation, even if they have been treated prior to NEPT arrival and are now showing no signs or symptoms.
4. Standing or walking a patient with suspected anaphylaxis can result in a profound reduction in blood pressure and collapse. Position the patient supine as soon as possible and adjust the head height based on the patients’ blood pressure.
5. This CPP refers to **adrenaline** auto-injectors. Whilst national anaphylaxis guidelines refer to an adult dose of 500 mcg IM, most adult auto-injectors will deliver a 300mcg dose. This is an acceptable dose and the key point is that if a patient meets the criteria for anaphylaxis, they are treated with **adrenaline** in a timely manner.
6. Where NEPT staff are authorised to draw up and administer medication from an ampoule, **adrenaline** may be used from a 1:1000 (1 mL) ampoule. The recommended paediatric dose is 10 mcg/kg (maximum 500mcg) IM up to the age of 11 years.
7. If a patient has an existing anaphylaxis plan, this should be followed in conjunction with the CPP. If a patient meets the clinical criteria for **adrenaline** administration, this should remain the priority treatment.
8. All patients who have received adrenaline for possible anaphylaxis must be transported for follow up medical assessment, even if symptoms have seemingly resolved.

#### Anaphylaxis (Paediatric)

**Patient presentation**

# Section Four: Pharmacology

** Provide situation report and commence transport / rendezvous as appropriate**

* Child > 5 years / 20kg
  + **Adrenaline 300 mcg auto-injector**
* Child ≤ 5 years / 20 kg
  + **Adrenaline 150 mcg auto-injector**
* **Oxygen 10-15 L/min** via non-rebreather mask (or face mask)
* Where possible, do not allow patient to stand or walk
* If inadequate perfusion, position patient supine with legs elevated
* If wheeze present, treat as per **Breathing Difficulties protocol**
* Repeat **Adrenaline auto-injector (same as original dose) IM after 5 minutes** if no improvement or deterioration
* If patient loses consciousness and is not breathing normally, manage as per **Cardiac Arrest protocol**
* **All patients who have received adrenaline for possible anaphylaxis must be transported for follow up medical assessment, even if symptoms have seemingly resolved.**

**Management**

Anaphylaxis is likely if **either** of the below conditions are met:

* Signs / symptoms from **two or more** of the groups below (with or without exposure to antigen)
  + **R** Respiratory distress (SOB, wheeze, cough, stridor)
  + **A** Abdominal symptoms (nausea, vomiting, diarrhoea, abdo pain / cramps)
  + **S** Skin / mucosal symptoms (hives, welts, itch, flushing, angioedema)
  + **H** Hypotension (or altered conscious state)

**OR**

* Hypotension only (relative to age) following confirmed exposure to known antigen

**Assess**

* Sudden onset of signs and symptoms of anaphylaxis (see below)
* Patient **may or may not** have a history of allergy or anaphylaxis

** Activate emergency ambulance response**

The following section describes the pharmacology of the medications contained in the CPPs.

These pages contain information about the medications only. Please see visual guides for doses depending on the issue.

For further information on the medications, refer to MIMS or other pharmaceutical reference guide.

Always check if the patient has had the medication within the last 24 hours and administer accordingly.

## Adrenaline

|  |  |
| --- | --- |
| **Action** | Vasoconstrictor |
| **Indications for use** | Anaphylaxis  Cardiac arrest |
| **Presentation** | 1mg adrenaline (1ml of 1:1000) glass vial  1mg adrenaline (10ml of 1:10,000) glass vial  EpiPen autoinjector (300 mcg)  EpiPen Junior autoinjector (150 mcg) |
| **Contraindications** | Contraindications are relative as this product is intended for use in life threatening emergencies. Please refer to MIMS for further information. |
| **Interactions** | Adrenaline is physically incompatible with alkalis, metals, oxidising agents, sodium warfarin, hyaluronidase and many other drugs  There is an increased the risk of hypotension and tachycardia with α-blockers  Severe hypertension and bradycardia may occur with nonselective β-blocking drugs |
| **Precautions** | Contraindications are relative as this product is intended for use in life threatening emergencies. Please refer to MIMS for further information. |
| **Side Effects** | Tachycardia  Hypertension  Dilated pupils  Feeling of anxiety/palpitations |
| **Special notes** | The ideal location for IM injection is the mid-outer thigh. Other suitable sites include the mid line upper arm (deltoid)  All patients receiving adrenaline for possible anaphylaxis are to be transported to an emergency department.  IM adrenaline has a short duration and patients must be closely monitored for reoccurrence of symptoms. |

**Amiodarone**

|  |  |
| --- | --- |
| **Action** | Class III antiarrhythmic |
| **Indications for use** | Ventricular fibrillation  Pulseless ventricular tachycardia refractory to defibrillation |
| **Presentation** | 150mg in 3ml vials |
| **Contraindications** | Contraindications are relative as this product is intended for use in cardiac emergencies. Please refer to MIMS for further  information. |
| **Interactions** | Some antiarrhythmic agents  Non-antiarrhythmic agents  Cyclosporin  Phenytoin  Warfarin and other anticoagulant agents |
| **Precautions** | Contraindications are relative as this product is intended for use in cardiac emergencies. Please refer to MIMS for further information. |
| **Side Effects** | Hypotension  Bradycardia |
| **Special notes** | Amiodarone is only to be administered by trained and endorsed staff. |

## Aspirin

|  |  |
| --- | --- |
| **Action** | Analgesic, anti-inflammatory, antipyretic |
| **Indications for use** | Chest pain/discomfort |
| **Presentation** | 300mg tablets |
| **Contraindications** | Severe hepatic or renal disease  Haemophilia or other bleeding disorders  Erosive gastritis or peptic ulcer |
| **Interactions** | Monoamine oxidase inhibitors |
| **Precautions** | History of peptic ulcer  Asthma  Patients on anticoagulants (e.g. warfarin)  Other anti-inflammatories |
| **Side Effects** | Heartburn  Nausea  Gastrointestinal bleeding  Increased bleeding time  Hypersensitivity reactions |
| **Special notes** | Aspirin is not be administered by NEPT for any condition other than chest pain/discomfort of a cardiac nature. |

## Glucagon

|  |  |
| --- | --- |
| **Action** | Raises blood glucose level |
| **Indications for use** | Diabetic hypoglycaemia (low blood sugar) < 4 mmol/L and altered conscious state |
| **Presentation** | Vial with 1mg of powder for injection (and if in kit, 1 pre-filled syringe with sterile water for reconstitution) |
| **Contraindications** | Pheochromocytoma (glucagon can provoke a release of catecholamine resulting in sudden and severe hypertension)  Insulinoma (after an initial rise in blood glucose, hypoglycaemia may be exacerbated by glucagon induced insulin secretion)  Glucagonoma |
| **Interactions** | Patients taking beta-blockers might be expected to have a greater increase in both pulse and blood pressure  Indomethacin. Glucagon may lose its ability to raise blood glucose or paradoxically may even produce hypoglycaemia |
| **Precautions** | Hepatic glycogen is required for glucagon to be of benefit in hypoglycaemia. Glucagon will have little or no effect when the patient is fasting or is suffering from adrenal insufficiency, chronic hypoglycaemia or alcohol induced hypoglycaemia. |
| **Side Effects** | Nil significant |
| **Special notes** | Not all patients will respond to glucagon and it is important to ensure early transport/activation of paramedic back-up in all cases of hypoglycaemia.  Intramuscular times:   * Onset: 3-5 minutes * Duration: 12-25 minutes |

## 

## Glucose Paste

|  |  |
| --- | --- |
| **Action** | Oral glucose gel |
| **Indications for use** | Diabetic hypoglycaemia (low blood sugar) with altered RBG < 4 mmol/L and altered conscious state but able to cooperate. |
| **Presentation** | 37.5g tube |
| **Contraindications** | Inability to swallow due to altered conscious state |
| **Interactions** | None of significance |
| **Precautions** | Nil of significance for the above indication |
| **Side Effects** | Nil significant |
| **Special notes** | Not all patients will respond to glucose paste and it is important to ensure early transport/activation of paramedic back-up in all cases of hypoglycaemia. |

## Glyceryl Trinitrate

|  |  |
| --- | --- |
| **Action** | Nitrate vasodilator |
| **Indications for use** | Cardiac chest pain/dis comfort |
| **Presentation** | 600 mcg tablets absorbed via buccal mucosa via sublingual administration |
| **Contraindications** | Haemorrhage or head trauma  Known hypersensitivity  Systolic blood pressure < 110 mmHg  Heart rate > 150 per min or < 60 per min  Sildenafil and/or vardenafil use in the previous 24 hours or tadalafil use in the previous 48 hours  Ventricular tachycardia |
| **Interactions** | Alcohol, antihypertensives, tricyclic antidepressants, phenothiazines, levodopa, opioid analgesics, hydralazine, calcium channel blocking agents, minoxidil and prazosin |
| **Precautions** | No previous administration of GTN  Elderly or frail patients |
| **Side Effects** | Flushing of face and neck  Hypotension  Dizziness  Nausea and vomiting  Tachycardia  Headache  Syncope |
| **Special notes** | GTN is susceptible to heat and moisture. Tablets must be stored tightly sealed in their original container  Avoid administering patient’s own medication as it may not have been stored in optimal conditions  Sublingual/buccal effects   * Onset: 30 sec–2 minutes * Peak: 3–5 minutes * Duration: 15–30 minutes. |

## Ipratropium Bromide

|  |  |
| --- | --- |
| **Action** | Anticholinergic bronchodilator |
| **Indications for use** | For maintenance treatment of bronchospasm associated with asthma and chronic pulmonary disease |
| **Presentation** | Metered inhaler pump  Single dose units of 250 mcg in 1ml (clear plastic vials) |
| **Contraindications** | Known hypersensitivity to atropine or its derivatives |
| **Interactions** | Nil significant |
| **Precautions** | Paradoxical bronchospasm  Glaucoma |
| **Side Effects** | Headache  Dizziness  Gastrointestinal disorders  Dry mouth  Acute angle closure glaucoma secondary to direct eye contact (rare) |
| **Special notes** | Ipratropium bromide must be nebulised with salbutamol and is administered as a single dose only.  Avoid contact with the eyes |

## Methoxyflurane

|  |  |
| --- | --- |
| **Action** | Analgesia for stable, conscious patients |
| **Indications for use** | Emergency relief of pain |
| **Presentation** | 3ml methoxyflurane, inhaler and AC chamber |
| **Contraindications** | Decreased GFR and urine output  Renal failure  Respiratory depression  Head injury or loss of consciousness  Malignant hyperthermia  Muscular dystrophy |
| **Interactions** | Tetracyclic antibiotics |
| **Precautions** | Hepatic impairment  Renal impairment  Diabetic patients |
| **Side Effects** | Dizziness  Headache |
| **Special notes** | Analgesia commences after 8-10 breaths and lasts for approximately 3-5 minutes once discontinued  Maximum 6 ml can be given within 24-hours  If stronger analgesia is required, patient can cover dilutor hole with finger during inhalation  Continuous administration reduces time of analgesia |

## Ondansetron

|  |  |
| --- | --- |
| **Action** | Anti-emetic |
| **Indications for use** | Nausea and/or vomiting |
| **Presentation** | Wafer or tablet |
| **Contraindications** | Apomorphine |
| **Interactions** | No evidence of inhibiting metabolism of other drugs |
| **Precautions** | Hypersensitivity  Long QT-syndrome  Can increase large bowel transit time |
| **Side Effects** | Headache  Fever  Dizziness  Long QT |
| **Special notes** | Ondansetron may not be effective for all types of nausea and vomiting |

## Paracetamol

|  |  |
| --- | --- |
| **Action** | Analgesia and antipyretic |
| **Indications for use** | Pain relief |
| **Presentation** | 500mg tablets or capsules |
| **Contraindications** | Patients with a known hypersensitivity to paracetamol |
| **Interactions** | Warfarin (if prolonged regular daily use)  Paracetamol may increase chloramphenicol concentrations  Cholestyramine reduces the absorption of paracetamol if given within 1 hour of paracetamol  Paracetamol absorption is increased by substances that increase gastric emptying, e.g. metoclopramide.  Paracetamol absorption is decreased by substances that decrease gastric emptying |
| **Precautions** | Overdose may cause liver failure  Liver impairment  Hepatic dysfunction/failure  Renal impairment |
| **Side Effects** | Very rarely has side-effects |
| **Special notes** | Each tablet contains potassium sorbate as a preservative, which may cause allergic reactions. |

## 

## Salbutamol

|  |  |
| --- | --- |
| **Action** | Bronchodilator |
| **Indications for use** | Relief of bronchospasm in patients with asthma or COPD  Increased work-of-breathing, including shortness-of-breath, wheezing and/or tightness of chest |
| **Presentation** | Pressurised metered dose inhaler  Inhalation solution for nebuliser 2.5mg/2.5ml in clear plastic ampoules in a foil wrapper |
| **Contraindications** | Hypersensitivity to any of the ingredients |
| **Interactions** | Beta-adrenergic blocking drugs inhibit the bronchodilator action of salbutamol and other sympathomimetic bronchodilators |
| **Precautions** | Continue to administer oxygen 8 L/min between doses |
| **Side Effects** | Tachycardia  Palpitations  Muscle tremor |
| **Special notes** | Unused nebules remaining in the pack at the completion of a case should be disposed of.  Nebules should be stored in an environment < 30 degrees celsius.  The effectiveness of salbutamol differs between patients, so it is important to ensure early transport/activation of paramedic back-up where required. |

# Section Five: Further Information

## Handover

It is widely recognised that clinical handover efficiency and effectiveness can be improved with a standardised model of delivery. All caregivers involved in the care of the patient have a shared responsibility for ensuring effective, high-quality communication of relevant clinical information at clinical handover.When providing pre-arrival information or handing over a patient to another health care professional, patient information may be provided in a structured way using the IMIST-AMBO model. This model is detailed below. Further information is available on the [department’s website](http://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/acute-care/emergency-care/patient-transfer): http://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/acute-care/emergency-care/patient-transfer.

IMIST-AMBO model:

* **I**dentification(the patient’s name, age and gender)
* **M**echanism of injury or medical complaint (such as presenting problem, how it happened)
* **I**njuries or information related to the complaint (such as symptoms or injuries)
* **S**igns (vital signs such as HR, RR, BP, GCS, BGL)
* **T**reatment and trends (such as treatment administered and patient response to treatment, what stage of treatment the patient is at, trend in vital signs)
* **A**llergies
* **M**edications (patient’s regular medications)
* **B**ackground history (such as patient’s past medical history)
* **O**ther information (such as social situation, relatives present, scene of health event)

## Long duration cases

The nature of the NEPT sector is that some patient transfers can be over long distance or take extensive periods of time (e.g. distance, traffic delays, time waiting at health services). An area of risk is when patients’ transition between providers or transportation platforms– in these settings the cumulative total transfer times can be very large. It is important to the quality of the patient care and their experience that these extended time periods do not interfere with the wellbeing of the individual. It is therefore an expectation of all providers who have patients in their care to ensure that the basic activities of daily living are reasonably catered for– toileting, hydration, nutrition and pressure area care/position changes. For ambulant patients it may be appropriate to insert mobility breaks into extended transport road journeys.

## Neonatal transport incubator

Some NEPT contractors work closely with the Victorian Paediatric Infant Perinatal Emergency Retrieval (PIPER) service. On occasions this service engages NEPT providers to transport neonates using a transport incubator cot. The incubator available in Victoria and strategically stored in ‘host’ hospitals around the state is the V808 Transport Incubator.

The incubators can be transported by NEPT without having PIPER on board where the case has been assessed by PIPER as being suitable. Under the PIPER guidelines, the child must meet a series of criteria (as assessed by PIPER) on a case-by-case basis to be considered for this type of transport. In broad terms, the child will not be unwell in these cases.

Where the patient is being transferred from a higher-level service to lower-level service (i.e. transfer down), the acuity level of care offered by NEPT should be considered medium or above. The load format should be a single stretcher vehicle however, a double-stretcher vehicle may be considered if the infant can be visualised AND consultation has occurred with PIPER prior to loading.

Transfers from a lower-level service to a higher-level service (i.e. transfer up) are considered to be emergency ambulance cases. These cases may be transported by NEPT as a high-acuity case using high acuity transport service (HATS) where these providers are available to meet the timeframe requirements. This is assessed and triaged by PIPER in negotiation with the transport service provider. A single stretcher vehicle is required in these cases.

Support material for the incubators (including incubator host locations) can be accessed from the Royal Children’s Hospital website: <https://www.rch.org.au/piper/guidelines/Statewide_incubator_documents/>

## Mnemonics table

|  |  |
| --- | --- |
| **Area** | **Mnemonics** |
| **Signs & symptoms of a fracture** | **P**ain  **I**rregularity  **L**oss of movement or power  **S**welling  **D**eformity  **U**nnatural movement  **C**repitus  **T**enderness |
| **Treatment of fracture** | **F**ix  **R**eassure  **A**fford limb support  **C**over any wounds  **T**ry for natural position  **U**se appropriate splint  **R**eact to haemorrhage  **E**very occasion suspect fracture  **S**hock – Treat & manage |
| **Pain assessment** | **D**escription  **O**nset  **L**ocation  **O**ther symptoms  **R**elief |
| **Situation Report** | **S**ex  **A**ge  **D**escription  **I**njuries  **E**stimated time of arrival (ETA) |
| **History and Secondary Survey** | **A**llergies  **M**edications (current)  **P**ast Medical History  **L**ast Meal  **E**vent that prompted the call for an ambulance |
| **Pre-Arrival Notification** | **M**echanism of Injury/main presenting problem  **I**llness or Injury  **S**igns & Symptoms, including vital signs survey  **T**reatment provided and response to treatment |
| **Report back on uncontrolled situations in major disasters or incidents** | **E**xact location  **T**ype of incident (e.g. traffic accident, chemical/biological/radiological [CBR], HAZMAT, etc)  **H**azards at scene (e.g. power lines, vapour, spillage etc.)  **A**ccess and egress  **N**umber of casualties (walking, stretcher, deceased etc.)  **E**mergency services at scene required (e.g. additional ambulance resources and other agencies) |

## Scope of NEPT services

Licensed NEPT providers deliver a range of services including transfers to and from health services or day procedure centres and home or residential care services; inter-hospital transfers (IHT); and public event duties. There may be a requirement under the State Health Emergency Response Plan (SHERP) for deployment at a major incident or disaster. These protocols are applicable to each of the types of services provided by licensed NEPT, except where described in exclusions below.

#### Suitability for the use of NEPT services

The suitability of NEPT to transport a patient is dependent on five factors:

1. *Authority to practice*

The *Non-Emergency Patient Transport Regulations 2016* set out the qualifications for health professionals employed by NEPT services as well as the categories of health professionals that are needed to transport (by road or air) depending on the acuity classifications: low, medium and high (see Section 5).

In addition, these clinical practice protocols describe the different levels of authorised practice across a range of symptoms, assessments and intervention for the different types of NEPT health professionals. These are set out in Section 3.

1. *Time critical nature of the condition*

The *Non-Emergency Patient Transport Regulations 2016* refer to patients whose ‘condition is time critical’ or whose ‘condition is likely to become time critical during transport’ as not suitable for NEPT.

To provide further information to assist decisions regarding patients that are ‘time critical’, these protocols identify a range of symptoms that are time critical along with a range of symptoms that are not considered time critical regarding a patient’s suitability for transport by licensed NEPT providers. These are set out in Section 4.

1. *Patient acuity*

*The Non-Emergency Patient Transport Regulations 2016* set out the classes of transport service based on the acuity of the patient and the type of transport (road or air). These include a description of the patient characteristics for low, medium and high acuity.

All levels of acuity may be transported by NEPT subject to the provisions of the regulations. To provide further information to assist decisions regarding acuity, these protocols describe further features and examples of acuity. These are set out in Section 5.

1. *Public Event Duties*

Licensed NEPT providers, with transport capability, may provide first aid to any ill or injured person at a public event. In addition, the use of medications outlined in these protocols is allowed.

When a patient requires transport, a registered medical practitioner, who has physically assessed the patient, may determine the most suitable resource for transport. Where a registered medical practitioner is not in attendance, the licensed NEPT provider will require advice from Ambulance Victoria (AV) communications (by phoning 000) regarding the most suitable transport.

5. *Major Incidents and the State Health Emergency Response Plan*

In cases where a licensed NEPT provider has been deployed to provide services as part of the State Health Emergency Response Plan (SHERP), the licensed NEPT provider may facilitate transport of any patient (including high-risk and/or time critical patients) to hospital or receiving location as directed by the SHERP Health Commander. The deployment of NEPT services as part of SHERP may only be authorised by the SHERP Health Commander (Department of Health, 2013).

SHERP (Department of Health, 2013) outlines the arrangements for coordinating the health response to emergency incidents that go beyond day-to-day business arrangements. In these situations, there may be insufficient emergency ambulance resources immediately available to provide transport to hospital or other designated receiving location.

#### Exclusions to the use of NEPT services

The following specified conditions require transfer by emergency ambulance (regardless of the recommendation of a registered medical practitioner):

* expected requirement for a lights or sirens (Code 1) transport
* A provider must not transport a patient if the patient's condition is time critical or is likely to become time critical during the transport as described in the *Non-Emergency Patient Transport Regulations 2016.*

#### Change of patient condition before or during transfer

Despite appropriate triage at the point of call, unexpected patient deterioration may have occurred during the time between referral and arrival of NEPT. If any clinical criteria are present on arrival that indicate that the patient should be regarded as a high-risk time critical patient, then an immediate referral to AV communications (by phoning 000) must be made for advice. In the absence of appropriate medical care and/or interventions, should the patient require an emergency ambulance, NEPT health professionals are to commence and maintain applicable emergency care, within their scope of NEPT practice, while waiting for ambulance arrival.

If any high-risk time critical criteria develop during transport, NEPT must consult with AV communications (by phoning 000 or via AV radio) and may be directed to either proceed to the nearest appropriate health service, or rendezvous with an emergency ambulance at a designated point. Furthermore, if the acuity level changes during transfer that would necessitate a change of skills required, then the NEPT employee should contact the licensed NEPT provider to seek advice.

The Regulations require that all NEPT providers ensure staffing of vehicles is appropriate to the clinical needs of the patients. In the event that an NEPT professional believes the patient’s needs are beyond the capabilities of the attending crew (for example, a change in acuity level), contact should be made with the NEPT provider to seek advice.

#### Unplanned attendance at patient incident

In the normal conduct of NEPT activity, it is possible a NEPT provider will come across or be called for assistance. If the situation may require an emergency ambulance response, NEPT must contact AV communications (by phoning 000 or via AV radio) and provide a situation report, including any location details that will facilitate emergency ambulance attendance. An NEPT patient care record is required for such unplanned attendances.

#### Non-transport by NEPT providers

NEPT crews are not endorsed to independently decide that a patient is suitable for non-transport. If a patient refuses, or a crew considers a patient suitable for a non-transport care plan, the following must occur:

* two sets of observations should be documented at least 10 minutes apart, to identify any potential for short-term deterioration;
* the authoring requester must be contacted to discuss the circumstances, confirm that non-transport is appropriate and outline what further care the patient is being offered;
* the patient left with clear instructions as to when and who to call back, if required; and
* the discussion with the authorising requester and the instructions for the patient clearly documented on the patient care record

NOTE: The authorising requester can be the requesting hospital, medical practitioner and in the case of an NEPT provider working for and on behalf of AV, the Communications Clinician.

#### Base level of emergency care and equipment required

The *Non-Emergency Patient Transport Regulations 2016* only mandates the following equipment: a shock advisory external defibrillator, portable oxygen, suction and a bag valve mask device. The Regulations also recommend that a provider must ensure that any vehicle used to transport a patient carries all the equipment and supplies necessary to meet the patient's clinical needs for the duration of the transport.

Occasionally in rare events such as extreme weather, multiple drug overdoses, acts of terror, or multi-casualty accidents, NEPT services may need to be engaged under SHERP arrangements. Accordingly, the following vehicle equipment is mandated: two arterial trauma tourniquets, pelvic binding capability, and cervical collars.

There is a growing incidence of anaphylaxis in the Victorian population and an associated societal expectation of all health care givers to have access to adrenaline for episodes of anaphylaxis. For this reason, all NEPT providers are required to carry adrenaline (either an auto-injector (EpiPen) or adrenaline ampoules) and train all staff to recognise the signs and symptoms of anaphylaxis and administer the appropriate dose in these cases.

## **Authority to practice**

#### Health professional categories

The *Non-Emergency Patient Transport Regulations 2016* set out the requirements for health professionals of NEPT services. In addition, the Clinical practice protocols describe the different levels of authorised practice for the different types of NEPT health professionals.

The different types of NEPT health professionals include:

* ambulance transport attendant (ATA)
* patient transport officer (PTO)
* enrolled nurse (EN)/registered nurse division 2 (RN 2)
* registered nurse division 1 (RN1)
  + registered nurse division 1 with critical care qualification (RN1 CC).

Health professionals categorised as a registered nurse division 1 with a critical care qualification require experience in the intensive care unit, coronary care unit, emergency department or equivalent of a hospital within the preceding 24 months. The authorised practice for each type of health professional, applicable to the management of patients with certain types of symptoms, is described in Scope of Practice matrix.

It is the responsibility of NEPT providers to ensure that their staff have the minimum qualifications as shown in the table below. Further, providers must ensure that staff maintain registrations with any applicable state or national professional registration authority.

**Staffing qualifications**

| Classification | Minimum professional qualification |
| --- | --- |
| Patient transport officer | Certificate 3 in Non-Emergency Patient Transport\* |
| Enrolled nurse division 2 | Diploma of Nursing\* |
| Ambulance transport attendant | Diploma of Paramedical Science\* |
| Registered nurse division 1 | Bachelor of Nursing\* |
| Registered nurse division 1 critical care | Graduate Certificate in Critical Care Nursing\* |

\* or equivalent

#### Medication administration

*Scope of practice*

It is not permissible for NEPT employees to administer any fluids or medications outside their individual credentialed scope of practice, unless there has been consultation with a registered medical practitioner or the AV Clinician if the case is undertaken for and on behalf of AV or is an emergency situation. For all medications that are administered, the NEPT employee must sight the original medication order and provide a legible photocopy of the original medication order with the NEPT patient care record, or if given under consult, record the details of the consultation including name, contact number, level of credentialed practice and employer. This includes consultation with the AV Clinician.

If a patient requires or may require administration of a medication during transfer outside these protocols, then a registered nurse or registered medical practitioner escort from the sending health service is required. A registered nurse or registered medical practitioner employed by the sending health service who is escorting the patient may carry and administer any medications or perform any therapeutic procedures that are within their scope of practice in their sending health service. In addition, a registered medical practitioner employed by a Licensed NEPT provider, can obtain and use any medicine for use in the lawful practice of his/her profession (*Medications Poisons and Controlled Substances Act, 1981*).

#### Staffing requirements

The minimum staffing requirements for the variety of NEPT patient acuities and transport platforms are determined by the *Non-Emergency Patient Transport Regulations (2016)* and summarised in Appendix 2.

Table 1: Authority to practice matrix\*

NOTE: Please consider this table in light of the Scope of Practice as outlined in pages 12 – 15.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Symptom | PTO, EN, ATA/AO, RN1, RN1 CC | EN, ATA/AO, RN1, RN1 CC | RN1, RN1 CC | RN1 CC |
| **Breathing difficulty** | * Oxygen | * Salbutamol * Ipratropium Bromide |  |  |
| **Cardiac arrest** | * Semi-automatic external defibrillator |  |  |  |
| **Cardiac chest pain and monitoring** |  | * Aspirin, Methoxyflurane * Glyceryl trinitrate- sub lingual * ECG Monitoring |  | * Pacing wire |
| **Hypoglycaemia** | * Glucose paste | * Glucagon1 |  |  |
| **Pain relief** |  | * Methoxyflurane | * Analgesia2,3 |  |
| **Neurological examination** | * GCS4 |  |  |  |
| **Maintenance of medication administration** | * Narcotic infusion (subcutaneous)3 | * Intravenous (IV) Crystalloid * GTN Infusion * Heparin Infusion * Blood Products7 * IV Crystalloid with potassium added8 * Antibiotics5 | * Narcotic Infusion IV2 | * Vasoactive medications6 * Anti-arrhythmic medication infusion (amiodarone or lignocaine) |
| **Other treatments** | * Capped CVC for low acuity patients9 * PICC that is not in active use | * Total parenteral nutrition via PICC12 * Chemotherapy infusion14 | * CVC10 * ICC16 * Total parenteral nutrition via CVC12 * Insulin infusion13 * IV cannulation15 * Bladder washout | * Arterial line * Intra-aortic balloon pump11 |

*\*Practice items are read cumulatively from left to right*

*Please find corresponding in-text referencing on the following pages 79-81*

#### Interpretive notes for Table 1

1. Selective authorisation – pre-existing annual competency.
2. An IV infusion of an analgesic (by IV pump or patient controlled analgesia device) may be maintained during transport provided that:

* the infusion consists of a narcotic, with or without ketamine
* the patient has been clinically stable on the infusion for at least one hour prior to transport
* for all medications that are administered, the NEPT employee must sight the original medication order, in addition to providing a legible photocopy of the original medication order in the NEPT patient care record
* the medication order includes the amount of medication(s) added to a volume and type of fluid, and clinical parameters for the withholding or cessation of the infusion
* for IV pump infusions, the infusion dose range must be prescribed and may be adjusted according to patient need. No bolus dose may be given during transport.

1. A subcutaneous infusion of an analgesic may be maintained during transport by all NEPT staff provided that:

* the patient has been clinically stable on the infusion for at least one hour prior to transport
* there is no expectation that the licensed NEPT provider will be required to adjust the dose of the medication or change the syringe or IV infusion flask.

1. PTOs are able to use the GCS to assess conscious state when they have been assessed as competent in the use of this tool by a Registered Training Organisation or through in-service training or competency assessment by the Licensed NEPT provider that employs them.
2. The administration of an antibiotic is only permissible if:

* the transport is prolonged, and it is not feasible or medically appropriate to administer the antibiotic prior to or following the transport
* for all medications that are administered, the NEPT employee must sight the original medication order, in addition to providing a legible photocopy of the original medication order in the NEPT patient care record
* the medication order includes the dose of the medication, the rate of administration, and the volume and type of diluent (if needed)
* the antibiotic has been administered within the preceding 24 hours without adverse effect.

1. The administration of vasoactive medications (dobutamine, adrenaline, noradrenaline, isoprenaline) is only permissible if:

* the patient has been clinically stable on the infusion for at least one hour prior to transport
* for all medications that are administered, the NEPT employee must sight the original medication order, in addition to providing a legible photocopy of the original medication order in the NEPT patient care record
* the medication order includes the amount of vasoactive medication added to a volume and type of fluid, the range of rate of administration, and the target blood pressure.

1. The administration of blood products (packed cells, fresh frozen plasma or platelets) is only permissible if:

* the indication for packed red cells is chronic anaemia, with no evidence of acute blood loss or hypotension (<100 mmHg) or tachycardia (>100 bpm); and
* the patient has been stabilised on the blood product infusion for at least 30 minutes prior to transport
* for all medications that are administered, the NEPT employee must sight the original medication order, in addition to providing a legible photocopy of the original medication order in the NEPT patient care record
* the medication order includes the blood product, and rate of infusion; and
* the cross-match form is sighted by the licensed NEPT provider, and the identification number of the blood product is noted on the NEPT patient care record; and
* no new bag of any blood product may be commenced during transport; and
* at the conclusion of the infusion, the line may be flushed with normal saline (supplied by the sending hospital) at a rate specified by the sending registered medical practitioner; and
* infusions of colloid (such as albumin or gelatin) must be replaced with crystalloid (without additives) prior to transport.

1. Any IV infusion with additives requires administration via a pump device (note: Hartmann’s solution contains potassium, but in physiological concentration, and therefore does not need a pump device).
2. The transport of patients with a CVC, who otherwise meet the criteria of low acuity are able to be transported as low acuity. Catheters shall not be in active use during transport and be capped, locked and secured. A PICC or femoral vein catheter line has minimal risk of air embolism and may therefore be regarded as a peripheral venous catheter.
3. There is a risk of air embolism if disconnection of a CVC in active use occurs, therefore a RN1 must supervise such a patient.
4. An intra-aortic balloon pump must be supervised by either an appropriate medical perfusionist or RN1 CC nurse (who has current (annual) competency in the make and model of the balloon pump being used), and a registered medical practitioner.
5. Total parenteral nutrition is administered either via a CVC or PICC. In either case, the solution must be administered using a pump device. The rate of infusion must not be changed during transport.
6. The administration of insulin by infusion is only permissible if:

• the patient has been clinically stable on the infusion for at least one hour prior to transport

* for all medications that are administered, the NEPT employee must sight the original medication order, in addition to providing a legible photocopy of the original medication order in the NEPT patient care record
* the medication order includes the amount of insulin added to a volume and type of fluid and the rate of administration

• a glucometer (or similar device) is available at all times during the transport to enable measurement of blood sugar, along with the availability of both glucose paste and glucagon.

1. An infusion of chemotherapy delivered via an ambulatory pump or equivalent, which is low risk of potential complications, may be transported by all staff levels provided there is no expectation of any management of the infusion by NEPT staff. The NEPT vehicle must have a cytotoxic waste spill kit. Staff should have annual competency training on the management of spills of either agent or body fluids that contain cytotoxic agents.
2. If deemed clinically necessary, an RN1 with current competency in IV cannulation may replace an existing IV cannula that has occluded during transport. In the event of failed attempts proper consideration must be given to the need for the cannula, patient comfort and the preservation of viable cannulation sites.
3. Prior to transport, a chest x-ray must be performed following insertion of ICC to confirm correct placement of tube.

## Time critical patients

The *Non-Emergency Patient Transport Regulations 2016* refer to patients whose ‘condition is time critical’ or whose ‘condition is likely to become time critical during transport’ as not suitable for NEPT. To provide further information to assist decisions regarding patients that are ‘time critical’, Table 2 below identifies symptoms and characteristics of patients that are considered time critical as well as symptoms and characteristics that are not considered time critical. Health professionals who are responsible for assessing the suitability of patients for transfer by NEPT need to consider the time critical nature of the symptoms and characteristics along with other factors. Patients with time critical symptoms and characteristics are not suitable for NEPT unless specific exceptions are noted in the Table 2 below.

Furthermore, while taking into account the variety of clinical conditions and range of acuities of patients that may be serviced by licensed NEPT providers, the types of conditions described in this section are not exhaustive. It is therefore accepted that NEPT health professionals continue to use their clinical judgment (within the authority to practice of these protocols) in applying these guidelines. In addition, while the Non-Emergency Patient Transport Clinical Practice Protocols will be updated regularly, it is expected that NEPT health professionals remain up to date on changes to clinical practice and protocols, using their clinical judgment when the Non-Emergency Patient Transport Clinical Practice Protocols are no longer recognised as current best practice.

Significant pain does not necessarily make the patient time critical. Patients requiring pain relief may be transported if the pain relief required is within the authority to practice as described in Section 5 and the pain relief protocol in Section 2. Pain relief that may be required during transport needs to be documented prior to transfer including authorisation of the treating registered medical practitioner if applicable. For all medications that are administered, the NEPT employee must sight the original medication order, in addition to providing a legible photocopy of the original medication order in the NEPT patient care record.

#### Table 2: Time critical level of risk

|  |  |  |
| --- | --- | --- |
| Symptom | NOT TIME CRITICALSuitable for NEPT | TIME CRITICALNot suitable for NEPT |
| **Perfusion status**   * BP * Heart rate * Skin * Conscious state | * A patient with known chronic (>24 hours) hypotension who has no other signs of poor perfusion. * A patient with acute (<24 hours) hypotension, which is usual for the patient (e.g. after renal dialysis). * A patient with known chronic (>24 hours) bradycardia or tachycardia who has stable blood pressure. * A patient with a temporary pacing wire to treat bradycardia can be transported. | Decreased perfusion:   * BP <100 mmHg systolic * Heart rate <50 or >100 bpm   excluding those patients previously defined as medium acuity. |
| **Respiratory status**   * Rate * Appearance * Ability to speak * Noises * Skin colour * Conscious state * Heart rate | * Patient’s respiratory status is normal or has been confirmed as normal for their condition by their treating medical practitioner. For example, history of chronic obstructive pulmonary disease. * Respiratory rate and/or heart rate are borderline readings compared to normal values and the patient may appear distressed as a result of the patient’s transfer to the stretcher and/or vehicle. In this instance the borderline readings are not sustained or further deteriorating. | RR >20 or <8 breaths/min and HR > 120 bpm (AV, 2014) and one or more of the symptoms of severe respiratory distress where onset is within last 24 hours. |
| **Conscious state - GCS**   * Eye opening * Verbal response * Motor response | * Alert and oriented. * A patient with documented chronic (>24 hours) altered conscious state (e.g. severe dementia) who has no signs of acute deterioration (GCS changed by >2 points). | Acute deterioration of GCS (>2 points) in preceding 24 hours.  *Exception:* Mechanically ventilated high acuity patients with a GCS <13 who have a registered medical practitioner escort may be transported via NEPT where authorised by the treating medical practitioner. |
| **Chest pain/acute coronary syndrome** | * A patient with a suspected coronary syndrome who has post Percutaneous Coronary Intervention (PCI) inflation pain only (i.e. pain is not supported by an enzyme rise and/or ECG changes). * A patient who normally self-administers GTN for chest pain and whose pain has fully resolved within 2 hours of the onset of pain. * A patient with identified/diagnosed non-urgent chest pain. * A patient with diagnosed non-ST segment elevation myocardial infarction (NSTEMI) who has been haemodynamically stable for > 2 hours and does not require pain relief including GTN. | * A patient over the age of 20 years with chest pain which could be of cardiac cause and who still has pain after their usual medication. * A patient who has failed to re-perfuse with thrombolytic therapy and requires immediate transfer for PCI. * A patient who has undergone coronary angiography and requires transfer for immediate cardiac surgery (e.g. because of coronary artery dissection or other immediate life threat). coronary syndrome who has ischaemic chest pain within the two hours prior to transfer and where the medium risk factors are not applicable. |

|  |  |  |
| --- | --- | --- |
| Symptom | NOT TIME CRITICAL  Suitable for NEPT | TIME CRITICAL  Not suitable for NEPT |
| **Suspected stroke** | A patient whose stroke symptoms and conscious state are stable and a registered medical practitioner has evaluated the patient. | A patient with onset of acute stroke symptoms within 4.5 hours.  *Exception:* Where a registered medical practitioner has evaluated the patient and determined that the patient is stable and suitable for NEPT. |
| **Headache** | * Normal presentation of headache symptoms for this patient. * A patient where sub-arachnoid haemorrhage has been ruled out by appropriate investigations or a registered medical practitioner has made an alternative diagnosis. * A patient with an undiagnosed headache, where a registered medical practitioner has approved the use of NEPT so that the patient can be transported for further testing. * A patient with a diagnosed subdural or sub-arachnoid haemorrhage where a registered medical practitioner has assessed the patient as haemodynamically stable. | A patient with an undiagnosed headache where the treating medical practitioner suspects acute intracranial pathology. |
| **Spinal cord injury** | * A patient where spinal cord injury has been ruled out by appropriate investigations or a registered medical practitioner has made an alternative diagnosis. * A patient with a diagnosed spinal cord injury where a registered medical practitioner has approved the use of NEPT so that the patient can be transported for further management. * A patient with an acute undiagnosed spinal cord injury where a registered medical practitioner has approved the use of NEPT so that the patient can be transported for further investigations and/or management. | * A patient with undiagnosed neurological symptoms where the treating registered medical practitioner suspects spinal cord injury. |

|  |  |  |
| --- | --- | --- |
| Symptom | NOT TIME CRITICAL  Suitable for NEPT | TIME CRITICAL  Not suitable for NEPT |
| **Abdominal and back pain of a non-traumatic nature** | * Back or abdominal pain in patient <60 years. * A patient over 60 years with acute abdominal pain (<24 hours) where a registered medical practitioner has excluded the diagnosis of an aortic aneurysm. * A patient over 60 years with acute abdominal pain (<24 hours) where a registered medical practitioner has approved the use of NEPT so that the patient can be transported for further testing. | A patient over 60 years with sudden onset, severe acute abdominal pain (<24 hours) when the diagnosis of aortic aneurysm has not been excluded. |
| **Suspected meningococcal septicaemia** |  | A patient with evidence of septicaemia +/- a rash suggestive of this condition. |
| **Obstetric** |  | * A patient with vaginal bleeding in the third trimester * A patient in active labour. |
| **Palliative care** | Regardless of time critical criteria, palliative care patients with a pre-existing terminal illness and not for advanced life support, may still be transported by NEPT, provided an NFR order (or equivalent), ACP or ROTC is sighted by the NEPT staff. If such documentation is not sighted, then NEPT staff must advise the sending health service they will treat the patient should it be necessary. |  |
| **Trauma** | * A patient who does not meet the criteria for potential major trauma (see Trauma Time Critical Guidelines in Section One). * A potential major trauma patient who has been assessed by a registered medical practitioner as being stable for transport. The medical practitioner must consult with ARV for all potential major trauma patients prior to authorization of NEPT. | * Patients with criteria for potential major trauma (see Trauma Time Critical Guidelines in Section One). * All Adult Retrieval Victoria (ARV) patients. *Exception:* Unless the consulting retrieval physician specifically approves the use of NEPT * Paediatric patients meeting criteria for potential major trauma. * All Paediatric Infant Perinatal Emergency Retrieval (PIPER) patients unless the consulting retrieval physician specifically approves the use of NEPT. |

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## Patient Acuity

The *Non-Emergency Patient Transport Regulations 2016* set out the classes of transport service based on the acuity (low, medium, high) of the patient and the type of transport (road or air). These include a description of the patient characteristics for low, medium and high acuity. In addition to these descriptions, these protocols describe further features of acuity. These are detailed in Table 3 below. The acuity is to be decided in conjunction with the interpretive notes attached to Table 3.

Furthermore, while taking into account the variety of clinical conditions and range of acuities of patients that may be serviced by licensed NEPT providers, the types of conditions described in this section are not exhaustive. It is therefore accepted that NEPT health professionals continue to use their clinical judgment (within their authority to practice) in applying these protocols.

Patient acuity needs to be assessed by an appropriate health professional:

* Low acuity patients require assessment by an appropriate health professional (as described below) that the patient is suitable for low acuity NEPT transport.
* Medium and high acuity patients require assessment by a registered medical practitioner that the patient is haemodynamically stable.
* The appropriate health professional is expected to determine that the transport is clinically necessary.

In the context of these protocols, an appropriate health professional is one of the following:

* a RN1 who has examined the patient; or
* a registered medical practitioner who has examined the patient; or
* an AV Clinician who has determined that the patient complaint is not urgent, based on a discussion with the patient or an RN1 or registered medical practitioner who has seen and examined the patient; or
* a paramedic or RN1 working for AV’s telephone referral service who has triaged the patient to NEPT according to medically approved triage guidelines; and
* a mental health practitioner, if applicable.

A mental health practitioner is any of the following who is employed or engaged by a designated mental health service: a registered psychologist; registered nurse; social worker; or registered occupational therapist.

**Definition of low acuity patient**

A low acuity patient is a patient who has one or more of the following conditions—

(a) impaired cognitive functioning requiring supervision;

(b) if the patient is not transported by an aeromedical service, chronic diagnosed shortness of breath in relation to which there has been no recent change.

In general, **low acuity** patients may either walk to the vehicle/stretcher or require some assistance with manual handling as provided by one or two PTOs, and require monitoring and intervention limited to the PTO skills in Table 1, p. 78 If transported by air, they should be accompanied by one ATA/AO as a minimum.

Definition of medium acuity patient

A medium acuity patient is a patient who requires—

(a) active management or intervention; or

(b) specialised equipment requiring monitoring; or

(c) observation and monitoring of an intravenous infusion that does not contain any vasoactive agent other than glyceryl trinitrate.

In general, **medium acuity** patients may require some assistance with manual handling as provided by one ATA or an ATA and a PTO, and require monitoring and intervention limited to the ATA skills in Table 1, p. 78. Some medium acuity patients will require an RN1 skillset. If transported by air, they should be accompanied by one ATA or RN1 as a minimum, with consideration given to how the patient will be unloaded at the receiving end of the journey.

Definition of high acuity patient

(1) A high acuity patient is a patient who requires—

(a) active management or intervention; and

(b) one or more of the following—

(i) cardiorespiratory support;

(ii) a higher level of care than that required for the transport of a medium acuity patient;

(iii) observation and monitoring of an intravenous infusion that contains vasoactive agents;

(iv) transport by PIPER's neonatal emergency transport service, PIPER's paediatric emergency transport service or ARV, excluding patients who have received treatment and are being returned to their home or transported to another facility.

In general, **high acuity** patients will require manual handling as provided by a PTO and an ATA—as per minimum—and will require monitoring and intervention to the level of RN1 or RN1 CC as per table 1, p. 78. High acuity patients may be transported by a PTO and ATA or a single PTO if an escort from the sending facility (nurse or medical officer), or if an escort from ARV or PIPER is accompanying them. If transported by air they require a minimum of an ATA and an escort from the sending facility (nurse or medical officer), or an escort from ARV or PIPER.

In all patient acuity types, the skill-set should be checked against table 1, p. 78 to ensure that the appropriately qualified skill-set is requested to accompany the patient.

Table 3: Patient acuity

|  |  |  |  |
| --- | --- | --- | --- |
|  | **LOW ACUITY** | **MEDIUM ACUITY** | **HIGH ACUITY** |
| **Example Patient Types** | * Permanent tracheostomy patients (> 3 months) breathing spontaneously with no treatment required, with/without need for oxygen, and all other factors low acuity (breathing problems not the reason for transport) * A patient being transported who requires clinical assistance and/or supervision during the transport * Persons with mental illness that are not under sedation | * Patients requiring oropharyngeal suctioning for a chronic condition where there is no compromise of the patient’s airway * Permanent tracheostomy patients breathing spontaneously who may require infrequent suctioning * Persons with mental illness that require monitoring or management at a health service * Patients with a fully assessed neurologic event who are stable being referred for further investigation/return or admission * Patients with an IV Patient Controlled Analgesia (PCA) pump * Patients with stable atrial fibrillation, including those at a residential care service * Patients with musculo-skeletal pain requiring methoxyflurane for transport or transfer to stretcher | * Patients requiring oropharyngeal suctioning for a complex condition where the patient’s airway may be compromised * Non-permanent tracheostomy patients, who are breathing spontaneously1 * Patients with mechanical circulatory support2,3. * Persons with mental illness that require monitoring, management or intervention at a health service |
| **Patient Condition** | * A patient with documented chronic (>24 hours) altered conscious state (e.g. severe dementia) who has no signs of acute deterioration (GCS changed by >2 points) * Chronic diagnosed shortness of breath – may need oxygen during transport * Inability to travel in a normal seated position * Inability to walk more than a few steps unaided | * Home ventilation patients4 * May require cardiac or other type of monitoring * Intercostal or CVC * Recent fracture of the spinal column where there is not spinal cord involvement * IV infusion managed by the patient or visiting nurse * IV infusion of crystalloid fluid, containing glyceryl trinitrate or heparin using (an) infusion pump * IV infusion of crystalloid fluid, with or without an infusion pump (non-vasoactive) | * Patients with an illness or injury which requires active monitoring or treatment by a registered nurse or registered medical practitioner * Mechanical ventilation patients5 (not home ventilation) * Intravenous infusion of a vasoactive medication * Central or arterial line in active use for monitoring or therapy * Patient of PIPER or ARV |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **LOW ACUITY** | **MEDIUM ACUITY** | **HIGH ACUITY** |
| **Multiple patients** | * Multiple patients in one transfer can occur. However, when one patient is unloaded and transferred into a health facility, the comfort and security of the other patients must be considered * Note that patients who are potentially infectious with diseases (see Infectious disease below) must not be transported with other patients * Patients may only be left unattended in a NEPT vehicle if: * The patients are cognitively stable and agree to be left unattended. * The cabin temperature is comfortable with the vehicle engine not running | Two of the following medium acuity patients may be multi-loaded by road:   * where observation and monitoring of an intravenous infusion of a crystalloid fluid, with or without an infusion pump is required * where care of an ICC or CVC is required   Note that patients who are potentially infectious with diseases (see Infectious disease below) must not be transported with other patients.  Medium acuity patients who are multi-loaded, **must not be left unattended** in the vehicle | High acuity patients cannot be multi-loaded |
| **Infectious disease** | * Patients who are potentially infectious with diseases (such as influenza, measles, mumps or TB), or colonisation with multi-resistant organisms (such as MRSA, VRE, MDR-TB or CRE) must not be transported with other patients (Department of Health, 2012) * Following the transport of such patients, the vehicle must be cleaned and disinfected in accordance with standard infection control practices7 | As per low acuity7 | As per low acuity7 |

*Please find corresponding in-text referencing on the following pages 91*

#### Interpretive notes for Table 3

1. Tracheostomy patients may be transported by a RN1 CC provided that the tracheostomy was performed more than five (5) days prior to transfer. For patients within five (5) days, a registered medical practitioner who has the appropriate skills and equipment to undertake the task of tracheal tube replacement or intubation must accompany the patient.
2. For patients with an intra-aortic balloon pump, extra-corporeal membrane oxygenation or similar circulatory support device, careful consideration of the potential for patient instability needs to be given by the approving registered medical practitioner. In particular, there must be awareness of the possible delay in arrival at the receiving hospital given the inability of NEPT to travel as an emergency vehicle.
3. All patients with mechanical circulatory support must have either an appropriate medical perfusionist or RN1, and registered medical practitioner escort. The circulatory assist device must be loaded by the NEPT staff or with an appropriate lifting device, as medical and nursing staff at the sending or accepting hospital will be unable to assist with the manoeuvre of equipment into the vehicle.
4. NEPT staff must be able to perform tracheal suctioning, connection of the ventilator to the tracheostomy (if the patient can’t) or connection of a bag or valve device to the tracheostomy for the administration of ventilation should the ventilator fail.
5. All NEPT high acuity mechanically ventilated patients must be accompanied by a registered medical practitioner who has the appropriate skills and equipment to undertake this task.
6. Licensed NEPT providers need to consider the space requirements for safe working practice when multi-loading patients with equipment.
7. Standard precautions should be used at all times and this includes: hand hygiene; use of protective equipment such as gloves and eye protection when necessary; appropriate cleaning; and respiratory/cough etiquette. Good hand hygiene, including the use of alcohol-based hand rubs, is critical. This should be performed at a minimum before and after touching patient and patient equipment.

## NEPT Patient Care Record

Licensed NEPT providers are required to maintain a NEPT patient care record for the range of services they provide including transfers to and from health services or day procedure centres and home or residential care services, inter-hospital transfers, public event duties and deployment required under SHERP. In addition, attendance at unplanned patient incidents also requires a NEPT patient care record. This section sets out the requirements for NEPT patient care records and handover. The NEPT patient care record should also be maintained in accordance with the licensed NEPT providers’ records management practices.

As described in Section 1, each licensed NEPT provider must have a system of audit in place to identify and review any variations to routine care. This system should form the basis of the clinical risk management and quality improvement program of each provider. Variations to routine care, as described in Section 1, should be submitted to the department.

### **Patient record requirements**

#### Patient acuity

For low acuity patients, the NEPT patient care record must include a brief description of the clinical features that confirm that the patient is low acuity. Unless otherwise clinically indicated, the measurement and recording of vital signs is not required. The name and contact details of the appropriate health professional (if applicable) who assessed the patient as stable for the duration of the transport needs to be noted in the NEPT patient care record.

For medium acuity patients, the NEPT patient care record must include a brief description of the clinical features that confirm that the patient is medium acuity and the name and contact details of the registered medical practitioner and appropriate health professional (if applicable) who assessed the patient as stable for the duration of the transport.

For high acuity patients, the NEPT patient care record must include a brief description of the clinical features that confirm that the patient is high acuity and the name and contact details of the registered medical practitioner and appropriate health professional (if applicable) who assessed the patient as stable for the duration of the transport. The names and contact details of the registered nurse or registered medical practitioner escort or the staff member of PIPER or ARV must also be recorded, if applicable.

Measurement of vital signs must occur prior to transport and on arrival at the receiving facility. Vital signs are to be recorded at minimum half-hourly intervals (15 minutely if a CPP is used and more frequently if the patient is unstable) or as designated by the sending health service or registered medical practitioner that authorised NEPT. When transporting a patient who is receiving services for a mental illness and who has not received sedation, behavioural observations only should be recorded half-hourly for the duration of the journey.

#### Medication administration

For all medications that are administered, the NEPT employee must sight the original medication order, in addition to providing a legible photocopy of the original medication order in the NEPT patient care record, or if given under consult record the details of the consultation including name and registration or employee number of the authorising person.

#### NFR, ACD or ROTC

For home to hospital transfers, documentation of an NFR (or equivalent), ACP or ROTC that states that cardiopulmonary resuscitation be withheld, may be sighted, or it may be accepted in good faith by those present at the scene that this document exists. If copies of such documentation are available, they should be included in the NEPT patient care record. If documentation is not available, then the NEPT health professionals must record full details of the information given to them and by whom regarding the patient’s wishes. If a substitute decision maker is nominated (usually a person with enduring power of attorney (medical treatment), this person’s details should also be noted in the NEPT patient care record. If there is any doubt about the patient’s wishes for CPR, the default position of continuing CPR should be adopted.

For inter-hospital transfer or hospital to home transfer, copies of relevant documentation must be provided by the sending health service and included in the NEPT patient care record. Where a copy is not obtained, the NEPT crew must advise the sending health service that they will treat the patient should it be necessary.

## Audit and record requirements

Each licensed NEPT provider must have a system of audit in place to identify and review any variations to routine care. This system should form the basis of the clinical risk management and quality improvement program of each provider.

Variations to routine care should be submitted to the Department as indicated below.

Patient care records for the following circumstances must be forwarded to the Manager, Private Hospitals Unit at the Department of Health and Human Services, for review:

Specifically instances as described at <https://www2.health.vic.gov.au/hospitals-and-health-services/quality-safety-service/clinical-risk-management/sentinel-event-program>

* death of a patient (immediately)
* significant patient risk (immediately).
  + A significant risk is one where there is a high probability of a substantial and demonstrable adverse impact. In each case a significant risk will be sufficiently serious to warrant an immediate response to reduce the risks to patients. This may include interventions or changes to systems, clinical care or clinical practice (Australian Commission on Safety and Quality in Health Care, 2012).
* any case where a patient has suffered cardiac arrest during NEPT care whether or not the patient has a ‘not for resuscitation’ or ‘refusal of treatment’ certificate (quarterly)
* any transfer of a patient with mechanical circulatory assist device (quarterly)
* any case where an NEPT crew consult for and are authorised to provide treatment outside their individual authority to practice
* any adverse event (quarterly).
  + An adverse event for the purposes of this document is defined as any unplanned event resulting in, or having the potential to result in, injury to a patient or an unintended outcome. It isn’t necessary that any harm actually occurred, or that there was a mistake or error (Department of Health, 2011).

Please forward records to:

The Manager  
Private Hospitals Unit  
The Department of Health and Human Services  
GPO Box 4541   
Melbourne VIC 3001

# Section Six: Appendices

## Appendix 1: Assessment of a patient for a NEPT service

This protocol applies to transfers to and from health service or day procedure centre and home or residential care service, and IHT.

Is the condition time critical (p. 22) or meets the exclusion criteria for NEPT (p. 82-85)?

Contact AV communications (by phoning 000 or via AV radio)

Step 1

**YES**

**NO**

Step 2

What is the level of acuity (p. 86-90)?

Step 3

**HIGH ACUITY**

Has a registered medical practitioner assessed the patient as haemodynamically stable for NEPT as high acuity?

**MEDIUM ACUITY**

Has a registered medical practitioner assessed the patient as haemodynamically stable for NEPT as medium acuity?

**LOW ACUITY**

Has an appropriate health professional assessed the patients as stable for NEPT as low acuity?

**NO**

Contact AV communications (by phoning 000 or via AV radio)

**NO**

**NO**

**YES**

**YES**

**YES**

Does the patient have other means of transport e.g. family or community provider?

Step 4

**NO**

**Type of transport**

What type of transport is required (road or air)?

**YES**

Step 5

**Staffing**

What type of staffing is required?

* Patient independence and ability to transfer
* OHS risk assessment (Appendix 3)
* Specialist skills required

Step 6

**YES**

**Arrange NEPT booking**

**Arrange alternative transport**

## Appendix 2: Mental Health Patients

#### Key message

These protocols have been updated to reflect the recent amendment to the *Non-Emergency Patient Transport Regulations 2016* regarding the transport of patients with mental illness*.* This amendment aligns with changes to the *Mental Health Act 2014.*

The objective of the *Mental Health Act 2014* is to ensure that assessment and treatment of persons with mental illness are provided in the least restrictive way possible. Transport for persons with a mental illness should be arranged in the most timely and least restrictive way possible. This includes travelling in a private vehicle or mental health agency car rather than a stretcher vehicle if appropriate and travelling in an NEPT vehicle rather than an emergency ambulance if appropriate.

Changes to these protocols now reflect this ‘least restrictive’ principle. They have been amended so that persons receiving services for a mental illness, who are assessed as stable and suitable for transport according to the criteria in the *Non-Emergency Patient Transport Regulations 2016* and these protocols may be transported by NEPT services regardless of:

1. the departure and arrival points of the transport

2. the level of acuity; (persons with a mental illness may now be transported by low acuity NEPT services if appropriate)

3. whether restraint and significant sedation, or repeat doses of sedation, may be required (as NEPT providers cannot use restraint or sedation, this would only be permitted where the requirements of the *Mental Health Act 2014* are met. For example, if the person is accompanied by an authorised person (under the *Mental Health Act 2014*) who takes responsibility for the use of restraint, or by someone authorised to administer sedation).

4. whether they are compulsory (formerly called involuntary) patients.

#### Authorised persons under the *Mental Health Act 2014*

Under the *Mental Health Act 2014*, Authorised Persons include paramedics working for Ambulance Victoria, police officers and registered medical practitioners employed or engaged by a designated mental health service or a mental health practitioner. A mental health practitioner is any of the following who is employed or engaged by a designated mental health service: a registered psychologist; registered nurse; social worker; or registered occupational therapist.

Authorised persons have particular powers under the Act to:

* use bodily restraint and sedation to enable a person to be safely taken to or from a designated mental health service or any other place. Bodily restraint may only be used if all reasonable and less restrictive options have been tried or considered and have been found to be unsuitable and the restraint is necessary to prevent serious and imminent harm to the person or to another person. The use of restraint must be documented by the person who used the restraint in accordance with their organisation’s records management practices;
* search a person who is subject to transport under the *Mental Health Act 2014* if they suspect that the person is carrying something that could help the person to escape or that presents a danger to health and safety;
* seize and detain items that could be used to help the person escape or is a danger to health and safety.

#### Sedation for safe transport

Under the *Mental Health Act 2014*, a registered medical practitioner can administer sedation to enable a person to be safely taken to or from a designated mental health service or any other place if all reasonable and less restrictive options have been tried or considered and found to be unsuitable and if the sedation is necessary to prevent serious and imminent harm to the person or to another person. The registered medical practitioner may direct a registered nurse or ambulance paramedic (as an authorised person under the *Mental Health Act 2014*) to administer the sedation.

The use of sedation must be documented by both the person prescribing and the person administering the sedation in accordance with their organisation’s records management practices.

Further information on the changes to these protocols to reflect the Mental Health Act is available at: <http://www.health.vic.gov.au/ambulance/nept.htm>

And at: <https://www2.health.vic.gov.au/mental-health/mental-health-services/transport-for-people-in-mental-health-services>

## Appendix 3: Risk assessment and management for loading a patient into a vehicle with a single operator

**Assessment**

* Consider patient behavioural and cognitive variables: state of consciousness, ability to follow commands, unpredictable
* Consider patient physical variables: ability to stand, walk, move about bed, fatigue levels, contractures, weight
* Consider clinical variables: pain, IV, drainage bags, unable to sit
* Consider environment variables: limited space and access, size of doorways, ramps, clutter, height of chairs and beds, grab rails, availability of manual handling equipment (Worksafe Victoria, 2009).

Step 1

**Not at risk of injury**

* Load and transport patient

**At risk of injury**

* Seek assistance from sending and receiving facility to ensure risk of injury is removed

Step 2

**Patient transport**

* Load and transport patient

Step 3

1. https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/end-of-life-care/advance-care-planning/medical-treatment-planning-and-decisions-act [↑](#footnote-ref-1)