

# **Clinical Practice Guidelines**

Air Ambulance Victoria



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# **Rapid Sequence Intubation**

#### **Care Objective**

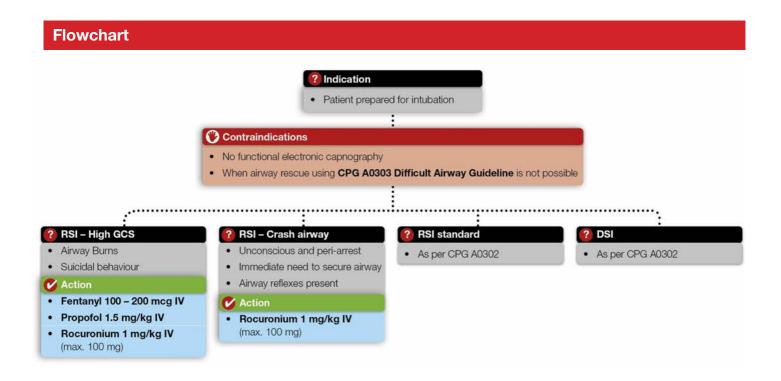
- Ensure safe and effective airway management throughout entire episode of care
- To be read as an adjunct to CPG A0302 Endotracheal intubation. This CPG includes two additional pathways available to MICA flight paramedics.

#### **General notes**

- While traditionally patients with altered conscious state are intubated for airway protection during aeromedical transport, it is not a mandated clinical requirement. Transport time, ability to divert, reason for transport and clinical fragility must be taken into account even in the setting of aeromedical retrieval.
- The term 'peri-arrest' is reserved for the patient whose vital signs predict a strong likelihood of rapid deterioration into cardiac arrest.
- Due to the rapid metabolism/off-set of propofol in critically unwell patients, an immediate post intubation bolus of propofol and subsequent infusion will be required to maintain anaesthesia / sedation.
- MFPs are authorised to undertake a second RSI in the setting of a failed intubation where it's
  deemed to be clinically appropriate and safe to do so. A second RSI should be undertaken as per
  CPG A0302/AAV 01.

#### **RSI – Crash airway**

- The aim is to secure the airway rapidly while avoiding haemodynamic compromise and extended scene/procedure times in unconscious patients who require immediate airway management to prevent pending cardiac arrest.
- It is expected that concurrent IV access should be attempted if not already obtained.
- RSI with a paralytic only and with expedited preparation is permitted where there is an immediate need to secure the airway and:
  - Administration of sedative / analgesic is likely to cause delay and / or haemodynamic collapse
  - Peri arrest, airway reflexes present



#### **Related Resources**

• <a href="https://av-digital-cpg.web.app/assets/pdf/MAC/Endotracheal">https://av-digital-cpg.web.app/assets/pdf/MAC/Endotracheal</a> intubation (paeds and AAV) FINAL.pdf

# **Difficult Airway Guideline**

#### **General Notes**

#### **Guideline Principles**

- This guideline supplements CPG A0303 Difficult Airway Guideline, which applies to all MICA Paramedics.
- In addition to the following notes, **Plan C** is the key variation from **CPG A0303**.

#### **Crew Resource Management**

• In complex cases where MFPs are committed to other tasks (such as finger thoracostomy) the most experienced MICA Paramedic should be selected for intubation.

#### Plan C

- The intubating LMA replaces the iGel within Plan C.
- In the setting of intubating LMA insertion, correction of desaturation by ventilation should be undertaken prior to ETT insertion through the device.
- With regard to iLMA:
  - LMA success is measured by oxygenation
  - iLMA-ETT success is measured by electronic ETCO<sub>2</sub>



#### **Related Resources**

• https://av-digital-cpg.web.app/assets/pdf/MAC/Surgical airway MAC.pdf

### **Airway Maintenance**

#### **Care Objective**

- Optimise sedation +/- paralysis
- Optimise ventilation parameters using lung protective strategies
- Undertake the 'Critical IHT Checklist' to ensure comprehensive patient care post intubation
- To be read as an adjunct to CPG A0305 Airway Maintenance

#### **General Notes**

#### **Sedation and Paralysis**

- If **Propofol** is given to induce unconsciousness then consider post intubation sedation using:
  - Propofol infusion at rate 100 mg 300 mg/hr (10 30 mL/hr). Add Morphine infusion for patients intubated with Propofol with underlying pain
- If patient has had continuous seizure activity:
  - Midazolam Infusion @ 0.2 0.4 mg/kg/hr IV as an independent infusion
  - Supplement with Midazolam 0.05 0.1 mg/kg IV bolus as required (nil maximum)
  - Consider adding Propofol infusion 50 200 mg/hr in the seizure patient who appears resistant to opioid / midazolam sedation.
  - It is preferable to over-sedate these patients to maintain patient control than administer paralysis and potentially mask seizure activity.
  - Patients intubated for status epilepticus should not receive routine post intubation paralysis.
     However if sedation using **Midazolam** and **Propofol** is insufficient to safely maintain intubation and ventilation, then **Rocuronium** should be administered
  - Patient receiving high dose sedation may require cardiovascular support

#### **Trauma**

 Blood pressure should be managed as per CPG AAV 08 Inadequate Perfusion associated with Hypovolaemia

#### Non-traumatic brain injury

- In suspected NTBI due to suspected intracranial bleeding or sub-arachnoid haemorrhage (pre-RSI GCS < 8), maintain SBP > 120 mmHg and < 140mmHg.
- If hypotension is present in the suspected NTBI (SBP < 120 mmHg):</li>
  - Maintain minimum sedation rates of Fentanyl 20 mcg/hr and Midazolam at 2 mg/hr IV
  - Administer Normal Saline 0.9% 20 mL/kg IV, titrated to target BP
  - If SBP remains < 120 mmHg despite fluid challenge then consider Noradrenaline infusion.</li>
     Titrate to a SBP 120 mmHg using a dose between 5 25 mcg/min IV (5 mL/hr 25 mL/hr)
- If hypertension is present (SBP > 140 mmHg) despite Fentanyl 100 mcg/hr and Midazolam at 10 mg/hr

# Airway Maintenance

- Administer Propofol 0.5 mg/kg IV bolus. Repeat as required
- Consider Propofol infusion at 50 mg/hr (5 mL/hr). Titrate to effect

#### **Flowchart**



· Evidence of persistent bradycardia

#### >> Initial Assessment

- · Atropine has been administered
- Isoprenaline or Adrenaline infusion running
- · Transvenous pacing is not available

#### Action: Commencement of Transthoracic Pacing

- Attach pads to left anterior chest wall and right posterior chest wall
- Switch Zoll Series X monitor/defibrillator to "Pacing"
- Provide appropriate sedation
  - Administer Midazolam 1-2mg IV and Fentany
     50mcg IV and repeat as required
- Set pacing output to 30mA and a heart rate of 70/minute
- Increase by 10mA until capture of QRS on ECG
- Set at 10mA above capture voltage

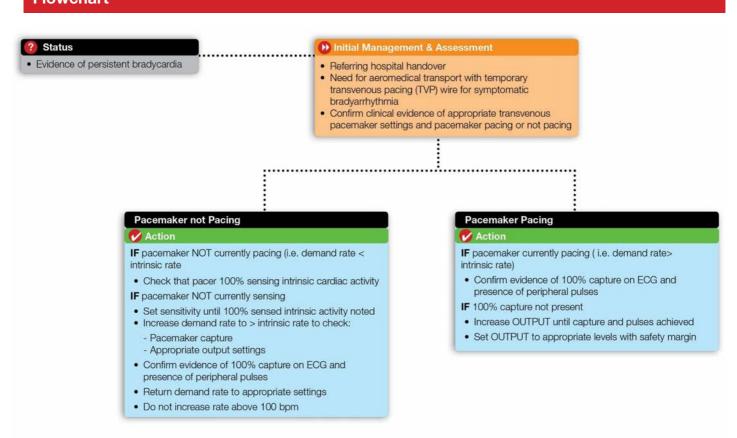
# **Transvenous Pacing**

#### **Pacing Wire Care**

- In general the OUTPUT setting on the pacemaker should be set at 2 times the THRESHOLD level plus 1mA (i.e. 2 x THRESHOLD(mA) + 1mA)
- · Pacing THRESHOLD would usually be determined on consultation with the sending hospital
- In general the SENSITIVITY setting should be set towards the maximum sensitivity (i.e. 0.5mV is the most sensitive)
- If Transthoracic Pacing instituted prior to or during flight consider implications on mission safety and appropriate communication with relevant aircrew/pilot.

# **Transvenous Pacing**

#### Flowchart



#### Pacing wire care

#### 🕜 Actio

- Confirm, secure and note position and insertion length of temporary transvenous pacing wire
- Confirm and secure all connections

#### Pacemaker Failure to Capture or Pace

#### Action

 Transvenous Pacing failure to capture and/or pacemaker fail to pace

#### AND/OR

- Less than adequate perfusion i.e. clinical evidence of bradycardia
- Check all leads, connections and pacemaker function
- Place patient in left lateral position and/or encourage patient to cough
- Reassess physiological status

IF less than adequate perfusion:

Increase OUTPUT until capture and return to adequate perfusion

Consider need for institution of Transthoracic pacing (TPP) or pharmacological support

**IF** Transvenous Pacing ineffective or not possible **AND** less than adequate perfusion

 Manage as per CPG A0402 Bradycardia and/or AAV-03 Transthoracic Pacing Pain Relief CPG AAV 05

#### **General Notes**

- Multimodal pain relief is recognised as the most effective pathway for efficacious analgesia and limits
  excessive opiate administration. Unless contraindicated Paracetamol IV should be administered to all
  trauma patients complaining of pain. Parecoxib, in addition, should be strongly considered for
  patients with moderate to severe pain unless contraindicated.
- Paracetamol and Parecoxib are slow acting, long lasting agents that provide bridging analgesia between the prehospital and Emergency Department settings.
- The use of Ketamine is not specifically contraindicated in the patient requiring winching. However MFPs must be acutely aware that a dissociated patient can be an inherent safety risk during the winching operation. Ideally patients should be allowed time to return to full consciousness prior to extrication and MFPs should include this potential delay in winch operations planning. Alternatively, other analgesic agents such as Methoxyflurane may be considered for procedural pain relief in the winch setting.
- ALS Flight Paramedics must consult with either the clinician or a MFP via the FCC prior to exceeding Morphine 20 mg IV or Fentanyl 200 mcg IV

#### **Infusions**

#### **Morphine Infusion**

- Morphine 30 mg added to make 30 mL with Dextrose 5% or Normal Saline.
- 1 mL/hr = 1 mg/hr

#### **Fentanyl Infusion**

- Fentanyl 300 mcg added to make 30 mL with Dextrose 5% or Normal Saline
- 1 mL/hr = 10 mcg/hr

#### **Ketamine Infusion**

- Ketamine 50 mg added to make 50 mL with Dextrose 5% or Normal Saline
- 1 mL/hr = 1 mg/hr

Ketamine 50 mg may be obtained by adding 50 mg (5 mL) of the pre-diluted 10 mg/mL Ketamine solution to 45 mL Dextrose 5% or Normal Saline to make a 1 mg/mL dilution

Pain Relief CPG AAV 05

#### **Flowchart Status** · Complaint of pain ? Initial Management • Pain score > 2 · Refer to CPG A0501 Pain Relief for initial treatment Ongoing analgesia Bridging analgesia Procedural analgesia · Inadequate analgesia obtained · General anaesthesia (without Paracetamol 1 g IV over 15 paralysis and intubation) may minutes be required for trapped patients Morphine up to 10 mg IV OR requiring limb amputation Paracetamol 500 mg IV over Ketamine 1.5 mg/kg IV bolus 15 minutes (<60 kg / frail / elderly / Fentanyl 25 - 100 mcg IV at malnourished / liver disease) 5 minute intervals as required • If **Ketamine** emergence may Ketamine 10 - 20 mg IV at impair safe winch retrieval consider · Parecoxib Sodium 40 mg IV 5 - 10 minute intervals as required - Methoxyflurance 3 mL Consider infusions · Morphine 2 - 10 mg/hr OR · Fentanyl 20 - 100 mcg/hr AND/OR · Ketamine 0.1 - 0.3 mg/kg/hr if transport time is prolonged · For patients with severe traumatic pain who do not respond adequately to the above, then consider RSI

#### **Related Resources**

- https://av-digital-cpg.web.app/assets/pdf/MAC/MAC IV Paracetamol review AAV.pdf
- https://av-digital-cpg.web.app/assets/pdf/MAC/Parecoxib update for MAC FINAL (2).pdf

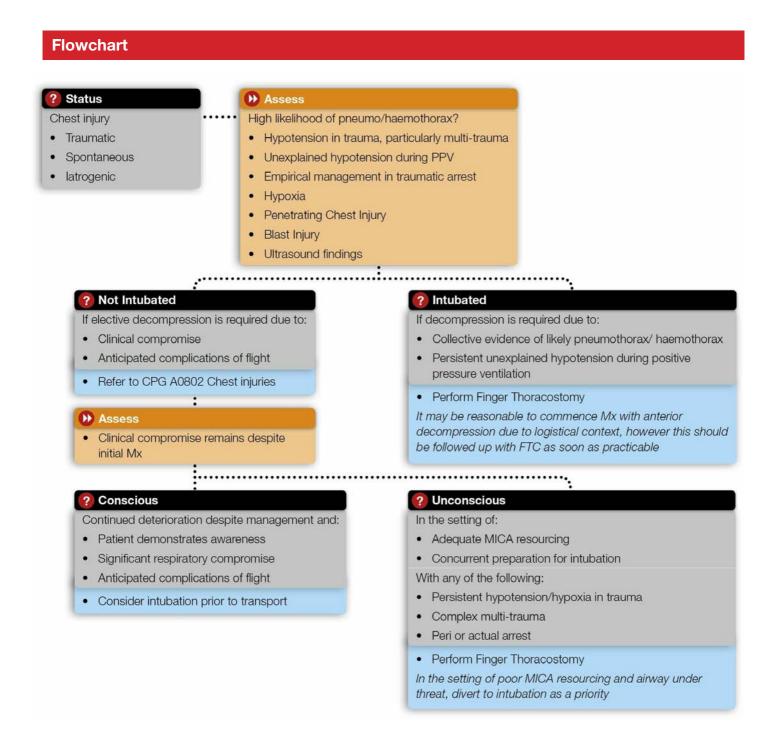
CPG AAV 09

# **Chest Injury**

#### **General Care**

- Always consider pneumothorax and/or haemothorax in the setting of unexplained hypotension, especially in the setting of traumatic chest injury and positive pressure ventilation
- Early targeted pain relief in the conscious chest injury patient remains an important strategy for maximizing spontaneous minute volume and patient comfort.
- In the setting of major chest trauma in the IHT, consult with ARV.

# **Chest Injury**



#### **Related Resources**

- <a href="https://av-digital-cpg.web.app/assets/pdf/CWI/CWI OPS 170 Pleural Decompression with Finger Thoracostomy.pdf">https://av-digital-cpg.web.app/assets/pdf/CWI/CWI OPS 170 Pleural Decompression with Finger Thoracostomy.pdf</a>
- <a href="https://av-digital-cpg.web.app/assets/pdf/MAC/4.1.4">https://av-digital-cpg.web.app/assets/pdf/MAC/4.1.4</a> AAV Chest Injury MAC FINAL (2) .pdf

CPG AAV 12

### **Asthma**

#### **General Notes**

- This CPG applies to critical asthmatic patients who remain acutely unwell despite salbutamol, ipratropium bromide and adrenaline therapy given as per CPG A0601 Asthma.
- Consider administration of Magnesium Sulfate as soon as practicable following commencement of adrenaline infusion.

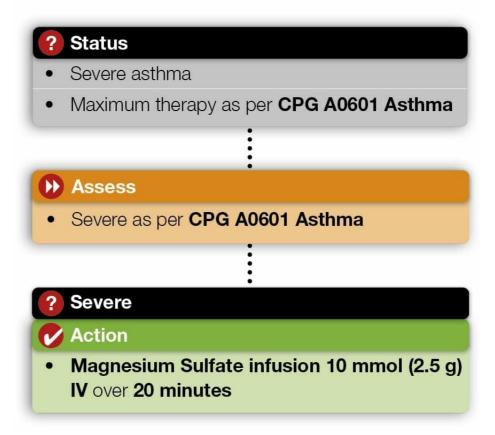


### **Infusions**

#### **ADULT**

- Dilute Magnesium Sulfate 10 mmol (2.5 g) to 25mL with Normal Saline (this equals 100 mg / 1 mL) for IV administration.
- Administer 10 mmol (2.5 g) via infusion pump over 20 minutes.

#### **Flowchart**



#### **Related Resources**

Asthma CPG AAV 12

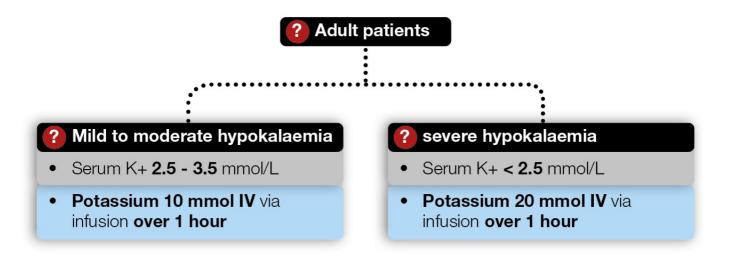
• https://av-digital-cpg.web.app/assets/pdf/MAC/Agenda item 4.1.1 Magnesium for Asthma AAV.pdf

# Hypokalaemia

#### **Care Objective**

- Timely serum potassium measurement
- Safe potassium infusion preparation

#### **Flowchart**



### Potassium safety

ALERT: Intravenous potassium can be fatal if given inappropriately.

- **Do not bolus** potassium chloride under **any** circumstance
- Potassium must only be administered by infusion pump
- Do not use chemical symbols on infusion labels e.g. KCl
- A maximum infusion rate of 20 mmol/hr is permitted regardless of measured serum potassium

#### **General Notes**

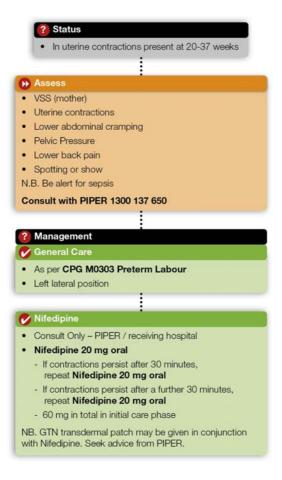
- Hypokalaemia can only be managed based on a very recent pathology measurement.
- · Continuous cardiac monitoring required.
- Repeat potassium measurement following the initial hour of treatment. Repeat only if indicated and maximum dose of 20 mmol has not been exceeded.

# **Preterm Labour**

#### **Care Objective**

 Safe transfer of a woman in preterm labour with the baby in-utero to a newborn capable healthcare service

#### **Flowchart**



#### References

1. https://www.bettersafercare.vic.gov.au/clinical-guidance/maternity/preterm-labour

#### **Flowchart**

#### ? Increased risk for nausea and vomiting

- · Pain or painful procedures
- Opioids and/or methoxyflurane administration
- · Hot cabin
- · Long or turbulent flight
- Unable to see outside or the horizon / immobilisation
- Psychological distress
- · Stated susceptibility to motion sickness
- Fear of medical procedures
- · Emerging signs of nausea

#### All patients

- Sensory matching
- · Reduce cabin heat / increase air flow
- Flightpath considerations
- Consider Ondansetron or Prochlorperazine for first line management as per CPG A0701 / P0701 Nausea and Vomiting

#### Established nausea and/or vomiting

Oilute droperidol to 20 mL with normal saline

#### Adult

- . Consider use of Isopropyl Alcohol Swab inhalation
- Droperidol 0.5 mg IV slow push
- Consider Dexamethasone 4mg IV / Oral if expected long transport time

#### **Paediatric**

- Consider use of Isopropyl Alcohol Swab inhalation
- Dexamethasone 4 mg IV / Oral

#### Prophylaxis

Consider early administration where there is a high risk of nausea and vomiting

#### Adult and paediatric

· Dexamethasone 4 mg IV / Oral

#### **Care Objectives**

- Early identification of patients suffering from nausea and vomiting
- Prophylactic or symptomatic management to prevent complications with care

#### Intended patient group

Patients with nausea and/or vomiting that will be exposed to retrieval by flight.

#### **Overview**

- Five principle neurotransmitter receptors mediate vomiting: muscarinic, dopamine, histamine, serotonin, and neurokinin receptors
- Where possible identification of the aetiology of nausea and vomiting may assist in identifying the
  most appropriate pharmacological and non-pharmacological interventions to support patient
  management, but is not necessary prior to commencing management
- In the aeromedical retrieval environment, it may be impossible to identify the specific cause of nausea and vomiting, given the number of contributing factors.

#### **Assessment**

#### **History**

- Many factors commonly encountered in the aeromedical environment may contribute to the development of nausea and/or vomiting:
  - Pain or painful procedures
  - Opioids and/or the use of methoxyflurane, particularly in combination or large doses
  - Hot cabin environment, particularly where airflow is difficult to maintain or a sense of claustrophobia is present
  - Long or turbulent flights
  - Inability to see outside cabin or immobilisation
  - Psychological distress, including fear of flying, situational distress etc
  - Stated susceptibility to motion sickness
  - Expressed fear of medical procedures

#### **Emerging signs of nausea**

- The following subtle signs and symptoms are indicative of emerging nausea that may lead to vomiting.
  - Restlessness
  - Headache
  - Burping / flatulence

- 'Prickly heat' sensation and clamminess
- Slowing heart rate
- Deep sighs
- Yawning

#### **Management**

#### **All patients**

- Manage as per CPG A0701 Nausea and Vomiting or CPG P0701 Nausea and Vomiting
- Sensory matching aims to connect the sensory cues between the vestibular, visual and proprioceptive signals to reduce nausea. Procedures which may help to achieve this include:
  - Allowing visualization of the horizon
  - Placing the head against the back of the stretcher
  - Reducing exposure to strobing lights
  - Distraction from the flight, such as conversation
- Where safe and appropriate for the patient's condition, an alternative flight path may be negotiated with the pilot to avoid anticipated turbulence.

#### Established nausea and/or vomiting

 Consider the use of Isopropyl Alcohol Swab inhalation while initiating management, or in conjunction with management.

Procedure

- Hold or instruct the patient to hold an alcohol swab approximately 2 cm under their nose
- Instruct the patient to take deep breaths through their nose
- The patient can decide how frequently they choose to inhale the swab depending on level of nausea and efficacy of treatment
- Anti emetic effects are usually seen within several minutes
- Provide a new alcohol swab every 15 minutes as required to manage nausea
- If nausea and/or vomiting is persistent, consider the following management in addition to ondansetron or prochlorperazine:

#### **Adult patients**

- Droperidol 0.5 mg IV slow push
  - Administration of **Droperidol** for nausea and vomiting requires atypical dilution.
  - Dilute 10 mg Droperidol into 20 mL of Sodium Chloride 0.9% to give concentration of 0.5 mg / mL.
  - Ondansetron, Prochlorperazine and Droperidol may all potentially cause QT prolongation. Ensure the ECG is monitored, particularly for co-administration of

medications or where other risk factors for QT prolongation are present (e.g. patient history, electrolyte imbalance).

 If extended prehospital times are expected (> 1 hour), the addition of **Dexamethasone** IV may be considered.

#### **Paediatric patients**

- Dexamethasone 4 mg IV
- Aim for a reduction of symptoms rather than elimination.
- ALS Flight Paramedics are not permitted to cannulate paediatric patients < 12 years of age for the administration of dexamethasone. It may be administered IV in patients < 12 years where an IV is already established.

#### **Prophylaxis**

- The need for prophylactic management should be indicated by actively appraising the listed risks for nausea and vomiting.
- For patients aged ≥ 21 years, consider Prochlorperazine 12.5 mg IM as per CPG A0701 Nausea and Vomiting.

#### **Dexamethasone**

- · Earlier administration is associated with improved effectiveness.
- May be given in addition to prochlorperazine
- Consider for:
  - Paediatric patients
  - Patients where prochlorperazine should be avoided (e.g. due to sedative effects)
  - High likelihood of in-transit nausea and vomiting

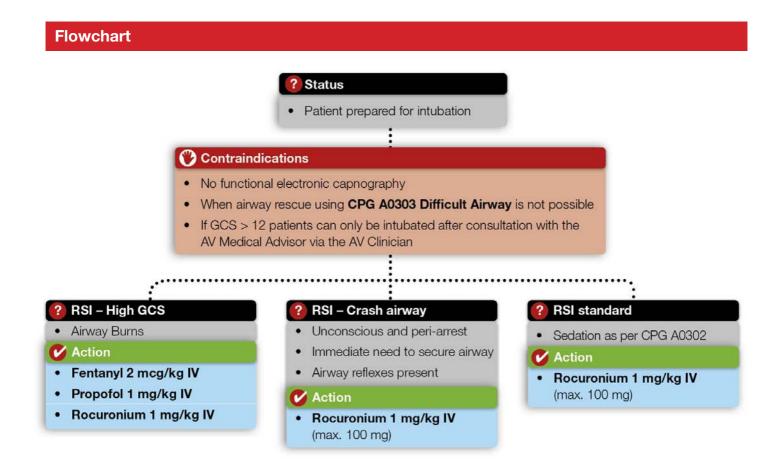
#### **Related Resources**

https://av-digital-cpg.web.app/assets/pdf/MAC/MAC paper - AAV Nausea and vomiting.pdf

# Rapid Sequence Intubation (Paediatric)

### **CPG AAV P01**

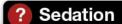
 This guideline is to be read as an adjunct to CPG AAV A01 Rapid Sequence Intubation and CPG P0301 Endotracheal intubation (paediatric)



Page 1 of 1

• This guideline is to be read as an adjunct to CPG P0303 Airway Maintenance (paediatric)

#### **Flowchart**





- Mx as per CPG P0303 Airway Maintenance (paediatric)
- Fentanyl / Midazolam infusion 0.2 0.4 mL/kg/hr IV OR
- Morphine / Midazolam infusion 0.2 0.4 mL/kg/hr IV

If Propofol is given for induction consider:

Propofol Infusion at rate 2 mg/kg/hr – 4 mg/kg/hr IV

Paralysis

### Action

- Rocuronium 0.6 mg/kg IV every 15 minutes
- Infusion Rocuronium 1 mg/kg/hr IV

Pain Relief CPG AAV P03

#### **General Notes**

- Multimodal pain relief is recognised as the most effective pathway for efficacious analgesia and limits
  excessive opiate administration. Unless contraindicated, Paracetamol IV should be administered to
  all trauma patients complaining of pain regardless of severity. Parecoxib, in addition, should be
  strongly considered for patients with moderate to severe pain unless contraindicated.
- Paracetamol and Parecoxib are slow acting, long lasting agents that provide bridging analgesia between the prehospital and emergency department settings.
- Dose errors in IV paracetamol administration for paediatrics is a documented issue. Do not
  administer paracetamol directly from the soft pack to paediatric patients. To avoid the risk of
  overdose, draw the required dose out of the soft pack and administer from a separate syringe.
- The use of Ketamine is not specifically contraindicated in the patient requiring winching. However
  MFPs must be acutely aware that that a dissociated patient can be an inherent safety risk during the
  winching operation. Ideally patients should be allowed time to return to full consciousness prior to
  extrication and MFPs should include this potential delay in winch operations planning. Alternatively,
  other analgesic agents such as Methoxyflurane may be considered for procedural pain relief in the
  winch setting
- ALS Flight Paramedics are not permitted to cannulate paediatric patients < 12 years of age for the
  administration of analgesia. Where a patient < 12 years of age already has an IV in situ, ALS flight
  paramedics can administer IV pain relief as required. Where the current plan for pain relief is unlikely
  to be effective, consult with PIPER (if they are the coordinating body) or the MFP on duty, for a
  management plan prior to transport.</li>

IV Paracetamol dose / volume table						
Age (years)	<b>Weight</b> (kg)	Dose (mg)	Total volume (mL)	Rate (mL/hr)		
3 months	6	90	9	36		
6 months	8	120	12	48		
1 year	10	150	15	60		
2	12	180	18	72		
3	14	210	21	84		
4	16	240	24	96		
5	18	270	27	108		
6	20	300	30	120		
7	22	330	33	132		
8	24	360	36	144		
9	26	390	39	156		
10	33	495	49.5	198		
11	36	540	54	216		
12 - 15	40	600	60	240		

**Pain Relief** 

12 - 15	50	750	75	300
12 - 15	60	900	90	360

#### **Infusions**

#### **Morphine Infusion**

- Morphine 30 mg added to make 30 mL with Dextrose 5% or Normal Saline
- 1 mL/hr = 1 mg/hr

#### **Fentanyl Infusion**

- Fentanyl 300 mcg added to make 30 mL with Dextrose 5% or Normal Saline
- 1 mL/hr = 10 mcg/hr

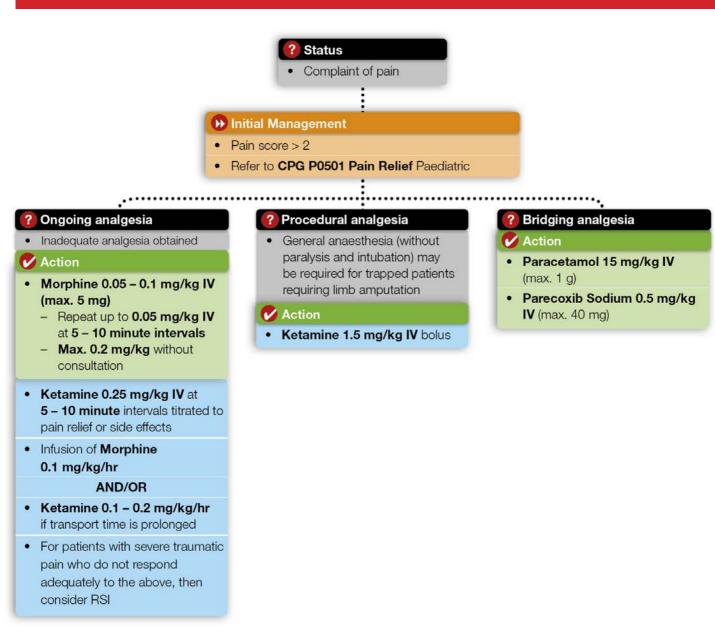
#### **Ketamine Infusion**

- Ketamine 50 mg added to make 50 mL with Dextrose 5% or Normal Saline
- 1 mL/hr = 1 mg/hr

Ketamine 50 mg may be obtained by adding 50 mg (5 mL) of the pre-diluted 10 mg/mL Ketamine solution to 45 mL Dextrose 5% or Normal Saline to make a 1 mg/mL dilution

Pain Relief CPG AAV P03

#### **Flowchart**



#### **Related Resources**

https://av-digital-cpg.web.app/assets/pdf/MAC/MAC IV Paracetamol review AAV.pdf

#### **General Notes**

- This CPG applies to critical asthmatic patients who remain acutely unwell despite salbutamol, ipratropium bromide and adrenaline therapy given as per CPG P0602 Asthma.
- Consider administration of Magnesium Sulfate as soon as practicable following commencement of adrenaline infusion.



### **Infusions**

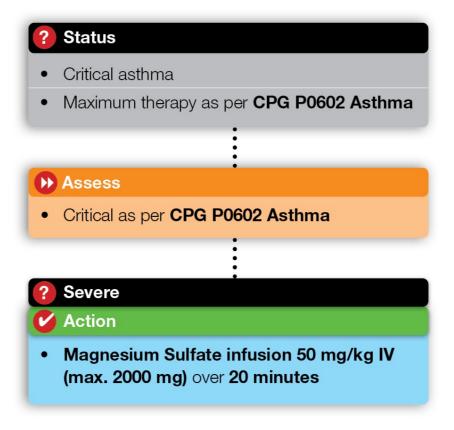
#### **PAEDIATRIC**

- Dilute Magnesium Sulfate 10 mmol (2.5 g) to 25 mL with Normal Saline (this equals 100 mg / 1 mL) for IV administration.
- Administer 50 mg / kg (max. 2000 mg) via infusion pump over 20 minutes

Age (years)	Weight (kg)	<b>Dose</b> (mg)	<b>Dose</b> (g)	Total volume (mL)	Rate (mL/hr)
1-3 months	6	300	0.3	3	9
6 months	8	400	0.4	4	12
1 year	10	500	0.5	5	15
2	12	600	0.6	6	18
3	14	700	0.7	7	21
4	16	800	0.8	8	24
5	18	900	0.9	9	27
6	20	1000	1	10	30
7	22	1100	1.1	11	33
8	24	1200	1.2	12	36
9	26	1300	1.3	13	39
10	33	1650	1.65	16.5	49.5
11	36	1800	1.8	18	54
12 - 15	≥ 40	2000	2	20	60

### **Asthma**

#### **Flowchart**



#### **Related Resources**

• <a href="https://av-digital-cpg.web.app/assets/pdf/MAC/Agenda">https://av-digital-cpg.web.app/assets/pdf/MAC/Agenda</a> item 4.1.1 Magnesium for Asthma AAV.pdf

### **Arterial Line Insertion**

### **CPG AAV REF01**

#### **Flowchart**



 Patient with potential haemodynamic instability

#### **Assess**

- The blood pressure of a patient with potential haemodynamic instability is most reliably monitored during air transport with an electronic transducer connected to an intra-arterial cannula
- Provided there is a palpable radial pulse and time permits, an arterial line maybe inserted by a MICA Flight Paramedic in any of the following conditions
  - Secondary transfer of haemodynamically unstable patients
  - Primary attendance at haemodynamically unstable patients where the transport time is likely protracted or where NIBP is unreliable

#### 🕜 Action

- Up to two attempts at insertion are allowed at one radial artery site only
- A 20G or 22G IV cannula or a proprietary kit with guide-wire may be used
- An injection of 1-2mL of Lignocaine 1% S/C may be required at the cannulation site in an awake patient

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# **Helicopter Safety & Landing Site** Requirements

### **CPG AAV REF04**

Operating around helicopters can be dangerous. This card provides important information for the safety of bystanders and emergency services when working in the vicinity of helicopters.

#### **Helicopter Safety Considerations**

Emergency Personnel, Vehicles & Bystanders must remain well clear of the landing area during landing and take-off. Protect eyes with safety goggles or turn head when helicopter is landing and departing.



DO NOT APPROACH THE HELICOPTER unless escorted by a crew member.

If escorted - Only approach or depart the helicopter in the green shaded area indicated.

#### **NEVER WALK BEHIND A HELICOPTER**

If on uneven ground, approach or depart from the downhill side.

**NEVER** from the uphill side or the rear.

#### Landing Site Requirements – Minimum 40 metres x 40 metres

The **Pilot in Command** of the helicopter has the **final decision** on suitability of the landing site. This also includes the destination hospital.

- Area a minimum of 40 x 40m or about the size of 2 tennis courts.
- Surface should be Free of Obstacles and as Firm and Flat as possible.
- Landing site to be free of Overhead Wires
- Approach / Departure paths to be into wind where possible.
- Vehicle Doors & Windows to be closed.
- All loose articles including stretchers to be removed or secured.
- At night, be prepared to turn lights off if requested by crew

Helicopter Safety & Landing Site Requirements CPG AAV REF04



#### **Helicopter Winch Safety Considerations**

The downwash of a helicopter can be considerable, with potential to cause flying dust, debris or blow equipment away, break tree branches or even bring whole trees down.

The following should be considered when a helicopter winch is likely:

- Look up, check for overhanging, broken or dead tree branches and maintain awareness of potential for falling debris throughout winch operation.
- Consider moving the patient/ persons to be winched away from the hazards where possible.
- PPE including Hearing, Eye and Head Protection for all personnel/ patients where available.
- Secure all loose items and equipment that may be blown away by downwash.
- Only essential personnel should remain in the immediate winch area.
- **Bystanders** should be moved well **clear** of the winch area including the helicopters likely approach and departure paths (into wind wherever possible).
- Follow any directions provided by the helicopter crew.
- Maintain awareness of above considerations until helicopter has departed the area.

#### **Anti-Rotation "Tag" line Operation**

When a stretcher is to be winched, an Anti-Rotation or 'Tag' Line will be attached to one end of the stretcher and held by a nominated Tag Line Operator on the ground. This is to prevent the stretcher from spinning while being winched up to the aircraft.

If you are asked to operate the Tag line:

- Listen carefully to the briefing provided to you on its operation, even if you have done it before.
- PPE including Hearing, Eye and Head protection along with sturdy gloves must be worn.
- Maintain awareness of surroundings at all times.
- NEVER wrap the Tag Line around your Hands/ Arms/ Body.
- NEVER attach the Tag Line to anything.
- When the stretcher reaches the helicopter, the Tag Line will be released by the rescue crewman and will fall to the ground. Remain clear of the falling line.

# Helicopter Safety & Landing Site Requirements

# **CPG AAV REF04**

Return the Tag Line as instructed.



### **CPG AAV REF03**

Before giving the 'Ready' signal, check the following using SPECTER Checks:

- S Stretcher: Straps, Security
- P Patient: Protection (eyes, ears), Patient brief
- E Equipment: ready, checked, secured
- C Karabiners / connectors: check screwed and squeezed
- T Tag Line: secured and ready / Operator briefed
- E Environment: suitable for task, bystanders cleared away
- R Risk assessment, Radio call

The 406 Stretcher is now ready to be recovered to the aircraft