Policy code | DTP_MOR_0519
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Date | May, 2019
Purpose | To ensure a consistent procedural approach to morphine administration.
Scope | Applies to all Queensland Ambulance Service (QAS) clinical staff.
Health care setting | Pre-hospital assessment and treatment.
Population | Applies to all ages unless specifically mentioned.
Source of funding | Internal – 100%
Author | Clinical Quality & Patient Safety Unit, QAS
Review date | May, 2022

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All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

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**Morphine**

**Drug class**
Narcotic analgesic

**Pharmacology**
Morphine is a narcotic analgesic that acts on the central nervous system by binding with opioid receptors, altering processes affecting pain perception and emotional response to pain. It also combines to cause respiratory depression, vasodilation, decreases in the gag reflex and slows AV node conduction.[1–3]

**Metabolism**
By the liver, kidney and lungs.[1]

**Indications**
- Significant pain
- Sedation
- **Autonomic dysreflexia** (with systolic BP > 160 mmHg)

**NOTE:** Morphine is the preferred narcotic agent except under the following circumstances:
- allergy and/or Adverse Drug Reaction to morphine;
- haemodynamic instability;
- known/suspected kidney disease;
- when NAS narcotic administration is the preferred treatment; and/or
- suspected ACS.

**Contraindications**
- Allergy and/or Adverse Drug Reaction
- Kidney disease (renal failure)

**Precautions**
- Older people
- Hypotension
- Respiratory tract burns
- Respiratory depression and/or failure
- Known addiction to narcotics
- Concurrent MAOI therapy
- Cardiac chest pain

**Side effects**
- Bradycardia
- Drowsiness
- Hypotension
- Nausea and/or vomiting
- Pin point pupils
- Respiratory depression
Morphine

**Presentation**
- Ampoule, 10 mg/1 mL *morphine sulphate pentahydrate*

<table>
<thead>
<tr>
<th>Onset</th>
<th>Duration</th>
<th>Half-life</th>
</tr>
</thead>
<tbody>
<tr>
<td>5–10 minutes (peak 20–30 minutes (IM))</td>
<td>1–2 hrs</td>
<td>2 hours</td>
</tr>
<tr>
<td>/ 2–5 minutes (peak 20 minutes (IV))</td>
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</table>

**Special notes**
- Ambulance officers must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval via the QAS Clinical Consult and Advice Line.
- When morphine is administered to a hypotensive patient, ACPs must call for CCP backup where available.
- In the setting of the hypotensive adult patient (SBP < 90 mmHg) all incremental morphine doses are to be no greater than 2.5 mg IV or 5 mg IM.
- GTN is the first line of treatment for autonomic dysreflexia, but morphine should be considered as part of the management regime if the patient is unresponsive to initial treatment.
- Morphine (preference for single IM dose) is a suitable analgesic for the treatment of moderate to severe labour pain in full term mothers in the pre-hospital setting. In all situations paramedics must carefully assess the risks and benefits to both mother and child. Morphine will result in a degree of neonatal respiratory depression (transplacental transfer of morphine is rapid and measurable within 5 minutes of IM/IV administration). Therefore, it is imperative to advise the receiving hospital of the time/dose of morphine given, so that a Paediatrician may attend the delivery as appropriate.
- When administering morphine and midazolam to maintain sedation in the intubated patient, appropriate management is to be instituted to address any adverse side effects such as hypotension. The addition of morphine in this setting will reduce midazolam requirements, provide analgesia and ultimately decrease the risk of hypotension. Under no circumstances are morphine and midazolam to be mixed in the one syringe.
- All cannulae and IV lines must be flushed thoroughly with sodium chloride 0.9% following each medication administration.

**Schedule**
- S8 (Controlled drugs).

**Routes of administration**
- Subcutaneous injection (SUBCUT)
- Intramuscular injection (IM)
- Intravenous injection (IV)
- Intraosseous injection (IO)
**Morphine**

**Adult dosages**

**Significant pain**

<table>
<thead>
<tr>
<th>Route</th>
<th>Dose and Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUBCUT</strong></td>
<td>QAS Clinical Consultation and Advice Line approval required in all situations.</td>
</tr>
</tbody>
</table>
| **IM** | ≥ 70 yrs – 2.5–5 mg  
Repeated at up to 5 mg every 10 minutes.  
**Total maximum dose 10 mg.**  
< 70 yrs – 2.5–10 mg  
Repeated at up to 5 mg every 10 minutes.  
**Total maximum dose 20 mg.** |

**Significant pain**

- **Autonomic dysreflexia** (with systolic BP > 160 mmHg)

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Repeated at up to 5 mg every 10 minutes.  
**Total maximum dose 10 mg.**  
< 70 yrs – 2.5–10 mg  
Repeated at up to 5 mg every 10 minutes.  
**Total maximum dose 20 mg.** |
| **IV** | ≥ 70 yrs – 2.5 mg  
Repeated at up to 2.5 mg every 5 minutes.  
**Total maximum dose 10 mg.**  
< 70 yrs – 2.5–5 mg  
Repeated at up to 5 mg every 5 minutes.  
**Total maximum dose 20 mg.** |

**Paediatric dosages**

<table>
<thead>
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| **IM** | ≥ 1 year – 200 microg/kg  
(rounded down to the nearest 5 kg).  
**Single dose only.** |
| **Volume** | **Weight** | **Dose** |
| 10 – < 15 kg | 2 mg | 0.2 mL |
| 15 – < 25 kg | 3 mg | 0.3 mL |
| 25 – 30 kg | 5 mg | 0.5 mL |

**SUBCUT**

QAS Clinical Consultation and Advice Line approval required in all situations.

**Sedation**

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| **IV** | 2.5 mg  
Repeated PRN.  
**No maximum dose.** |
| **IO** | 2.5 mg  
Repeated PRN.  
**No maximum dose.** |
## Paediatric dosages

- **Significant pain**
- **Autonomic dysreflexia** (with systolic BP > 160 mmHg)

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<th>Route</th>
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<tr>
<td>IM</td>
<td><strong>100–200 microg/kg</strong></td>
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<td>Single maximum dose 5 mg.</td>
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<td><strong>Total maximum dose 200 microg/kg.</strong></td>
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<td><strong>No maximum dose.</strong></td>
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<td>Single maximum dose 2.5 mg.</td>
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<td>Repeated at 50 microg/kg (maximum 2.5 mg) at 5 minute intervals.</td>
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<td><strong>Total maximum dose 200 microg/kg.</strong></td>
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### Sedation

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<td>Single maximum dose 2.5 mg.</td>
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<td></td>
<td>Repeated PRN. <strong>No maximum dose.</strong></td>
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**Note:** QAS officers are **NOT** authorised to administer morphine to paediatric patients presenting with cardiogenic chest pain.