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**Supersedes:** Version 3 (2009)

**Significant Changes:** Additional requirements for oncology patients

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**Designation:** (1) and (2) Consultant Paediatric Anaesthetists and Lead Clinicians Pain Management, (3) Lead Practitioner Pain Management - Nursing (4) Lecturer/Practitioner - Nursing, (5) Principal Pharmacist (6) Senior Clinical Pharmacist

**Modified by:** (2) Dr. D. Patel, (3) Dot Lowthian (6) Adam Sutherland

**Designation:** (2) Consultant Paediatric Anaesthetist and Lead Clinician Pain management, (3) Lead Practitioner (6) Senior Clinical Pharmacist

**Ratification**

**Referred for approval by:** Children’s Medicines Management Committee

**Date of Referral:** January 2011

**Application**

**Patients – Children only**

**Circulation**

**Issue Date** January 2011

**Circulated by:** Children’s Pain Team

**Dissemination to (for Implementation):** All Departments and All Medical Staff

**Review**

**Review Date:** January 2013

**Responsibility of:** Children’s Pain Team
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1. **Protocol for Continuous Morphine Infusion**

   All drug doses to be prescribed on patient’s medication prescription sheet.

1.1 **Children under 1 month of age.**

   Any infant requiring a continuous morphine infusion should be managed in a High Dependency or Intensive Care area.

1.2 **Children under 6 months of age.**

   Dose: 100 microgram/kg of Morphine in 40ml of 0.9% sodium chloride or glucose 5%
   Rate: 0 - 5ml/hour = 0 - 12.5 microgram/kg/hour
   **Maximum dosage with this regime is 12.5 micrograms/kg/hour.**

1.3 **Children over 6 months of age.**

   Dose: 200 microgram/kg of Morphine in 40ml of 0.9% sodium chloride
   Rate: 0-5 ml/hour = 0 - 25microgram/kg/hour
   **Maximum dosage with this regime is 25 micrograms/kg/hour.**
   Doses above 25mcg/kg/hr may be prescribed at consultant anaesthetist discretion.
   Children following spinal surgery may need doses up to 35microgram/kg/hr; this is at the discretion of the consultant anaesthetist.

1.4 **Renal patients or patients who are fluid restricted**

   Dose: 500 microgram/kg of Morphine in 40ml of 0.9% sodium chloride
   Rate: 0-2 ml/hour = 0 - 25microgram/kg/hour

1.5 **Bolus Doses – Administration by medical staff only.**

   Children over 6 months may be administered TWO boluses of morphine within a 24hour period. Must be prescribed as once only.
   Dose: 20microgram/kg
   Interval between doses: 4 HOURS
   If pain is not adequately controlled after TWO doses, contact consultant anaesthetist.

   Preparation: **Using morphine 1mg in 1ml ampoules ONLY**
   1. Calculate the dose required
   2. Withdraw the appropriate volume of morphine from the ampoule and discard the remainder
   3. Dilute to 5ml with 0.9% sodium chloride
   4. Administer intravenously over 3-5minutes

   **EXAMPLE:** For a 20kg patient:

   20kg x 20microgram = 400microgram
   400micrograms = 0.4ml of morphine 1mg/ml
   Dilute to 5ml with 0.9% sodium chloride

Patients in Paediatric Intensive care and Burns PICU Resus areas use a different protocol. However when the patient is moved to any other area the above protocol must be followed.
1.6  Monitoring  
Rate and dosage is adjusted according to child’s pain and sedation scores.  
- All children must in addition to the normal ward observations be managed with a morphine infusion observation chart and continuous pulse oximetry.  
- Infants under 6 months must have additional apnoea monitoring.  
- For safety reasons, if a dedicated IV line is not used an anti-reflux valve must be used to prevent back flow of morphine.  
- Ensure regular anti-emetic for prevention of nausea & vomiting.  
- Whilst Morphine infusion is in progress regular administration of Paracetamol should be encouraged especially when weaning the infusion off.  

**Inform the on-call anaesthetist if:**  
- PAIN SCORE more than 6 on a scale of 0 - 10  
- SEDATION SCORE = 4 unrousable  
- RESPIRATORY RATE below the level for the child’s age (see observation form)  
- OXYGEN SATURATION below level set by anaesthetist

2.  **Equality, Diversity and Human Rights Impact Assessment.**  
2.1  This protocol has had an initial assessment completed and a unique EqIA Registration Number assigned (see document control sheet).

3.  **Consultation, Approval and Ratification Process**  
3.1  **Consultation Process, Consultation and Communication with Stakeholders**  
This reviewed protocol has involved Consultant Anaesthetists, Children’s Pain Team and Pharmacy  

3.2  **Policy Approval Process**  
Children’s Pain Team  

3.3  **Ratification Process**  
Children’s Medicines Management Committee

4.  **References and Bibliography**  