University Hospitals of Derby and Burton
NHS Foundation Trust

Opioid Bolus - Intravenous - Paediatric Full Clinical Guideline

Reference no.: PA MO 02/ Oct 16/v003

1. Introduction

To allow medical staff, Dolphin Unit nursing staff and the Lead Pain Specialist Nurse to administer intravenous morphine to alleviate severe pain in children and young people in clinical settings.

2. Aim and Purpose

Suitable for medical/post-operative/emergency patients with severe pain or children attending the Children's Emergency Department with traumatic injuries. Suitable for patients in whom the oral route is contra-indicated or likely to be ineffective (due to reduced bioavailability)

3. Main body of Guidelines

Paediatric Registrars should be familiar with the guideline and CT1 and 2 may attend a short teaching session by the Paediatric Anaesthetists and be deemed competent before administering this therapy.

Post operative patients need careful assessment of the surgery that has been performed and medications given in theatre.

Consider setting up a Patient Controlled Analgesia System (PCAS) in patients whose severe pain is predicted to be of longer duration or who may require more than 2 bolus doses of IV morphine

Patients receiving an IV morphine bolus require constant supervision for 30 minutes following administration. Medical staff administering IV morphine must be available to review the patient immediately if required

If multiple doses of IV morphine are required and PCAS is inappropriate due to the age and cognitive ability of the child, a continuous IV morphine infusion should be considered.

A separate IV morphine infusion guideline is in existence (Ref PA MO 01) patients are nursed on Dolphin Ward because of the increased frequency and intensity of observations necessary.

Procedure

Naloxone must be prescribed on EPMA prior to commencing administration of IV Morphine

Follow the flow chart – Intravenous Opioid Bolus

Flush each bolus with 2.5 mls sodium chloride 0.9% to ensure no residual morphine remains in the cannula

Observations Respiratory rate

Oxygen saturation

Pulse rate

Sedation score

Record every 5 mins for 30 mins and chart. Continuous oxygen saturation monitoring during and for 30 minutes following administration

The IV opioid bolus protocol should cease:

- When the pain score is reduced to 1 or 2
- If the patient becomes symptomatic with:

Low resting respiratory rate

Age 1 – 5 years <20/min

Age 6 –12 years <12/min

Age 12 –15 years <10/min

Sedation score of 2 (difficult to rouse)

Saturation <90%

Persistent nausea and vomiting

If pain is unrelieved after 2 bolus doses call for senior help

Treatment of Complications

Naloxone may be required for low respiratory rate or sedation score of 2:

Give 1microgramme/kg IV up to maximum 5microgrammes/kg (see PCAS guideline ref PA PCA 01)

Call the Pain Team or senior medical help for advice and assistance

Procedure for giving Intravenous Opioid Bolus

Nursing staff will assess pain regularly and contact the Medical Team/Lead Paediatric Pain Specialist nurse (except on Dolphin where nurses will administer the Morphine bolus) if the pain score is 3 and there is no alternative route of administration for strong analgesia

If the child requires strong analgesia for pain score 3

- Assess the child and if relevant check the operative and anaesthetic history with particular reference to previous medication administered

Prepare Morphine Solution - Check the child's weight

Weight less than 50 kgs

Dilute 200 microgram/kilogram (0.2 mg/kg) morphine to 10 ml

with sodium chloride 0.9%

This gives a concentration of 20 micrograms/kilogram/ml

Weight 50 kgs or more.

Dilute 10 mg morphine in 10 mls of sodium chloride 0.9%
This gives a concentration of 1 mg/ml

Calculate and Prescribe the Correct Dose of Morphine Bolus

Airway/ENT Surgery	50 micrograms/kg	under 50 kg
	2.5mg	over 50 kg
Other Surgery/Painful Medical conditions	100 micrograms/kg	under 50 kg
	2.5mg	over 50 kg

Administration

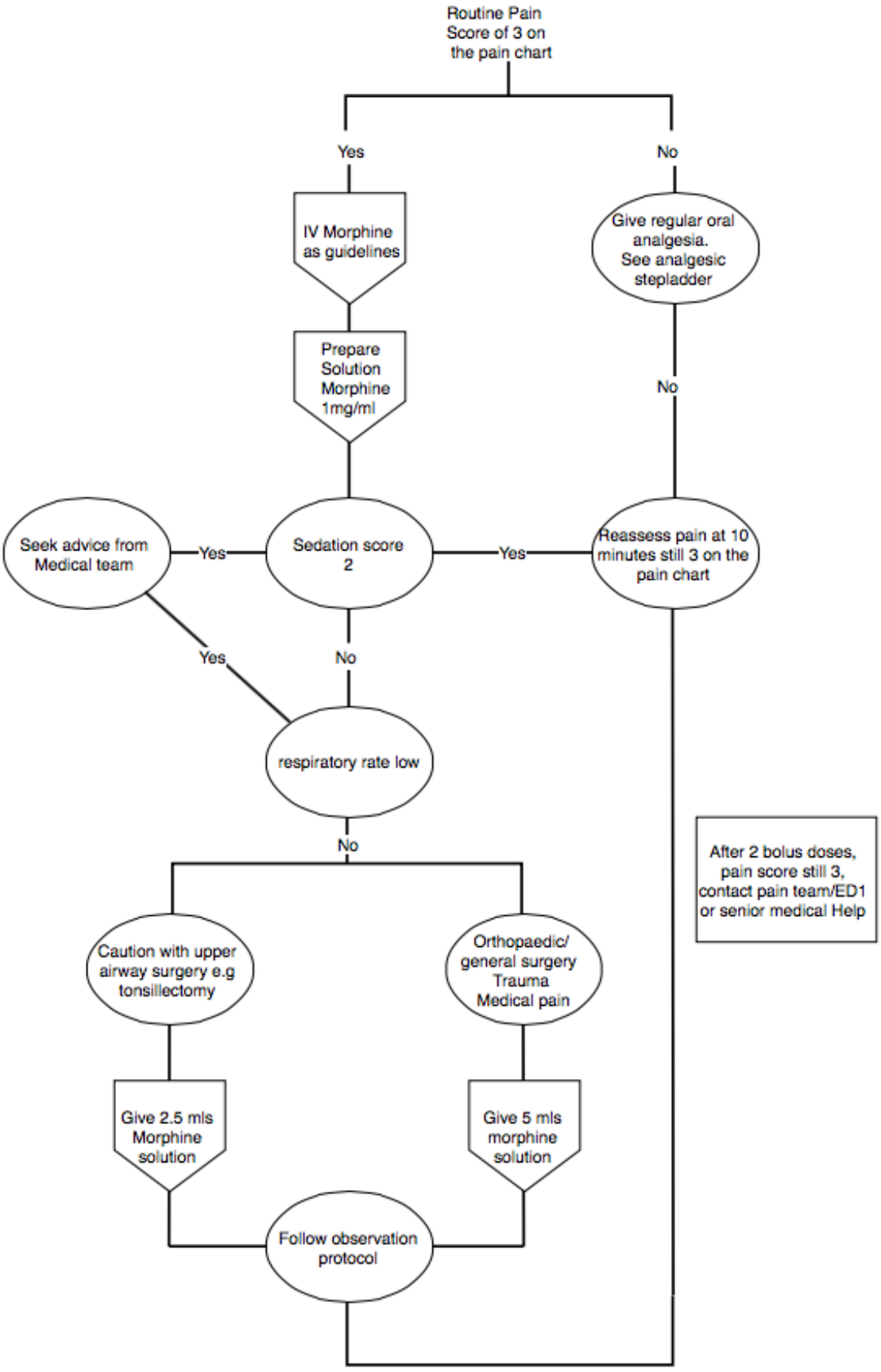
- Record baseline respiratory rate, pulse, oxygen saturation and sedation score prior to the administration of Morphine
- Administer Morphine bolus over 3-5 minutes and with care. Ensure cannula is patent. (See algorithm)
- Continuous oxygen saturation, pulse rate, respiratory rate and sedation score to be observed and recorded every 5 minutes for 30 minutes
- Pain scores should be re-assessed at 10 minutes: if the pain score remains 3 and the observations are satisfactory a second bolus of morphine can be given. Observations must then be continued for a further 30 minutes.

Side Effects

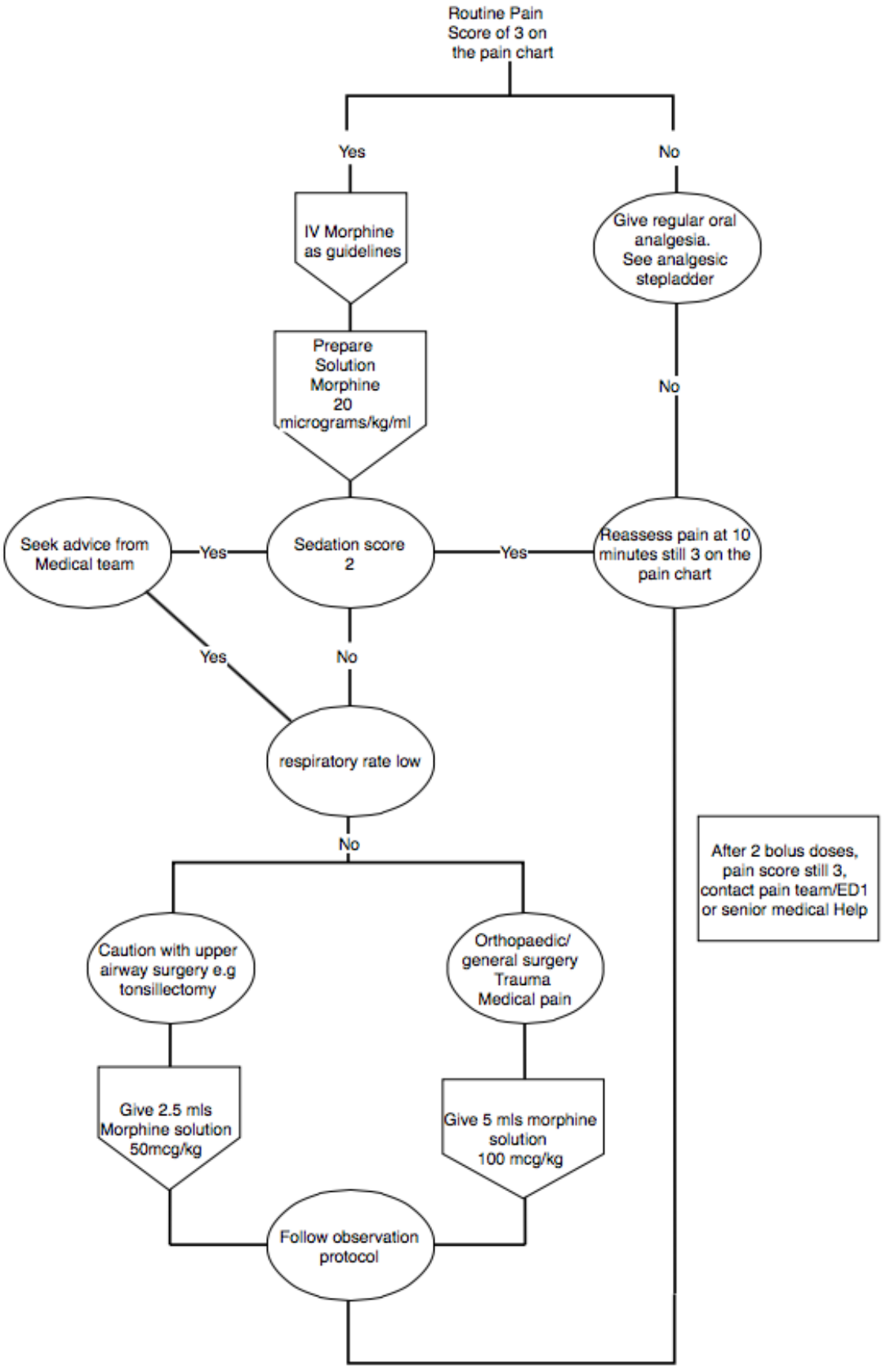
Respiratory depression, over sedation and possible airway obstruction are serious complications and prompt treatment with airway management, oxygen and Naloxone will be required.

If there are problems with side effects or difficulty in controlling pain call for senior advice and assistance

IV Morphine Bolus for Children *Weighing over 50 kg*



IV Morphine Bolus for Children *Weighing less than 50kg*



4. References (including any links to NICE Guidance etc.)

Good Practice in Postoperative and Procedural Pain Management, 2nd edition, 2012.

Association of Paediatric Anaesthetists

Pediatric Anesthesia Volume 22, Issue Supplement s1, pages 1–79, July 2012

Core Standards for Pain Management Services in the UK Faculty of Pain Medicine of the Royal College of Anaesthetists October 2015

Royal College of Paediatrics and Child Health. Safeguarding Children and Young People: roles and competences for health care staff. INTERCOLLEGIATE DOCUMENT. Third edition: March 2014.

Twycross A. Dowden S.J. Stinson S. (Ed's) (2014)

Managing Pain in Children: A Clinical Guide for Nurses and Health Professionals (2nd Edition) pg's 146-149 Wiley-Blackwell Publishing. Chichester

5. Documentation Controls

Development of Guideline:	Liz Taylor
Consultation with:	Derby Hospital NHS Foundation Trust Paediatric Anaesthetist & Pharmacist. Paediatric Matron & Senior Sister- Dolphin
Approved By:	Dr R Bowker 10th October 2016 Integrated Care Division 19/12/16
Review Date:	October 2019 Extended until July 2024
Key Contact:	Liz Taylor
Date of Upload:	22/12/16