Reference *(include title, author, journal title, year of publication, volume and issue, pages)*	Evidence level (I-VII)	Key findings, outcomes or recommendations
Morton N. S, Errera A (2010) APA national audit of pediatric opioid infusions. Pediatric Anesthesia. 20: 119-125	IV (case series)	**A large prospective multicenter audit of neonates, infants and children receiving 1955 opioid infusion modalities who were managed by APSs. Overall incidence of 1:10000 (serious harm). 45 events occurred unrelated to age or modality and ranged from respiratory depression to urinary retention. Programming or prescription errors occurred (9 events) none of which led to harm (with APS oversight)** **There was a low incidence of respiratory depression (2 cases: 1 requiring naloxone) which may have related to the cohort having guidelines and APSs managing the children on opioid infusions. Co-morbidities were identified as a risk and respiratory issues more likely to occur within the first hour. Safety can be improved by the awareness of these risks and careful dosing and monitoring.**
McDonnell C. Opioid medication errors in pediatric practice: Four years' experience of voluntary safety reporting. (2011) Pain Res Manage. Vol 16 No2 March/April: 93-98	IV (case series)	**A review at The hospital for Sick Children Toronto, looked at voluntary reporting errors hospital wide for all intra-hospital paediatric medications.** **The aim was to review opioids specifically, the opioid medication involved, the severity and type of error and where and when they occurred.** **Of the 5935 medication related safety reports, 507 were opioid-related. However, many of these were inappropriate opioid disposal, counting checks and the patients experiencing pain. Administration/prescription errors were the highest incidents including inadequate dosing.** **Education was introduced to new medical staff to fill the knowledge gap including pain assessment.**
Boumeester NJ, Anderson B J, Tibboel D et al (2004) Developmental pharmacokinetics of morphine and its metabolites in neonates, infants and young children. Br J Anasth 92 (2) : 208-17	IV - pharmacokinetic	**A study looking at pharmacokinetics and metabolism of morphine and the metabolites in young children. A morphine infusion was commenced and bolus doses given related to a VAS score of ≥ 4. Blood samples were taken serially/time estimating metabolites M3G and M6G estimating clearance. A mean steady state serum concentration may be variable in dose to achieve compared to age.**
Fukuda T, Chidambaran V, Mizuno T et al (2013) Genetic variants influence the pharmacokinetics of morphine in children Pharmacogenomics 14 (10): 1141-51	IV	**Genotype studies showing significant role other than bodyweight in the pharmacokinetics and metabolites for opioid requirements in children. In the future maybe individualized morphine dosing may be prescribed to fit the variations in multiple genes.**
Weiner C, Penrose S, Manias E, Cranswick N et al. (2016) Difficulties with assessment and management of an infant's distress in the postoperative period: Optimising opportunities for interdisciplinary information-sharing. Sage Open medical Case Reports Vol 4: 1-5	VI	**Postoperatively in a single infant, there were difficulties in managing pain and an episode of over-sedation, occasioning opiate reversal with naloxone. Demonstrated the importance of comprehensive assessment and careful consideration of alternative causes of an infant's distress. Communication and optimising interdisciplinary information-sharing.**

Australian and New Zealand College of Anaesthetists and Faculty of Pain Management (ANZCA) Acute Pain Management: Scientific Evidence (2015) 4th Edition	I-IV	**Evidence summary of SRs, RCTs and Case series reports Chapter 9 the Paediatric patient: subsection 9.5 Opioid infusions and PCA page 444-8**
Clinical Guideline South Australian Paediatric Practice Guidelines – Pain Management and Opioid Safety	VII	**This guideline shows an example of opioids in paediatrics to have the same criteria as the RCH guideline and is therefore supportive in the guidelines developed**
Twycross A, Dowden S, Stinson J. (2014) Managing pain in Children: a clinical guide for nurses and health professionals, 2nd ed, Wiley Blackwell	V11	**All aspects of managing paediatric pain, modalities and pain assessment. This book shows the best evidence with a practical approach to procedural, acute and chronic pain and has been written by internationally respected nurse clinicians References are relevant Pharmacology of Analgesia Drugs Pages 48-85 Managing Acute pain in Children Pages 140-178**
MIMSonline		
Cashman, J.N & Dolin, S.J. (2004) Respiratory and haemodynamic effects of acute postoperative pain management: Evidence from published data. British Journal of Anaesthesia, 93(2) 212-223	II - IV	**Review of publications concerned with the management of postoperative pain (not paediatric specific)). Including cohort studies, case studies, audit reports and randomized controlled trials. Results were that pain services should expect an incidence of respiratory depression of less than 1% and an incidence of hypotension less than 5%**
Jungquist, C.R., Karan, S. & Perlis, M. (2011) Risk factors for opioid induced excessive respiratory depression. Pain Management Nursing, 12 (3) 180-187	Narrative review	**Summary of the evidence on how to assess patients for risk factors for respiratory depression secondary to opioid therapy including pharmacodynamics and interventions.**
Connors, N.J & Nelson, L.S. (2016) The evolution of recommended naloxone dosing for opioid overdose by medical specialty. Journal of Medical Toxicology 12, 276-281	Narrative review	**Review of IV naloxone doses used to reverse opioid overdose – varied practice is reported in the literature in regards to doses**
Coda, B., Tanaka, A., Jacobson, R.C., Donaldson, G. & Chapman, C.R. (1997). Hydromorphone analgesia after intravenous bolus administration. Pain 71 (1)41-8	VI	**Hydromorphone analgesia after intravenous bolus administration Onset of analgesia rapid- within 5 mins**