

# Pharmacological Neonatal Pain Management: Determining Best Practice

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## Background

Following a pharmacological pain management algorithm is effective in reducing neonatal pain, minimising opioid exposure, and reducing variations in clinical practice. The Royal Children's Hospital (RCH) Newborn Intensive Care Unit (NICU) did not have a neonatal pain management guideline and no accepted algorithm for the appropriate escalation of analgesics in post-operative and critically unwell neonates. The safe and appropriate use of opioid adjuncts was also unclear in the clinical setting leading to variations in neonatal pain management practices.

## Aim

To identify evidence-based practice to support the development and implementation of a neonatal pain management clinical guideline in the NICU.

## Method

A literature review was conducted to determine evidence-based neonatal pain management strategies in the NICU. The evidence was then summarised and discussed with key medical, nursing and pharmacy stakeholders within the RCH NICU.

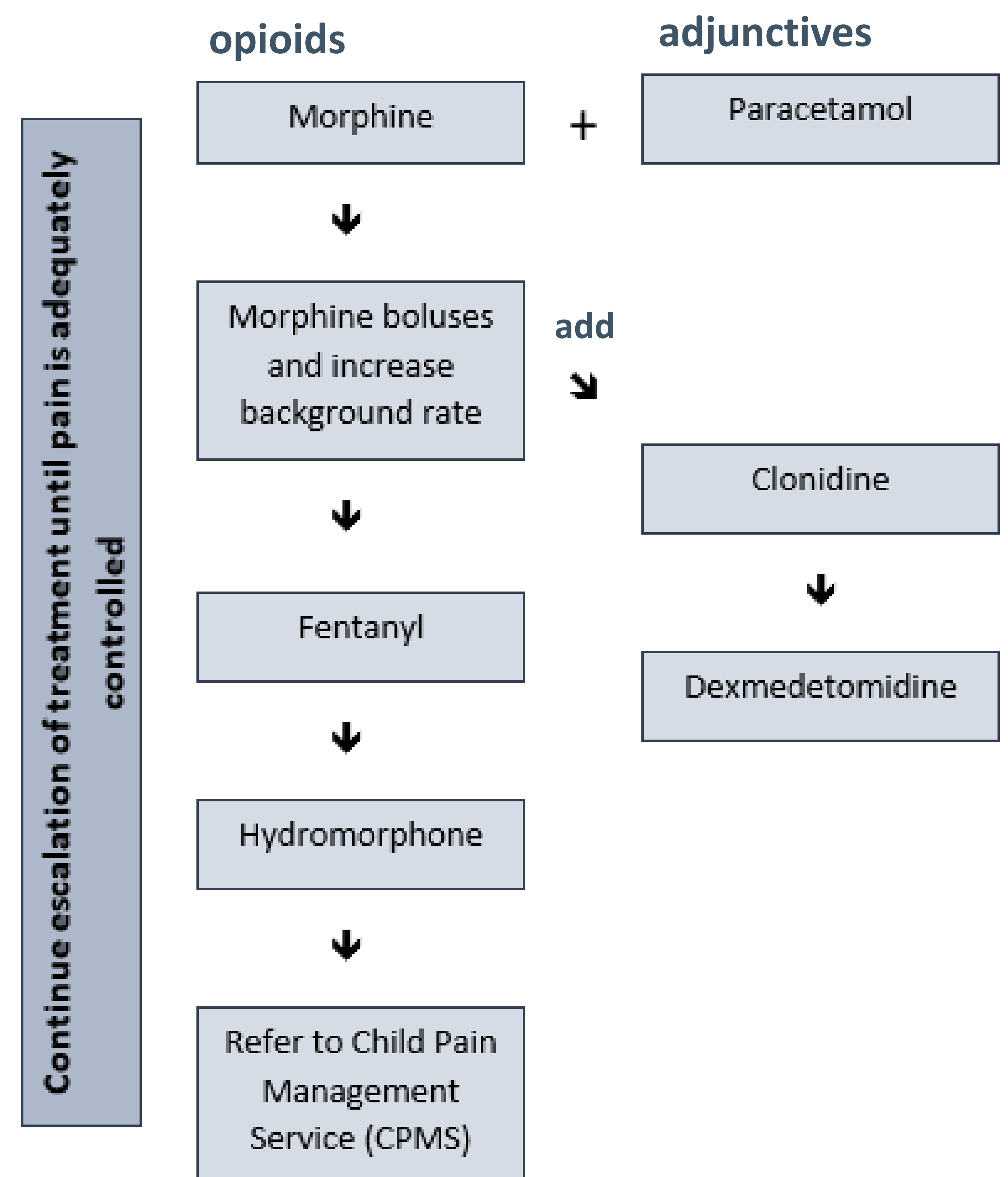
Key experts in the field of pain and anaesthetics within the wider RCH organisation (PICU, Children's Pain Management Services, Pharmacy Improvement Managers in Strategy & Improvement, Medicines Information Pharmacists) and interstate experts were consulted when synthesising the evidence and ensuring its practical application to the clinical setting.

## Results

Treatment with commonly used opioids (morphine and fentanyl) in the NICU, along with appropriate escalation of pain relief adjuncts (paracetamol, clonidine and dexmedetomidine) leads to effective neonatal pain management.



## Flowchart 1: Escalation of analgesics



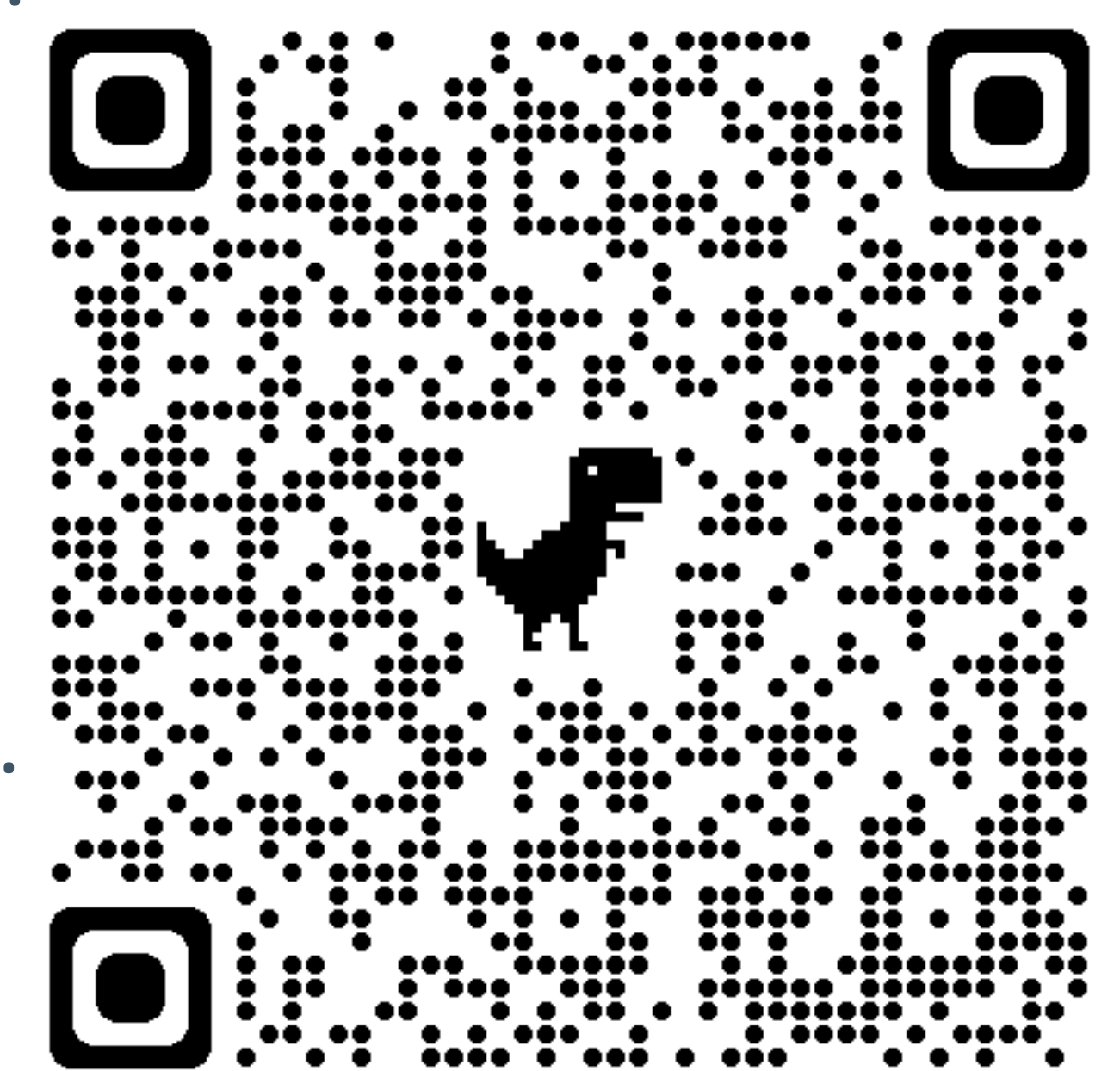
A simple depiction of the escalation of analgesics and sedatives until neonatal pain is adequately controlled was created as shown in Flowchart 1.

This algorithm was incorporated and expanded on in a neonatal pain management guideline at the RCH NICU, which can be accessed via the QR code.

Multiple NICU medical and nursing in-services were conducted, and recordings were made available via learning management platforms.

## Conclusion

An algorithm for the appropriate escalation of analgesia in post-operative and critically unwell neonates provides NICU clinicians with a clear and standardised approach to pharmacological pain management. Future research will include auditing and evaluating neonatal pain practices following the implementation of this guideline.



QR Code to RCH Guideline 'Neonatal Pain Management in the NICU'