FPM

Faculty of Pain Medicine
ANZCA

Age-based opioid prescribing

Lanyard prescribing support guide

May 2024

Age, not weight, is the best predictor of opioid requirements in the first 24-72 hours for the management of moderate to severe acute pain.[1] This can be explained by both pharmacokinetics and pharmacodynamics.[2]

One of the most common reasons for referral to an acute pain service is for review and advice on poorly controlled severe acute pain. Review of the analgesic history often reveals that simple analgesic have been omitted and or that the prescribed and administered opioid dose is inadequate when considering the patient's age.

A simple formula can be used to help predict systemic average morphine requirements in the first 24 hours for the management of moderate to severe acute pain in otherwise well, opioid-naive patients aged 20-70 years.

Average first 24 hour morphine requirement (mg) = 100 – age
(in patients aged 20-70 years)[1]

Clinical Practice Point
Opioid-induced ventilatory impairment (OIVI)

The best indicator of an excessive opioid dose is increasing sedation; a decreased respiratory rate is a late and poor indicator of OIVI.

Administration of any opioid medication should always be accompanied by clinical observations, including sedation score, pain score, and functional ability. Observations should be timed to the expected peak effect of the opioid. If sedation score is 2 or above, withhold any further opioid, initiate an urgent clinical review and escalation of care.

Subsequent opioid dose must be reduced.[4]

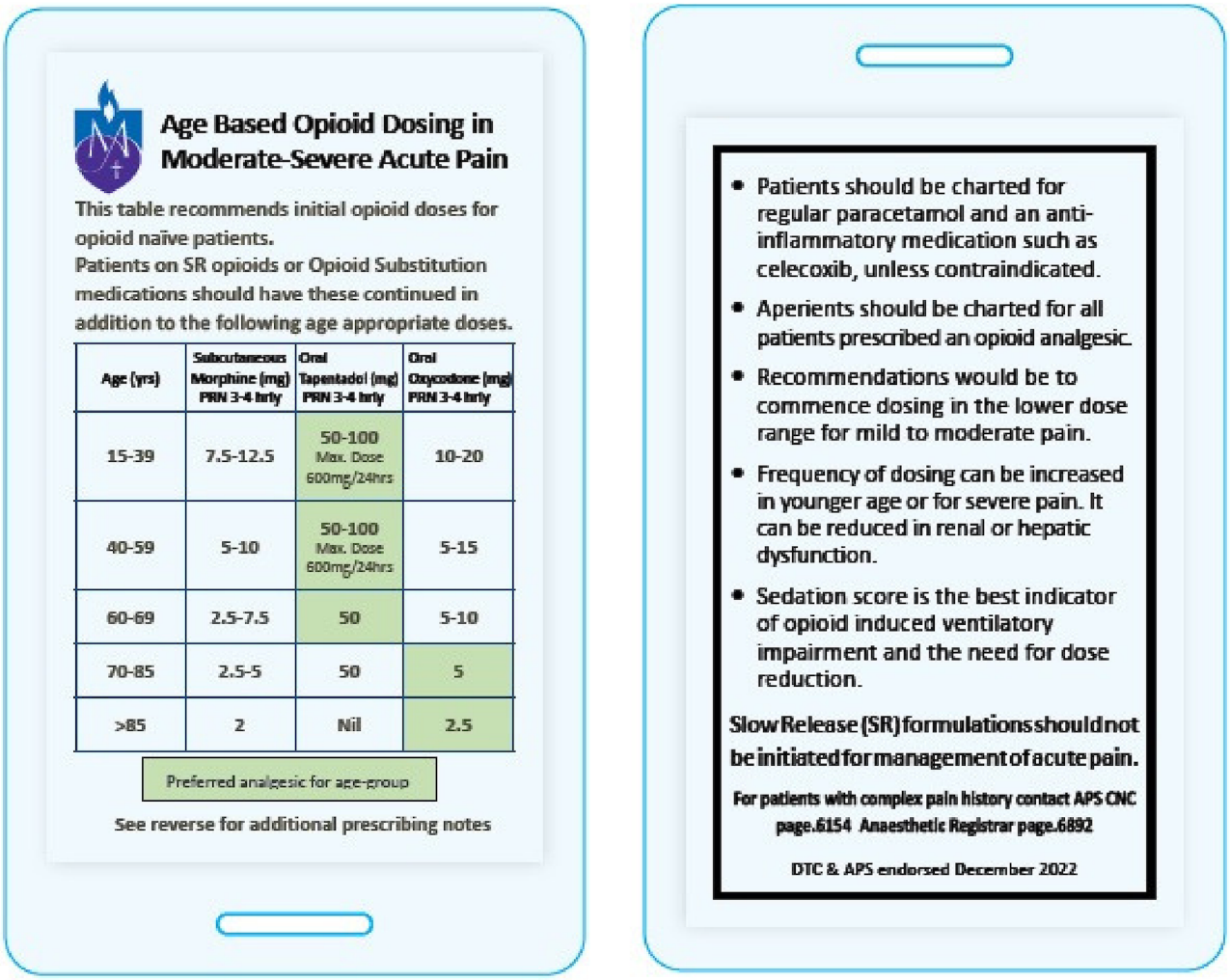
Protocols that guide age-based opioid prescribing should be used to assist all prescribers, particularly junior clinicians, to ensure sufficiently high doses of opioid medications are prescribed in younger patients, while avoiding excessively large opioid doses in older patients.

The use of a quick guide, attachable to ID badges for easy reference has been demonstrated to increase prescriber confidence and improve analgesic prescribing. The example below provides recommendations for age-based opioid dose ranges and includes additional prescribing recommendations that align with clinical standards. The use of decision support tools ensures simple analgesics are included where appropriate and that best practice age-based opioid prescribing is followed for all patients.

The guide should be widely distributed to prescribers and non-prescribers including senior nurses and pharmacists. All clinicians are encouraged to refer to the guide to assist with patient advocacy and promotion of adherence to best practice guidelines.

Age appropriate opioid analgesic dosing should be embedded into treatment protocols and pathways, local policy and electronic prescribing platforms. Care should be taken to ensure consistency of recommendations across all documents and platforms.

Example: Lanyard prescribing guide



Age Based Opioid Dosing in Moderate-Severe Acute Pain

This table recommends initial opioid doses for opioid naïve patients.
Patients on SR opioids or Opioid Substitution medications should have these continued in addition to the following age appropriate doses.

Age (yrs)	Subcutaneous Morphine (mg) PRN 3-4 hrly	Oral Tapentadol (mg) PRN 3-4 hrly	Oral Oxycodone (mg) PRN 3-4 hrly
15-39	7.5-12.5	50-100 Max. Dose 600mg/24hrs	10-20
40-59	5-10	50-100 Max. Dose 600mg/24hrs	5-15
60-69	2.5-7.5	50	5-10
70-85	2.5-5	50	5
>85	2	Nil	2.5

Preferred analgesic for age-group

See reverse for additional prescribing notes

- Patients should be charted for regular paracetamol and an anti-inflammatory medication such as celecoxib, unless contraindicated.
- Aperients should be charted for all patients prescribed an opioid analgesic.
- Recommendations would be to commence dosing in the lower dose range for mild to moderate pain.
- Frequency of dosing can be increased in younger age or for severe pain. It can be reduced in renal or hepatic dysfunction.
- Sedation score is the best indicator of opioid induced ventilatory impairment and the need for dose reduction.

Slow Release (SR) formulations should not be initiated for management of acute pain.

For patients with complex pain history contact APS CNC page.6154 Anaesthetic Registrar page.6892

DTC & APS endorsed December 2022

In adults aged < 70 years old tapentadol IR is the preferred option at St Vincent's Hospital Sydney because of evidence for reduced rates of persistent postoperative opioid use (PPOU) and gastrointestinal adverse effects, therefore it is highlighted in green for those age groups. In older age groups oxycodone IR is used because the high potency of tapentadol 50mg may result in excessive dosing and emerging (non RCT) evidence that it may be associated with delirium in the elderly. Buprenorphine sublingual has not been included in the lanyard to date despite the mode of delivery making it a useful alternative. There is at present limited evidence for its superiority beyond the mode of delivery. It may be included in future iterations if evidence emerges.

The FPM Opioid Calculator should be used to calculate the oral equivalent 24-hour dose requirement for tapentadol, oxycodone or buprenorphine.

http://www.opioidcalculator.com.au/

References:

1. Macintyre PE, Jarvis DA. Age is the best predictor of postoperative morphine requirements. Pain. 1996;64(2):357-364. doi:10.1016/0304-3959(95)00128-X

2. Minto CF, Schnider TW, Egan TD, et al. Influence of age and gender on the pharmacokinetics and pharmacodynamics of remifentanil. I. Model development. Anesthesiology. 1997;86(1):10-23. doi:10.1097/00000542-199701000-00004

3. Liu S, Patanwala AE, Naylor JM, et al. Tapentadol Versus Oxycodone for Opioid-Related Adverse Drug Events and Clinical Outcomes After Inpatient Surgery. J Pain. 2024;25(2):466-475. doi:10.1016/j.jpain.2023.09.007

4. Macintyre, P.E., & Schug, S.A. (2021). Acute Pain Management: A Practical Guide (5th ed.). CRC Press. https://doi.org/10.1201/9780429295058

The Resources for Opioid Stewardship Implementation (ROSI) have been developed by Ms. Bernadette Findlay, Clinical Nurse Consultant, and Associate Professor Jennifer Stevens, Anaesthetist and Pain Medicine Specialist at St. Vincent's Hospital, Sydney, in conjunction with the Faculty of Pain Medicine. Development of the ROSI has been supported by an unrestricted educational grant from CSL Seqirus. CSL Seqirus were not involved in the creation of intellectual property or any other content contained within the ROSI.

ST VINCENT'S HOSPITAL SYDNEY