20 October 2022

Te Whatu Ora
Health New Zealand

Diana

Email: fyi-request-20679-af760cb4@requests.fyi.org.nz

Tēnā koe Diana,

Official Information Act 1982 – OIA2022092801

I refer to your request under the Official Information Act 1982 (the Act) regarding the opiates policy at Wellington Hospital, which was received by Capital, Coast and Hutt Valley District (CCHV) on 28 September 2022:

Can you please provide a copy of the most recent opiate policy in place for Wellington hospital?

District Health Boards were disestablished as legal entities on 1 July 2022 and Te Whatu Ora – Health New Zealand was established as a legal entity under the Pae Ora (Healthy Futures) Act 2022. Capital & Coast and Hutt Valley District Health Boards are now one district known as Capital, Coast and Hutt Valley District. Both locations share information, staff, many services and a single Interim District Director. You will receive a response reflective of your request for either data sets from both locations or specifically one location.

Our response to your request is outlined below.

Response

We have identified 18 items within scope of your request:

1. 1.141 Management of acute pain in pts taking Methadone May 2019
2. 1.142 IV opioids via PCA Policy Sept 2019
3. 1.143 Intermittent IV opioids adult administration April 2019
4. 1.637 IV Opiod ED
5. 1.949 Intermittent subcut opioids adult 2019
6. 1.2077 IV Morphine fentanyl or alfentanil morphine titration PACU 2021
7. 1.101180 Management of acute pain in adult inpatients Oct 2020
8. 1.102273 Morphine administration in labour Nov 2020
9. 1.102598 Suboxone guideline
10. 1.102600 Child Health IV opioid admin ketamine and intranasal fentanyl 2019
11. 1.104127 2DHB Administration of opioid substitution treatment whilst a hospital inpatient
12. 1.104128 Intrapartum intravenous fentanyl prescribing and administration by midwives Nov 2020

13. 1.104464 Palliative care Symptom Control for People Dying with COVID 19 2021
14. 1.105041 Long term harm of Opioids Staff Information April 2021
15. 1.105855 Codeine and Tramadol for analgesia in CCDHB Child Health
16. Hutt Valley Acute Pain Management Opioid Guideline Over 70YRS
17. Hutt Valley Acute Pain Management Opioid Guidelines Paediatrics ED_PACU_ICU
18. HV APMS 15-3 Opioid 15-70 years

Please find the documents attached as appendices.

As this information may be of interest to other members of the public, Health NZ has decided to proactively release a copy of this response on CCHV's website. All requestor data, including your name and contact details will be removed prior to release.

I trust this information fulfils your request. You have the right, under section 28 of the Act, to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or you can free phone 0800 802 602.

Nāku ite noa, nā

John Tait MB BS, FRANZCOG, FRCOG
Interim District Director

Ūpoko ki te uru Hauora | Capital-Coast, and Hutt Valley **M:** 021 429 331 #6914 | **DDI:** +64 4 806 2265 **| Ext:** 82265 or 82259 | **E:** John.Tait@ccdhb.org.nz
www.ccdhb.org.nz | www.huttvalleydhb.org.nz

Document facilitator: CAS Acute Pain Management Service

Senior document owner: Clinical Leader Pain Management

Document number: 1.141 **Issue Date** 14 May 2019 **Review Date** 14 May 2022

Type: Guideline

Name: Management of acute pain in patients taking Methadone for opioid substance use treatment

Purpose
This guideline has been developed by the Acute Pain Management Service (APMS), Wellington Regional Pain Management Service (WRPS) and the Opioid Treatment Service (OTS) at CCDHB to ensure a consistent approach and appropriate pain management for patients with opioid substance use disorder.

Scope
All CCDHB registered nurses, midwives and medical staff.

Procedure
Principles of acute pain management with opioid substance use disorder prescribed Methadone by (OTS).

- To provide effective analgesia (utilising secure drug administration procedures)
- To utilise strategies that help attenuate tolerance
- To prevent opioid withdrawal
- To limit risks and harm associated with the provision of pain management
- Ensure liaison with specialist teams as required and appropriate safe discharge planning.

Suggestions for pain management may include:
- Check Medicines Reconciliation documentation or ensure the usual dispensing pharmacy is contacted to clarify current opioid drug and dosage.
- Simple analgesia (paracetamol, non- steroidal anti -inflammatory NSAID) continue with maintenance dose of methadone (if applicable)
- Regional nerve blockade techniques if appropriate and/or ketamine infusions, continue with maintenance dose of methadone (if appropriate)
- Utilisation of opioids (Morphine/Fentanyl) via secure infusion devices e.g. CADD Solis PCA, continue with maintenance dose of methadone (if appropriate).
- While it is possible to increase the methadone dose up to a maximum of 120mg daily, this is not always ideal as it is slow to titrate and the patient may have well established tolerance to analgesia effect. Any changes to the methadone regime should be discussed with the OTS.

- Consider the illicit use of non-prescribed opioids whilst the patients are admitted. Particular observation for non-prescribed substances (illict) potential abuse when away from the ward.

Discharge planning

Notify the OTS or designated prescriber prior to discharge to provide safe and supportive post discharge care. This is provides an opportunity to ensure that doses are not missed or doubled up, and to safely arrange the prescription of on-going methadone. Do not prescribe these from the ward as it is illegal under Section 24 of the 1975 Misuse of Drugs Act for this to be provided other than by the Gazetted Service.

Ideally the patient should be managing with simple analgesia at the time of discharge with the methadone dose having returned to the pre- operative or pre-injury dose Where opioids for analgesia are needed immediate-release formulations may be appropriate however, they do carry a higher risk of diversion or overdose. It is essential to confer with OTS regarding analgesia plan.

Do not give the patient a written prescription. If the prescription has been authorised telephone of fax the prescription to the pharmacy, and post the original to the pharmacy within two working days. Ensure that it is clear to the professionals involved who will prescribe which medications and when the prescriptions will next be due.

Opioid Treatment Service (hours 0830-1700) ph. 494 0170

Acute Pain Management Service. (APMS) #6449 (24 hour coverage)

References

Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine. (2015). *Acute Pain Management: Scientific Evidence* (4th ed.). Melbourne: Author http://anzca.edu.au.

CCDHB & HVDHB. Preferred Medicines list (2012). *Acute Pain Management Guidelines*. http://ccdhb-pml.streamliners.co.nz.

Ministry Of Health. (2014). *New Zealand Practice Guidelines for Opioid Substitution Treatment***.** http://www.health.govt.nz

Quinlan, J. Cox, F. (2017). Acute pain management in patients with drug dependence syndrome. Available at: https://journals.lww.com.painrpts/Fulltext/2017/08000/Acute_pain_management_in_

Patients_with_drug_dependence_syndrome. Accessed 12th August, 2017

http://www.pharmac.govt.nz/patients/PharmaceuticalSchedule/Schedule?osq=Buprenorphrine%20with%20naloxone

http://mentalhealthservices.org.nz/page/116-specialty+addiction-service+opioid-treatment-service

http://www.health.govt.nz/system/files/documents/pages/medicines-control-restriction-notices-v1.pdf

Document facilitator: CAS Acute Pain Management Service

Senior document owner: Clinical Leader Pain Management

Document number: 1.141 **Issue Date** 14 May 2019 **Review Date** 14 May 2022

Associated document

- Acute Pain Management Service (APMS) CapitalDocs 1.64

Type: Policy

Name: Intravenous opioids via Patient Controlled Analgesia (PCA) infusion devices (adult)

Contents:

Purpose
This policy is for the safe, effective administration and management of intravenous (IV) opioids via PCA infusion devices for the treatment of acute pain in adult patients at Capital & Coast District Health Board (CCDHB).

Scope
All CCDHB registered nurses, midwives and medical staff.

For Nursing and Midwifery staff only:
To ensure competence in the administration of IV opioids using a PCA infusion device the Registered Nurse/Midwife (RN/RM) must complete the following:

- Generic intravenous and opioid certification
- PCA certification

Certification of competence is required on a one-off basis and remains current so long as the RN/RM is maintaining his/her practice. **Wherever possible the patient with a PCA will be cared for by a PCA-certificated RN/RM.**

In some clinical settings a RN/RM with generic IV and opioid certification, but not PCA certification may be assigned the care of a patient with a PCA. This RN/RM must have appropriate direction and delegation from a PCA certificated RN/RM.

RN/RM responsibilities

Maintain complete security of the access codes to the PCA pump at all times. When programming the pump ensure there is no verbal reference to the access code and keep the pump out of sight of the patient and family. Take particular care with patients on a PCA for prolonged periods of time or those who frequently require it for recurrent inpatient admissions to hospital.

Double checking and signing (initials only) is mandatory when:

- Programming the pump at the initial set up
- Re-programming the pump after a prescription change
- Shift handover checks between shifts
- Transition from one ward/unit to another
- Changing the drug reservoir
- Discontinuing the infusion and discarding the drug not used.

Documentation on adult advanced analgesia prescription chart (administration section)

- 4 hourly and 24 totals

Document in the progress notes if above clinically significant and discuss with the APMS and/or the patient's medical team:

- The amount used on your shift in the progress notes
- Attempts and doses given
- Patient's response to PCA
- If an escalation in frequency of vital signs is recommended (e.g., a patient with unstable pain with high analgesia demands and potentially developing complications and/or side effects).

Definitions

Patient Controlled Analgesia (PCA)

PCA refers to methods of prescribed pain relief that allow the patient to self-administer small doses of an analgesic agent as required. It is specifically associated with IV opioid administration via programmable PCA infusion devices.

Nurse Controlled (NCA)

The RN/RM presses the PCA button for the patient after assessing the patient needs. **One RN/RM per shift** should be responsible for the PCA device and administration.

Bolus Dose

The amount of the drug that the patient will receive each time the demand button is pressed.

Delay or lockout interval

The fixed time between boluses programmed into the device.

Continuous/background infusion

A continuous or background infusion is not commonly used with adult patients but is available on the CADD Solis device. Occasionally required for some adult patients if they have constant unrelieved pain or are on oral opioids and require opioids via PCA while nil by mouth. The anaesthetist will calculate the equivalent oral to parenteral dose.

Clinician bolus
A clinician bolus may be prescribed by an anaesthetist in situations where pain is severe and additional opioid is required immediately.

Process

PCA/NCA Prescription
The prescription is charted on the Adult Advanced Analgesia Prescription PCA chart (AAAPC) and National Medication chart by an authorised prescriber (usually an anaesthetist/APMS approved). Out of hours ward teams consult with the Duty Anaesthetist.

PCA therapy is prescribed by the anaesthetist in consultation with the patient and/or the primary nursing and medical staff. The patient's agreement to have PCA therapy is essential for optimal pain management. Patients unable to understand or comply with instructions or those with a physical disability who are unable to operate the PCA button may be appropriate for Nurse Controlled Analgesia (NCA).

Nurse Controlled PCA
Patient criteria for NCA:

- indicates moderate to severe pain and needs strong pain relief
- Not sedated or asleep
- Respiratory rate ≥12 per minutes

Additional Medications with sedative properties
Sedating antihistamines, anti-emetics, sleeping tablets, anxiolytics, anticonvulsants, anti-depressants and other analgesics can be given with PCA if prescribed. More frequent monitoring especially LOC and RR may be required when sedative additives are used concurrently.

Equipment
The designated infusion device is the CADD Solis.

Protocols are loaded for:

- adult and paediatric patients as bolus only
- bolus and continuous infusion
- Continuous infusion alone.

The CADD Administration Set is the only set available for use with this device.

Patient education
A patient information pamphlet is available. Elective surgery patients are given this information at the pre-anaesthesia assessment service. PCA education for those patients who come in acutely is delivered by RN/RM staff or the APMS team.

Discontinuation of PCA
The PCA can be discontinued by a RN/RM in consultation with a medical practitioner when minimal use is required and the patient is able to tolerate analgesia by alternative routes.

- Ensure adequate analgesia is prescribed
- Continue regular pain assessment
- Sign national medication chart once PCA discontinued

- Advise APMS when a PCA has been discontinued.

For more complex patients the ward team should consult with the APMS regarding appropriate analgesia replacement prior to stopping the PCA.

Monitoring the patient with a PCA

The frequency of monitoring BP, pulse rate, temperature and SpO2 should be performed as per EWS.

Specific PCA monitoring requirements:
Pain intensity at rest and movement, level of consciousness and respiratory rate

At commencement of PCA or on discharge from PACU:

- ½ hourly for 2hrs
- 1 hourly for 4hrs
- 2 hrly if patient stable **for 24hrs**

After 24 hours and for the duration of PCA and if the patient remains stable:

- 4 hourly during the day
- 2 hourly at night

If the patient deteriorates - becomes sedated and/or respiratory rate ≤ 12 per minute

- Stop PCA
- Escalate as per EWS guidelines
- Contact APMS.

  ** *Patients with known opioid risk factors may need LOC and RR monitored hourly for the duration of PCA therapy. Anaesthetists/APMS need to indicate this on the PCA prescription chart.*

Bibliography:

Acute Pain Management: Scientific evidence. Second edition (2010). Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine. www.nhmrc.gov.au/publications

CADD-Solis Ambulatory Infusion Pump. (2010). *Smiths Medical Operator's Manual Model 2100 and 2110.*

CCDHB and HVDHB Preferred Medicines List

http://ccdhb-pml.streamliners.co.nz/ acute pain management and neuropathic pain – assessment and treatment

MacIntyre PE, Loadsman JA and Scott DA (2011). Opioids, ventilation and acute pain management. *Anaesthesia and Intensive Care*. Vol 39 No 4.

Jarzyna D, Jungquist CR, Pasero C, Willens JS, Nisbet A, Oakes L, Dempsey SJ, Santangelo D and Polomano RC. (2011). American Society for Pain Management Nursing Guidelines for opioid-induced sedation and respiratory depression. *Pain Management Nursing.* Vol 12 No 3.

Associated documents:

CCDHB policies/protocols:

- Safe Medicines Administration Capital Docs ID 1.964
- Controlled drugs – storage, security and documentation CapitalDocs 1.127
- Essential Vital Sign Measurements, the Early Warning Score and Escalation – Adult Inpatients CapitalDocs 1.3091
- Prescription and administration of intravenous medications and fluids
- Intravenous naloxone (adult) CapitalDocs 1.138
- Management of Adult Inpatients Acute Pain Guideline CapitalDocs 1.101180

Adult Advanced Analgesia Prescription Chart - PCA

Patient Controlled Analgesia Information for patients

Document facilitator: CNM, Acute Pain Management Service

Senior document owner: Clinical Leader, Department of Anaesthesia & Pain Management

Document number: 1.143 **Issue Date** 9 April 2019 **Review Date** 9 April 2022
Version 7

Type: Policy

Name: Intermittent intravenous opioids (adult) - administration

Purpose
This policy is to be followed for the safe and effective administration of intravenous (IV) opioids in the management of acute pain for **adult** patients.

Scope
Includes: All CCDHB registered nurses, midwives and medical staff

Competency required for nursing and midwifery staff only:
To ensure competence in the administration of IV opioids the registered nurse/midwife (RN/M) must:

- Complete the requirements for Generic Intravenous and related therapies Certification including the opioid theory and practical components
- Demonstrate the administration of IV morphine/fentanyl titration according to the guidelines described in this policy
- If using a Patient Controlled Analgesia (PCA) device to administer a bolus, the required PCA competency must be completed.

Certification of competence is required on a one-off basis and remains current so long as the RN/M is maintaining his/her practice. It may be necessary to re-certify if the RN/M leaves the organisation and then returns in the future. A record of certification is maintained by the RN/M and the clinical area in which he/she is employed.

Definitions
Titration
Small repeated boluses of a drug, e.g., morphine, titrated to clinical effect. With IV opioids the beneficial analgesia effects are balanced against common side-effects such as sedation, nausea and vomiting, itch and the more serious opioid induced ventilatory impairment (OIVI).

Opioid Induced Ventilatory Impairment (OIVI)
OIVI is a more complete term than the commonly used respiratory depression encompassing opioid-induced central respiratory depression (decreased respiratory drive), decreased level of consciousness (sedation) and upper airway obstruction (MacIntyre, Loadsman & Scott, 2011).

Indications
Adult patients aged 15 and over are covered by this policy.
For patients aged 15-70 years of age see Appendix 1 flow-sheet.

Document facilitator: CNM, Acute Pain Management Service

Senior document owner: Clinical Leader, Department of Anaesthesia & Pain Management

Document number: 1.143 **Issue Date** 9 April 2019 **Review Date** 9 April 2022
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Patients 15 years and younger are covered by the related protocol Intermittent intravenous morphine (children) CapitalDocs 1.135
Specific IV opioid dose adjustments may be required for patients with certain medical conditions and/or over the age of 70 years. Recommended doses for patients over 70 years of age are included in the flow-sheet diagram in Appendix 2.

Method for intermittent IV bolus

Titration of small increments of morphine or fentanyl according to effect.

- Manual bolus
- PCA

Criteria for intermittent IV opioid administration

The patient:

- Reports moderate to severe pain
- Has a patent iv cannula
- Has a prescription charted by medical staff in the patient's medication chart (see below prescription protocol)
- Has a normal respiratory volume - the rate should be greater than 12 per minute (or discuss with acute pain management service (apms), anaesthetic or medical staff)
- Is alert and orientated, or at the minimum is easy to rouse
- Has a systolic blood pressure within normal values (or discuss with the apms, anaesthetic or medical staff)

Prescription

The opioid is prescribed by the anaesthetist or other medical staff on the non-regular section of the Medication Chart, charted accordingly:

- Morphine (1mg/ml) IV, titrate 1-2mg according to protocol
  RR >12, AVPU Sedation score A or V only (not P or U)
- Fentanyl (10mcg/ml) IV, titrate 10-20mcg according to protocol
  RR >12, AVPU Sedation score A or V only (not P or U).

In most situations the appropriate dose to start with a patient who is opioid naive is boluses of 1-2ml. In certain situations when a patient has severe pain, is not responding to 1-2ml boluses or is tolerant to opioids, larger boluses may be appropriate. Refer to the flow-sheet in Appendix 1 or discuss with APMS, anaesthetist or medical staff.

Preparation, storage and administration of opioid

Follow the steps below to prepare, administer and store morphine or fentanyl for titration by syringe. Syringes should be prepared immediately before use.

- Check the prescription concentration and dose. Two RN's must check drug, concentration, dose and expiry date.
- Prepare morphine 10mg diluted to a total volume of 10ml with sodium chloride 0.9%.

- Prepare fentanyl 100mcg diluted to a total volume of 10ml with sodium chloride 0.9%.
- Label the syringe with a Medicine Added Label:
  - Dose
  - Sodium chloride 0.9%
  - mg/ml or mcg/ml
  - Date and time
  - Signature of rn/m or doctor
- Attach a patient identity label to the syringe

Ensure syringe markings are not obscured by identity label

- IV opioids are to be administered by the RN/M or doctor who prepared the syringe or supervised the preparation of the syringe.

  In exceptional circumstances e.g., a clinical emergency or resuscitation this condition may not be practical. In such situations the usual checking of medication prior to administration is applied.
- Before each dose, assess the patient using the criteria for administration.
- Use the opioid titration flow-sheet (see *Appendix 1*).
- Following administration, the RN/M/doctor will remain with the patient until pain is settled and the patient is stable.
- Document each individual dose in the Medication Chart – date, precise time, volume, mg/mcg administered and signature.
- Doses of Controlled Drugs not required by the patient or balances remaining from part doses must be discarded. An entry must be made on the administration section of the Medication Chart specifying the date and time of destruction, quantity destroyed and full signature of any two RN/M, doctor or pharmacist.
- If unrelieved pain persists seek advice from the APMS or other medical staff.

Watch point: In the ward setting a patient requiring frequent administration of IV opioid (i.e.: three doses per hour) may benefit from referral to APMS for a PCA

Method for clinician bolus administration via PCA infusion device

Indications

The patient on a PCA may require an additional bolus dose in excess of the dose prescribed, because of unrelieved pain. In this situation the anaesthetist or delegated RN/M or doctor may administer additional bolus doses titrated to effect.

Prescription

The administration of a bolus is prescribed on the **Once Only** section of the Medication Chart by an anaesthetist or in consultation with an anaesthetist or APMS Nursing Service.

Document facilitator: CNM, Acute Pain Management Service

Senior document owner: Clinical Leader, Department of Anaesthesia & Pain Management

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The PCA pump must be running to deliver a clinician bolus. It cannot be delivered whilst a PCA dose is in progress. The amount delivered decreases the reservoir volume and increases the given amount, but does not add to the dose counters or to the delivery limit. A clinician bolus may be stopped in progress.

To start a clinician bolus:

1. Make sure the pump is running. Start the pump if necessary.
2. From the **Tasks** menu, press '↑'or '↓' key until **Give Clinician Bolus** is highlighted, then press **Select**.
3. Enter clinician code using '↑' or '↓.' Press select to advance to next digit. Once code is entered, select **Accept Value**.
4. Check the clinician bolus amount is at the desired value. Script and process must be checked by second RN prior to delivering bolus. Select **Deliver**.
5. The screen shows the amount decreasing as the bolus is delivered. You may stop the bolus at any time by selecting **Stop Bolus**.

References

Acute Pain Management: Scientific evidence. Third edition (2010). Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine. www.nhmrc.gov.au/publications

CADD-Solis Ambulatory Infusion Pump Operator's Manual (2010). Smiths Medical.

MacIntyre, P.E., Loadsman, J.A. & Scott, D.A. (2011). Opioids, ventilation and acute pain management. *Anaesthesia and Intensive Care, 39*(4).

Management of acute pain (adults), Preferred Medicines List (PML), CCDHB & HVDHB.

Related CCDHB documents

- Administration and management of intravenous medications and fluids CapitalDocs 1.190
- Essential Vital Sign Measurements, the Early Warning Score and Escalation – Adult Inpatients CapitalDocs 1.3091
- Intermittent subcutaneous opioids (adult) CapitalDocs 1.949
- Intravenous infusion of opioids via Patient Controlled Analgesia (PCA) infusion devices (adult) CapitalDocs 1.142
- Preferred Medicines List (PML) CCDHB and HVDHB 2013
- http://ccdhb-pml.streamliners.co.nz
- Resuscitation and medical emergencies CapitalDocs 1.2411
- Adult Advanced Analgesia Prescription Chart - PCA and Epidural CapitalDocs 1.102209
- Intermittent intravenous morphine (children) CapitalDocs 1.135
- Safe medicines administration Capitaldocs 1.964

Document facilitator: CNM, Acute Pain Management Service

Senior document owner: Clinical Leader, Department of Anaesthesia & Pain Management

Document number: 1.143 **Issue Date** 9 April 2019 **Review Date** 9 April 2022
Version 7

Appendices

Appendix 1: IV opioid titration guidelines – for acute severe pain – patients 15 – 70 Years

Appendix 2 IV opioid titration guidelines – for acute severe pain – patients > 70 years

Disclaimer: This document has been developed by Capital & Coast District Health Board (CCDHB) specifically for its own use. Use of this document and any reliance on the information contained therein by any third party is at their own risk and CCDHB assumes no responsibility whatsoever.

Document facilitator: CNM, Acute Pain Management Service

Senior document owner: Clinical Leader, Department of Anaesthesia & Pain Management

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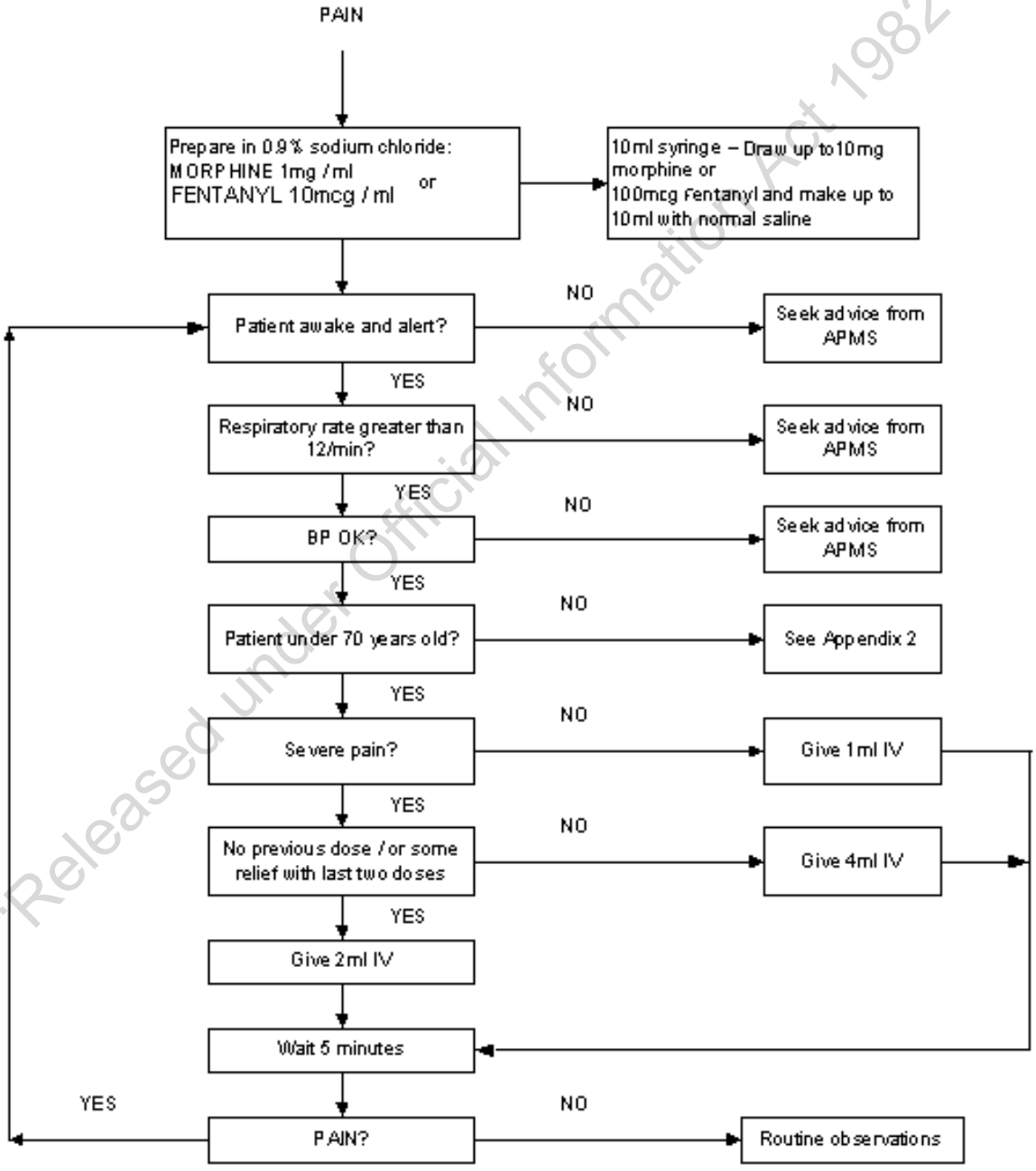
Appendix 1 IV opioid titration guidelines – for acute severe pain – patients 15 – 70 years

- ONLY to be used by staff who have been instructed in this technique.
- NOTE that **PEAK** effect of an intravenous dose may not occur for over 15 minutes so all patients should be closely observed during this time.



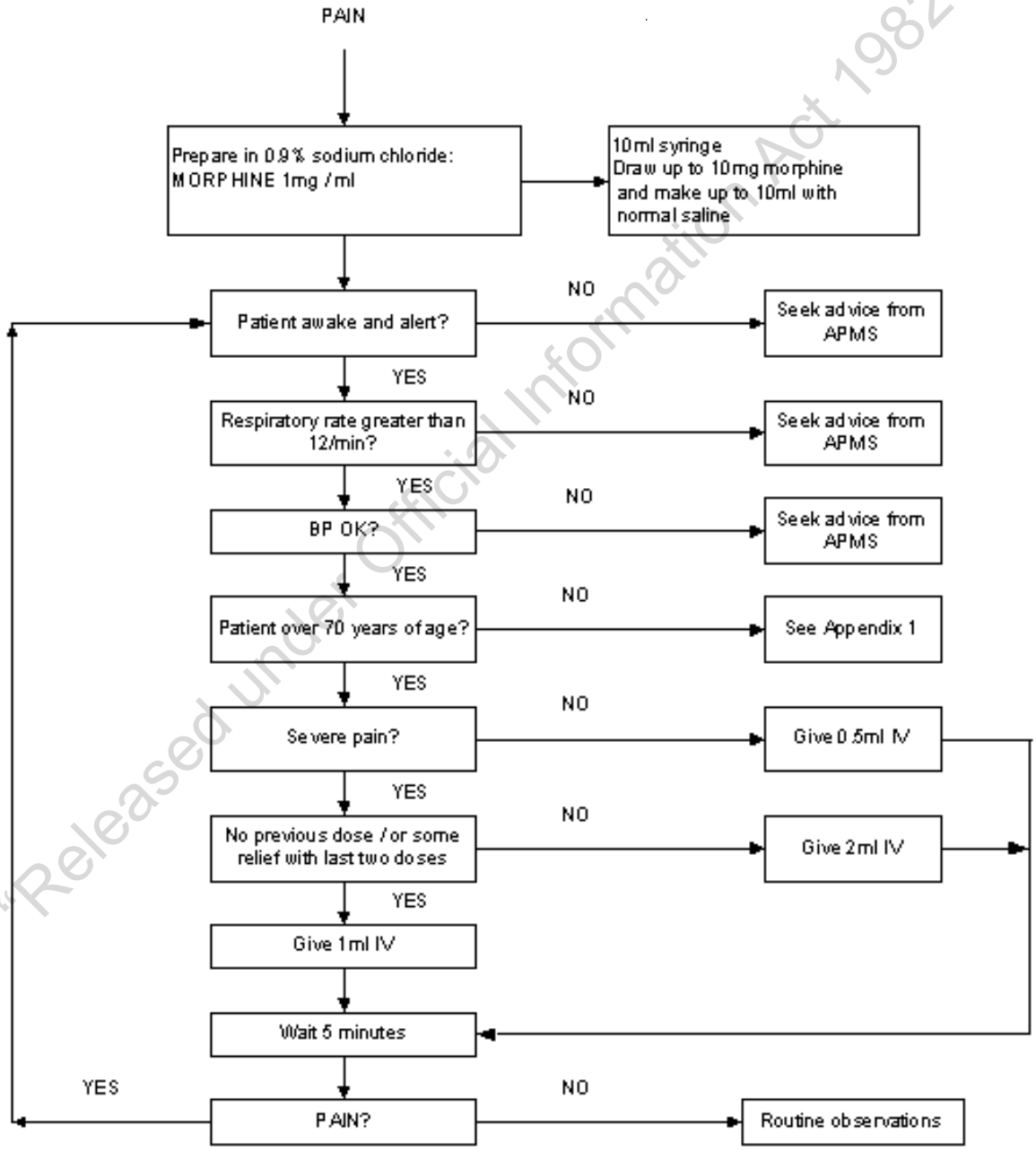
Document facilitator: CNM, Acute Pain Management Service

Senior document owner: Clinical Leader, Department of Anaesthesia & Pain Management

Document number: 1.143 **Issue Date** 9 April 2019 **Review Date** 9 April 2022
Version 7

Appendix 2 IV opioid titration guidelines – for acute severe pain – patients > 70 years

- ONLY to be used by staff who have been instructed in this technique.
- NOTE that **PEAK** effect of an intravenous dose may not occur for over 15 minutes so all patients should be closely observed during this time.



Document facilitator: CNS, Emergency Department

Senior document owner: Clinical Director, Emergency Department

Document number: 1.637 **Issue Date**: 30 May 2019 **Review Date**: 30 May 2022

Type: Policy

Name: Intravenous opioid administration in ED

Purpose
To ensure the safe administration of intravenous (IV) opioids in the management of acute pain in a patient.

Scope
Registered nurses working in the Emergency Department (ED)

Competence required to administer IV opioids, the ED nurse must:

- Complete the required generic IV and related therapies certification including the opioid theory and practical components

Certification of competence is required on a one-off basis and remains current so long as the nurse is maintaining his/her practice.

Definitions
Titration
Small repeated boluses of a drug, e.g. morphine, titrated to clinical effect. With IV opioids the beneficial analgesia effects are balanced against common side-effects such as sedation, nausea and vomiting, itch and more serious opioid induced ventilation impairment (OIVI).

Opioid Induced Ventilator Impairment (OIVI)
OIVI is a more complete term than the commonly used respiratory depression, encompassing opioid-induced central respiratory depression, decreased level of consciousness and upper airway obstruction (MacIntyre, Loadsman & Scott, 2011).

Procedure – IV opioid titration
Prescription
The IV opioid is prescribed by medical staff, nurse practitioner or nurse prescriber on the National Medication Chart under the appropriate section of this chart.

Attention is given to the requirements of the CCDHB Policies:

- Controlled Drugs – storage, security and documentation and
- Safe Medicine Administration f.

Document facilitator: CNS, Emergency Department

Senior document owner: Clinical Director, Emergency Department

Document number: 1.637 **Issue Date**: 30 May 2019 **Review Date**: 30 May 2022

Preparation, administration and disposal of IV opioid

Follow the steps below to prepare, administer and dispose of any unused IV opioid

Morphine

- Prepare morphine 10mg (1ml) diluted to 10ml total volume with sodium chloride 0.9% (1mg/ml).

Fentanyl

- Prepare fentanyl 100mcg (2mls) diluted to a total of 10ml with sodium chloride 0.9%. (10mcg/mL)

- Label syringe with a *Medicine Added* Label:
  - Dose
  - mg/ml or mcg/ml
  - Signature of nurse
    Date and time

    Attach a patient ID sticker to syringe

- Only the person who prepared or supervised the preparation of the syringe should administer the IV opioid

In exceptional circumstances e.g. a clinical emergency or resuscitation this condition may not be practical. In such situations the usual checking of medication prior to administration must still be followed.

- An aseptic non-touch technique (ANTT) is followed during the preparation and administration of the IV opioid.
- Do not dilute IV opioids by drawing up into a commercially available prefilled flush syringe of 0.9% sodium chloride.
- IV opioids are listed as high risk medication and as such require a Full independent two person (double) check for initial administration. However subsequent titrated doses do not require this
- Discard any morphine or fentanyl not immediately required. During titration of analgesia the morphine or fentanyl filled syringe must stay in the possession of the RN. The syringe labelled with a drug additive sticker and a patient ID sticker must be retained on a designated medication tray at this time and not on the person of the RN.

  Morphine or fentanyl is titrated at 1 - 2ml/dose, with a minimum of 5 minutes between each dose. Where the patient has severe pain and has had no prior dose or minimal relief from the previous 2 doses a 4ml dose may be administered. Note that peak effect of an IV opioid dose may not occur for over 15 minutes.

Observations and monitoring

Document baseline vital signs, including respiratory rate, and pain score prior to administration of IV opioid. Post administration close observation of the patient's clinical status must be maintained. This includes:

- Vital signs within 15 minutes of a bolus dose
- Respiratory rate and volume – the rate should be greater than 12 per minute

- Level of consciousness - is alert and orientated, or at a minimum is easy to rouse
- Systolic blood pressure - within normal limits
- Monitor response to pain relief and reassess pain score and the need for further analgesia

IV Morphine bolus in children < 50 kg

Morphine is prepared for bolus dose administration according to a specific concentration of morphine, based on the child's weight, i.e. 0.2mg/kg morphine made up to a total of 10mls with 0.9% normal saline (1ml = 0.02mg/kg) and titrated in increments to effect.

Example

- 5kg x 0.2 = 1mg morphine
- 24kg x 0.2 = 4.8mg morphine

This dose of morphine is prepared and made up to 10mls with 0.9% sodium chloride. Administer in 1-2mls per bolus dose.

Respiratory rate >20 in an infant and > 15 in toddler and older.

A colour-coded sticker system for the medication chart used by Paediatrics is available for use when prescribing intermittent IV morphine based on the weight of a child.

Paediatric morphine bolus in children > 50kg is diluted as 10mg of morphine to a total of 10mls with 0.9% sodium chloride, as in adults.

References

Capital and Coast DHB Policies

- Controlled Drugs – storage, security and documentation CapitalDocs ID 1.127
- Safe Medicine administration . CapitalDocs ID 1.964
- Intermittent intravenous opioids (adult) – administration CapitalDocs ID 1.143
- Intravenous (IV) opioid administration, ketamine and intranasal fentanyl for children CapitalDocs ID 1.102600

Document facilitator: CNM, Acute Pain Management Service
Senior document owner: Clinical Director, Department of Anaesthesia and Pain Management
Document number: ID 1.949 **Issue Date**: 25 June 2019 **Review Date**: 25 June 2022

Type: Policy

Name: Intermittent subcutaneous opioids (adults)

Purpose
This policy is to be followed for the safe and effective administration of intermittent subcutaneous opioids in the management of pain.

Scope
This policy is DHB-wide and refers to all health care professionals (HCP) responsible for the administration of intermittent subcutaneous opioids in the management of acute or chronic pain.

Policy content:

Indications
- This analgesia method is useful for the treatment of patients with moderate to severe pain requiring intermittent subcutaneous opioids.
- Absorption of opioids from the subcutaneous route has been found to be comparable to the intramuscular route.
- Opioids may be administered like any subcutaneous injection or via a subcutaneous cannula. A subcutaneous cannula may be sited in theatre or the ward when frequent injections are anticipated. For one or two injections it may be appropriate to avoid the placement of a cannula.

Contraindications
Caution is needed particularly in the elderly who may require more attentive monitoring of dose and effects.

Except for palliative patients, do not use this route of administration when the peripheral circulation is poor (cold and clammy from shock or stress) and if the patient is hypothermic. This is because absorption from the subcutaneous site (and intra-muscular site) may be erratic.

Document facilitator: CNM, Acute Pain Management Service
Senior document owner: Clinical Director, Department of Anaesthesia and Pain Management
Document number: ID 1.949 **Issue Date**: 25 June 2019 **Review Date**: 25 June 2022

Process

Process	
Prescription	• Prescribe the medicine on the non-regular section of the Medication Chart. • Refer to CCDHB Preferred Medicines List (PML) for the most up-to-date subcutaneous opioid prescribing guidelines/considerations: - Treatment of acute pain - End of life care (last 72 hours) - Opioid Conversions - Pain Management - Opioid conversions – Palliative Care.
Site selection and device considerations	• Sub-clavicular/chest region or upper arm are common sites for subcutaneous cannula insertion. Refer to Continuous subcutaneous infusion of medication via syringe driver (adult inpatients) policy for further information on subcutaneous cannula site selection. • In patients who are restless or agitated, consider inserting the cannula in the upper scapula. Use *Saf-T™ Intima* rather than Insuflon device to allow needleless access. • *Saf-T Intima™* can remain in situ for up to 10 days provided there are no issues with the cannula site. • *Saf-T Intima™* cannot be primed prior to insertion. Prime a suitable IV access bung and connect to the end of the device for intermittent use. Flush the device with 0.5 ml of normal saline following administration. • The Insuflon device cannot be flushed.
Insertion of subcutaneous cannula	Equipment: • 24 gauge (yellow) BD Saf-T-intima™ or Insuflon • Chlorhexidine swabs • Small transparent dressing eg. Tegaderm/Opsite • Prescribed opioid • 1 ml syringe • Filter needle

	Procedure: • Select a suitable site, clean area well with chlorhexidine swabs and allow to dry fully. • Pinch up a fold of skin and insert the primed cannula through the skin at a 30-45° angle into loose tissue rather than deep attached tissue. • Cover cannula with a transparent dressing. Apply label with the date of insertion. • Document insertion and review date in patient's chart.
Administration	• Refer to the prescription chart for the appropriate subcutaneous opioid prescription for your selected patient. • Select the opioid ampoule and draw up the dose you have selected from the range prescribed using a filter needle. **Do not dilute.** It is more comfortable and more effective for the patient to receive smaller volumes subcutaneously. • Check correct patient identification as per safe medicine administration policy. • Check the cannula site for inflammation, discomfort, discharge or a lumpy appearance before injecting. Resite cannula if needed. • Wipe injection site access port with an alcohol swab and wait for it to dry for at least one minute. • Inject slowly. • Document subcutaneous opioid administration on medication chart as per policy.
Monitoring post administration of subcutaneous opioids	**Except** for palliative care patients, observations are required 15 minutes following administration, then hourly for two hours. Observations include pain score, sedation level and respiratory rate. • Pain intensity – assess pain score as required. • Sedation scale - the patient should be alert and oriented. - withhold additional opioid if sedation is P or U on the AVPU scale and seek medical review. - if pain persists although the patient is heavily sedated, contact medical staff or the Acute Pain Management Service (APMS). • Respiration – check that the patient has good respiratory volume and the rate is no less than 12 per minute. • Check that patient is warm and has good peripheral circulation

	For palliative care patients, monitoring may only focus on evaluation of effectiveness of analgesia and medication side effects. For unrelieved pain in palliative care patients, contact Palliative Care Service. For all other patients with unrelieved pain an APMS and/or medical review and may be required for assessment for a PCA.
Change of cannula site	• Frequency of site change should be determined on an individual patient basis. Inflammation, discomfort, lumpiness or discharge around the cannula site will require removal of the cannula and replacement at another site. • Saf-T Intima™ may last up to 10 days. Insuflon must be changed at least every 72 hours. • The site should be observed daily and prior to medication administration.

Related documents:

CCDHB documents:

- Essential Vital Sign Measurements, the Early Warning Score and Escalation – Adult Inpatients CapitalDocs 1.3091
- Intermittent subcutaneous opioids (adult) CapitalDocs 1.949
- Preferred Medicines List (PML) CCDHB and HVDHB http://ccdhb-pml.streamliners.co.nz
- Resuscitation and medical emergencies CapitalDocs 1.2411
- Intermittent intravenous morphine (children) CapitalDocs 1.135
- Safe medicines administration CapitalDocs 1.964
- Controlled Drugs - storage, security and documentation CapitalDocs 1.127
- Continuous subcutaneous infusion of medication via syringe driver (adult inpatients) CapitalDocs 1.103384

References:

Capital Coast Health Ltd. (2018). *Preferrred Medicines List 2018*. Medicines Review Committee C&

Cooper, I M (1996). Morphine for postoperative analgesia. A comparison of intramuscular and subcutaneous routes of administration. *Anaesth Intens Care* 24: 574-578.

Document facilitator: ACNM PACU

Senior document owner: Ops. Manager ATIP

Document number: 1.2077 **Issue Date** 13 January 2021 **Review Date** 13 January 2024

Level: Service PACU Wellington & Kenepuru

Type: Protocol

Name: Intravenous morphine, fentanyl or alfentanil and morphine titration (adult) – PACU

Purpose
This protocol is to be followed for the safe prescription and administration of intravenous morphine, fentanyl, or a mixture of morphine and alfentanil in the Post Anaesthetic Care Unit.

Scope
All CCDHB registered nurses and anaesthetic staff practicing in the Wellington or Kenepuru PACU.

Preconditions
To ensure competence in the administration of IV opioids the PACU nurse must:

- Have a current basic and area specific IV certification, and central venous certification if accessing a central line for opioid titration
- Be deemed competent by a PACU IV trainer to administer IV opioids
- Demonstrate the administration of IV morphine, fentanyl or combination opioid titration according to the guidelines described in this protocol
- Be competent using a range of pain assessment tools to determine severity of pain

Indications
Initiation of this protocol is indicated for patients >15 years of age in moderate to severe pain during the immediate postoperative period, while in the PACU.

Procedure(s)
Criteria for initiating IV morphine, fentanyl or alfentanil and morphine titration per this protocol:

- Morphine, fentanyl or alfentanil and morphine prescribed per this protocol, described below
- Patent IV access
- Patient in the PACU
- 1:2 maximum nurse to patient ratio (ideally 1:1)

Prescription
The morphine, fentanyl or alfentanil and morphine protocol is prescribed by the anaesthetist and handwritten on the 'As Required (PRN) Medicines' part of the

national medication chart. Acceptable dose abbreviations are italicised below, and may be used when prescribing this protocol.

- The prescription should state either Morphine 10*mg* in 10*ml* saline or Fentanyl 100*mcg* in 10*ml* saline, and indicate a bolus range in *ml*
- If prescribing a combination, the prescription must indicate the amount of alfentanil and morphine to be made up in 10*ml* saline, and a bolus range in *ml*
- The prescription may include a maximum dose before anaesthetic review required
- The prescription is to be made only by a specialist anaesthetist or anaesthetic registrar, and as per 'Administration and management of intravenous medicines and fluids – excluding neonates' CapitalDocs 1.190

Preparation, storage and administration of morphine, fentanyl or alfentanil and morphine mixture

- Using a 10 ml syringe, prepare Morphine 10mg or Fentanyl 100mcg, diluted to a total volume of 10ml with normal saline. If using alfentanil and morphine, prepare 1mg (1000mcg) alfentanil and 10mg morphine in a syringe and dilute to a total volume of 10ml with normal saline
- Label the syringe with an appropriate sticker and specify the drug concentration/s
- Attach a patient identity label to the syringe
- IV opioids are to be ideally administered by the nurse or doctor who prepared or opened the syringe or supervised the preparation of the syringe
- Use the **opioid titration algorithms** (see appendices)
- All patients must remain in PACU after receiving IV opiates per PACU discharge policy
- Document each individual dose in the PRN section (next to the prescription) in the national medication chart
- Discard the syringe and any remaining drug on the patients discharge from PACU, as per the controlled drugs – storage, security and documentation policy CapitalDocs 1.127

References

Edmond Charlton, J. (Ed.). (2005). *Core curriculum for professional education in pain*. Seattle: IASP Press.

Schug, S.A., Palmer G.M., Scott, D.A., Halliwell, R., & Trinca, J. (Eds.). (2015). *Acute pain management: Scientific evidence* (4th ed.). Melbourne: Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine.

Associated documents

- Intermittent intravenous opioids (adult) – administration CapitalDocs 1.143
- Controlled drugs – storage, security and documentation CapitalDocs 1.127
- Intravenous (IV) therapies and medications CapitalDocs 1.101584
- Intravenous naloxone (adult) CapitalDocs 1.138
- Managing acute pain in the opioid-tolerant patient (adult) CapitalDocs 1.141

- Discharge – PACU CapitalDocs 1.1638
- Administration and management of intravenous medicines and fluids – excluding neonates CapitalDocs 1.190

Appendices

- **Appendix 1:** PACU alfentanil and morphine mixture (adult)
- **Appendix 2:** IV opioid titration guidelines for acute pain for patients 15 – 70 years of age **and** greater than 50kg weight
- **Appendix 3:** IV opioid titration guidelines for acute pain for patients over 71 years of age **or** under 50kg weight

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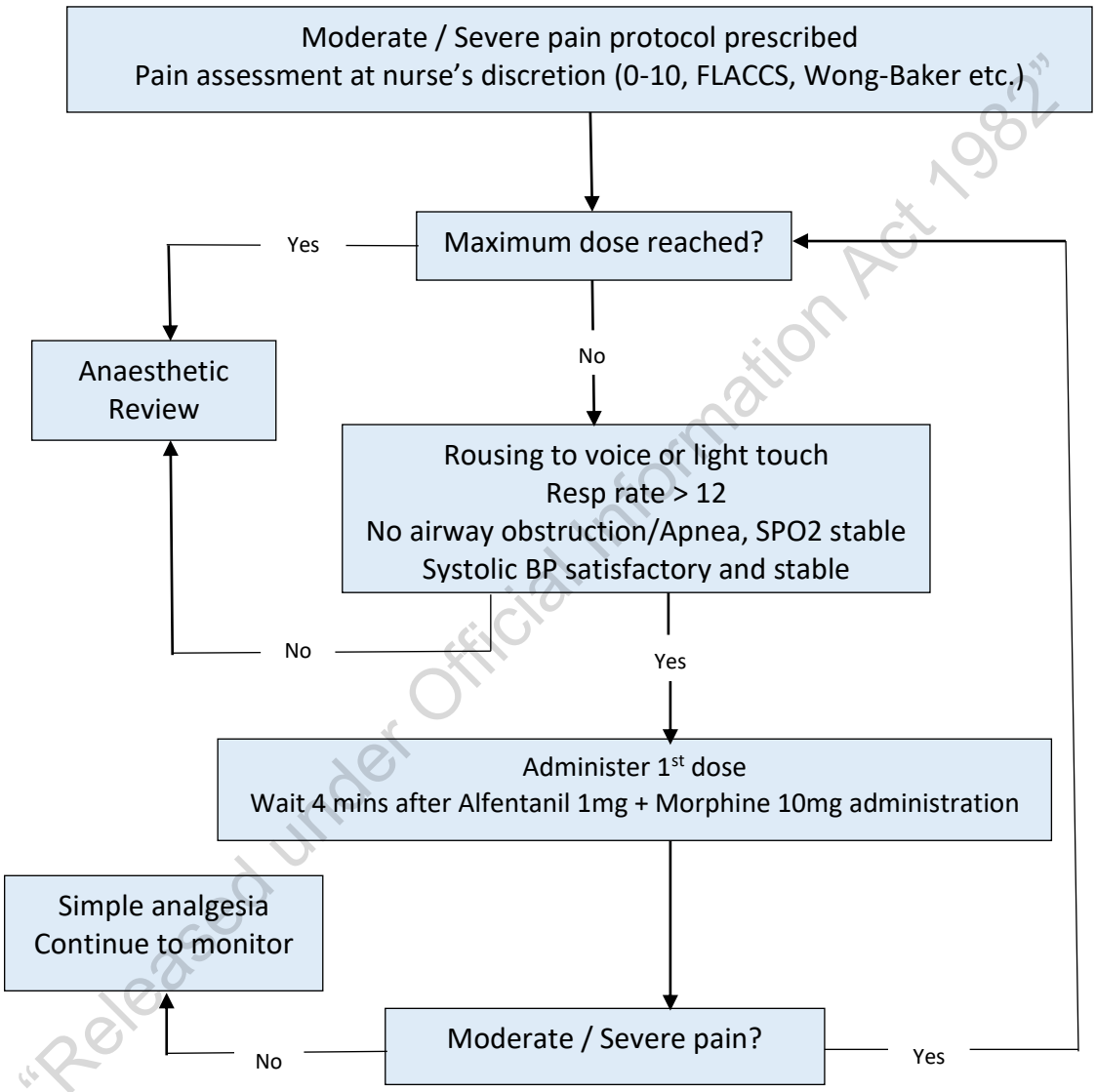
Document facilitator: ACNM PACU

Senior document owner: Ops. Manager ATIP

Document number: 1.2077 **Issue Date** 13 January 2021 **Review Date** 13 January 2024

Appendix 1: PACU IV Alfentanil and Morphine Mixture (Adult)

FOR USE IN WELLINGTON & KENEPURU PACU ONLY



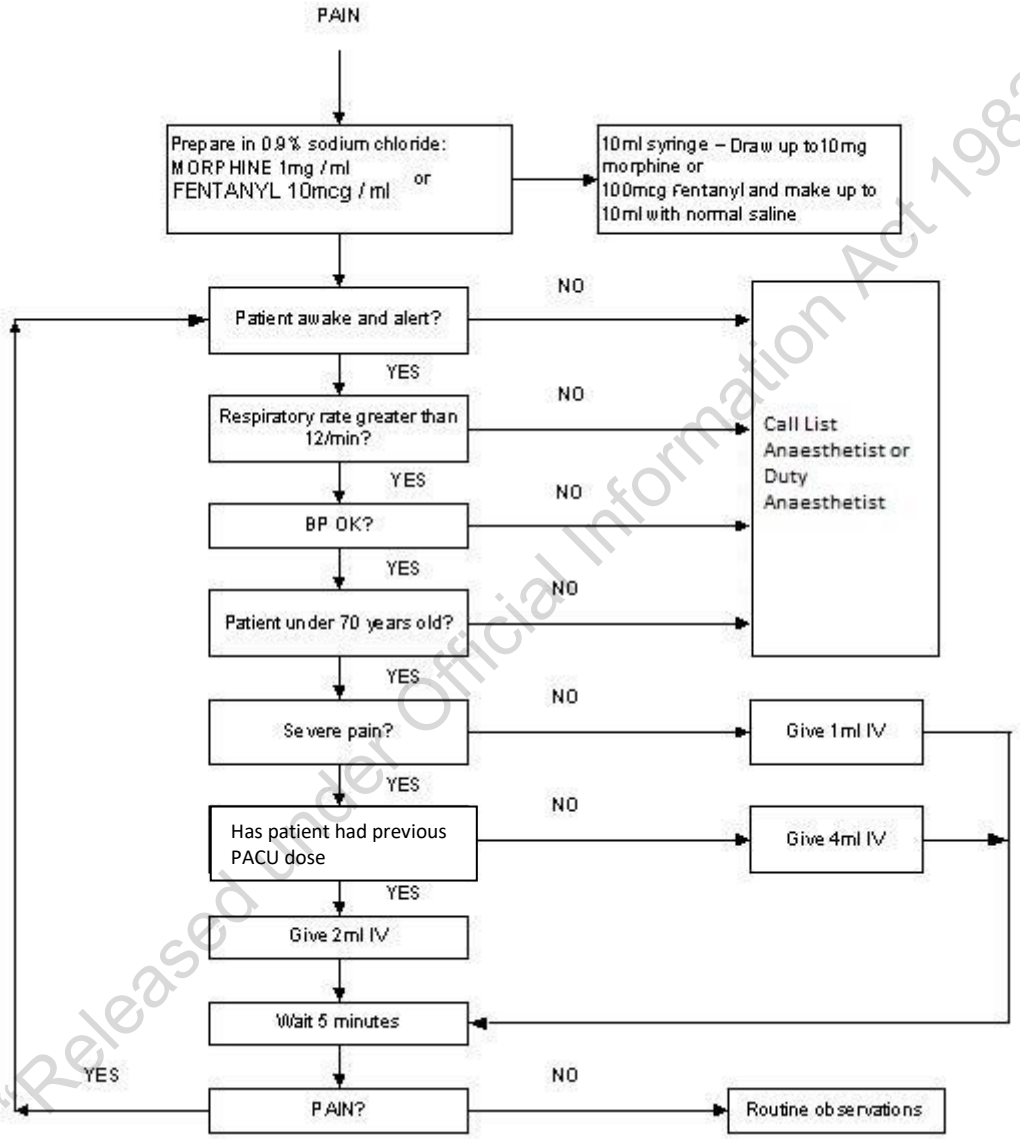
Document facilitator: ACNM PACU

Senior document owner: Ops. Manager ATIP

Document number: 1.2077 **Issue Date** 13 January 2021 **Review Date** 13 January 2024

Appendix 2: IV opioid titration guidelines for acute pain for patients 15 – 70 years of age **and** greater than 50kg weight

- ONLY to be used by staff who have been instructed in this technique
- NOTE that **PEAK** effect of an intravenous dose may not occur for over 15 minutes so all patients should be closely observed during this time



After 10mL/10mg of morphine or 10mL/100mcg fentanyl seek advice from the List Anaesthetist or Duty Anaesthetist

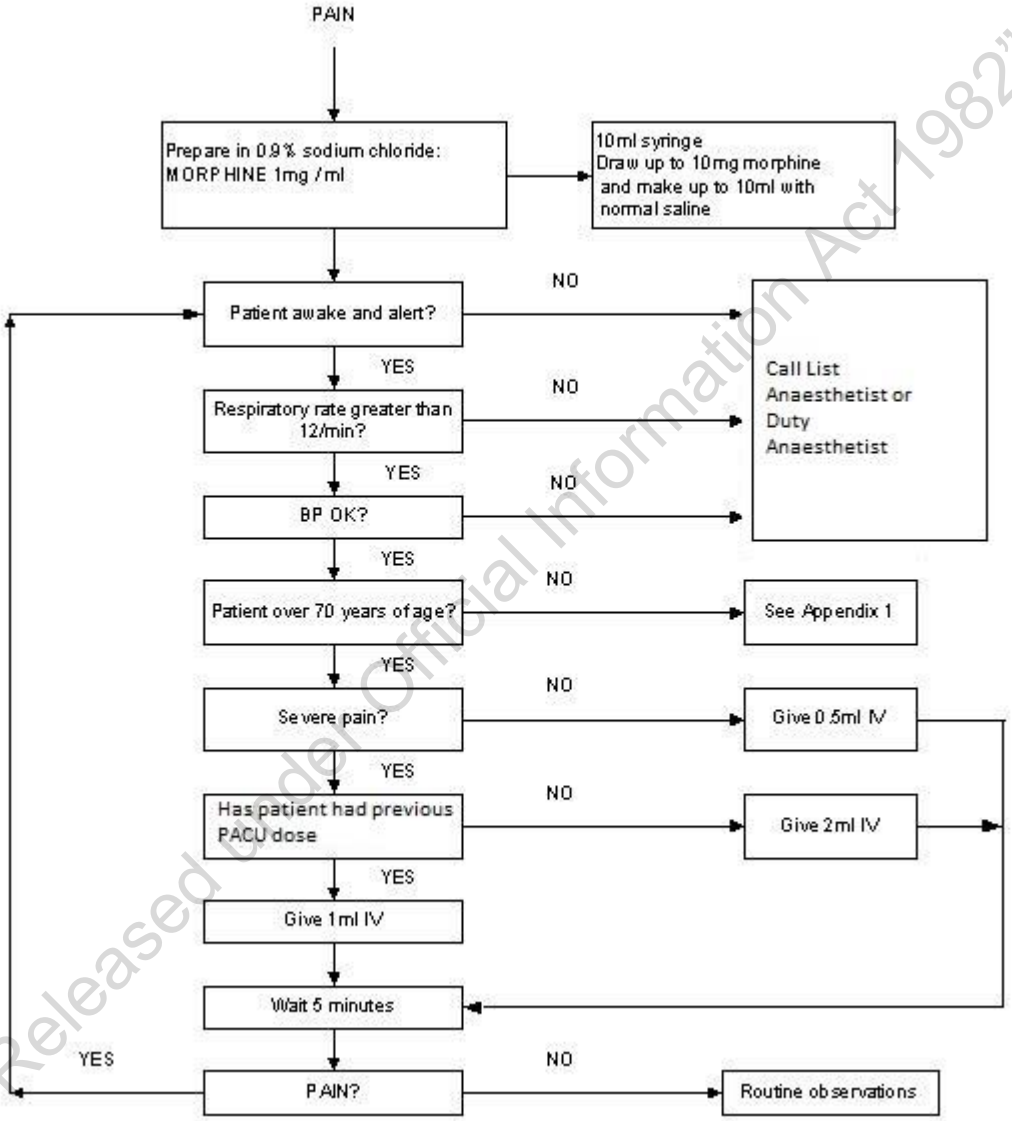
Document facilitator: ACNM PACU

Senior document owner: Ops. Manager ATIP

Document number: 1.2077 **Issue Date** 13 January 2021 **Review Date** 13 January 2024

Appendix 3: IV opioid titration guidelines for acute pain for patients over 71 years of age **or** under 50kg weight

- ONLY to be used by staff who have been instructed in this technique NOTE that **PEAK** effect of an intravenous dose may not occur for over 15 minutes so all patients should be closely observed during this time



After 10mL/10mg of morphine or 10mL/100mcg fentanyl seek advice from the List Anaesthetist or Duty Anaesthetist

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

Document number: 1.101180 **Issue Date**: 16 October 2020 **Review Date**: 16 October 2023
Version 3

Level Organisation Wide

Type: Guideline

Name: Management of Acute Pain in Adult Inpatients

Purpose

This acute pain management guideline provides appropriate clinical information for CCDHB Clinical staff to assist in assessment and management of acute pain, safe opioid prescribing, effective monitoring, treatment of opioid-induced ventilatory impairment (OIVI) and analgesia discharge planning.

Scope

All CCDHB Clinical staff working in adult inpatient settings.

This guideline is for adult inpatients only.

Patient should be referred to specialist services in the following situations:

- for opioid tolerant patients in acute pain, call the Acute Pain Management Service (APMS)
- for patients with pain from progressive illness who have palliative care needs, call the Hospital Palliative Care Team
- if uncertain about what to chart, call the Acute Pain Management Service
- for patients on Opioid Substitution Therapy, refer to specialty opioid addiction services while in hospital

Acronyms

APMS	Acute Pain Management Service
AVPU scale	Alert/responding to voice/responding to pain/unconscious
BMI	Body mass index
BP	Blood Pressure
CADS	Community Alcohol and Drug Services
COPD	Chronic obstructive pulmonary disease
eGFR	Estimated Glomerular Filtration Rate
HR	Heart rate
IV	Intravenous
MAOI	Monoamine oxidase inhibitors
mg	Milligrams

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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Acronyms (continued)

NBM	Nil by Mouth
NSAIDs	Non-steroidal anti-inflammatory drugs
OIVI	Opioid Induced Ventilatory Impairment
OST	Opioid Substitution Treatment/therapy
PO	Per oral (taken by mouth)
PRN	Pro re nata (use when required)
RR	Respiratory Rate
SBP	Systolic Blood Pressure
SC	Sub-cutaneous
S-LANSS	Self-reported Leeds Assessment of Neuropathic Symptoms and Signs
SR	Sustained Release
SNRI	Selective Serotonin Noradrenaline inhibitors
SSRI	Selective Serotonin Reuptake inhibitors
SC/Subcut	Subcutaneous

Sections

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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Version 3

Pain Assessment

Step 1: Assess the patient's pain at rest and on movement

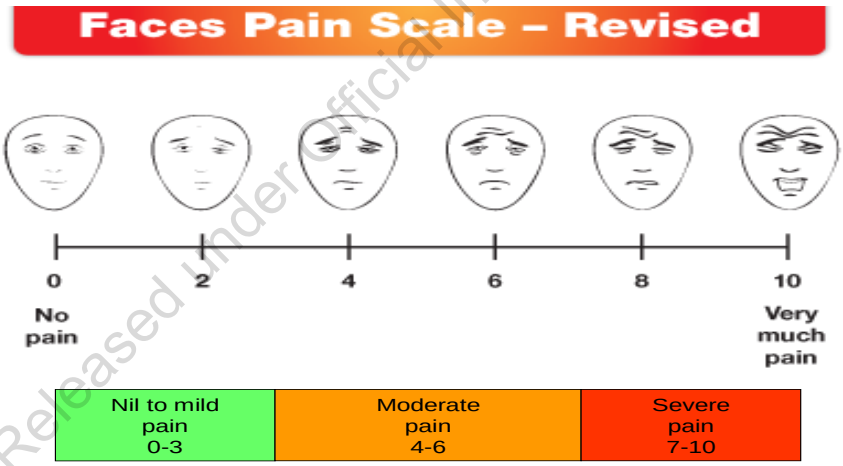
Assess pain at rest and on movement.

Categorise pain as Mild (0-3), Moderate (4-6) or Severe (>6) using:

- The verbal rating scale. Ask the patient to rate his or her perceived pain on a numerical scale from 0 to 10 (zero is no pain, and 10 is the worst pain imaginable)

  OR

- The visual analogue scale can be used for patients unable to verbally assess their pain. There are 2 types in common use:
  - Visual rating scale
  - Faces scales if English not the patient's preferred language



Categorise pain into **mild**, **moderate** or **severe** based on their report, and/or physiological changes associated with moderate or severe pain if patient not able to report, or report appears out of keeping with physical signs.

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Physiological signs of Pain			
	Mild pain	**Moderate pain**	**Severe pain**
Face	No expression or smiling	Occasional grimace, tears, frowning, wrinkled forehead	Frequent grimace, tears, frowning, wrinkled forehead
Movement	Lying quietly, normal position	Seeking attention through movement or slow cautious movement	Restless, excessive activity &/or withdrawal reflexes
Guarding	Lying quietly, no positioning of hands over body	Splinting areas of the body, tense	Rigid, stiff
Physiologic 1 (vital signs)	Stable for at least 4h	Change over past 4h in any of: SBP >20mmHg, HR >20/min or RR > 10/min	Change over past 4h in any of: SBP >30mmHg, HR >25/min or RR > 20/min
Physiologic 2	Warm dry skin	Dilated pupils, perspiring, flushing	Diaphoretic, pallor

For neuropathic pain assessment, refer to Acute Neuropathic Pain (page 15)

Monitor and record the patient's rating of pain intensity on a scale from 0 to 10 at rest and on activity.

Step 2: Check that there is no undiagnosed organic cause for the pain

If pain suddenly worsens or the patient reports more pain than expected – consider whether their condition has worsened acutely and call for senior help if concerned.

Causes of acute worsening of pain or increasing analgesic requirements include:

- compartment syndrome
- tight dressings
- expanding haematomas
- constipation
- ischaemic leg
- ischaemic gut
- gout

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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Treatment of acute pain

- Refer to Prescribing analgesia in orthogeriatrics and frail elderly for treatment options in this group (page 15).

Moderate Pain

Moderate pain is experienced by many hospitalised patients.

Regular paracetamol 1 g PO or IV if NBM, every 4 hours (maximum 4 g in 24 hours).

- Reduce total daily paracetamol to 2 g (two or more risk factors) or 3 g (one risk factor) daily and consider charting as PRN only, to reduce risk of stacked overdose or hepatotoxicity in patients with the following risk factors:
  - History of chronic heavy alcohol use - >3 alcoholic drinks/day
  - Patients taking CYP enzyme-inducing drugs such as phenobarbitone, primidone or isoniazid
  - Chronic malnutrition – including anorexia nervosa
  - Frail or weight <50 kg
  - Chronic liver disease – INR >1.4
  - Chronic kidney disease – GFR <10 mL/min
  - NBM for prolonged period or continuously vomiting

AND

Regular celecoxib 200 mg PO once daily

- Patients >90kg can have 200mg twice daily for short term use.
- Omeprazole is NOT required with celecoxib

OR

Regular ibuprofen 400 - 600 mg PO every 6 hours (maximum 2.4 g in 24 hours).

- Prescribe omeprazole 20mg daily as gastro-protection ONLY while the patient is taking ibuprofen.

AND

As required tramadol 50 - 100 mg PO or IV if nil by mouth, up to 2 hourly, especially for titration (maximum 600 mg in 24 hours).

- For discharge prescriptions a maximum total daily dose of 400 mg must be adhered to, and doses must be spaced every 4 or 6 hours.
- For patients with an eGFR < 30ml/min, the dose interval is 12 hourly (50-100mg q12h)

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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Practice points

- Codeine is **not** recommended as an analgesic at CCDHB.
- Avoid tramadol if patient has epilepsy or previous seizures.
- Tramadol may cause serotonin syndrome when taken alone or if the dose is increased, and more frequently when taken with another serotonergic medicine. Avoid concomitant use with SSRIs, SNRIs, MAOIs, tricyclic antidepressants and mirtazapine.
- Tramadol should be used with caution in patients aged over 75 years, and a maximum dose of 300mg should be adhered to in this group.

Tramadol in Children (<18yo)
Tramadol can have a useful role as part of a multimodal analgesic regimen for managing pain in children. The dose should be limited for acute pain after tonsillectomy (e.g., maximum dose 0.5-1 mg/kg/DOSE 6-8 hourly, max 400 mg/DAY)

Severe Pain

Severe pain would be expected with (this is not an exhaustive list):

- acute myocardial infarction
- specific upper abdominal surgery
- renal colic
- specific malignancies
- fractures of the spine/pelvis/hip – when moving (incident pain)
- major trauma

Continue regular paracetamol, tramadol and NSAID as per moderate pain guidance above **AND** add a potent opioid – see **Prescribing Opioids in Acute Pain** below for further details

- morphine (1st line) or fentanyl – oxycodone can **ONLY** be considered if the patient does not tolerate these drugs
- methadone can be prescribed by APMS or Palliative Care
- **stop** other opioids now (codeine or dihydrocodeine). Tramadol can be continued, as it's action is only partly opioid
- there is about a 50% decrease in opioid requirements if NSAIDs and paracetamol are co-prescribed
- morphine intolerance includes:
    - anaphylactoid reactions
    - vomiting not controlled by anti-emetics
    - uncontrolled itch

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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Prescribing Opioids in Acute Pain

Practice points

- Morphine and fentanyl are used first line for acute severe pain.
- Do not use sustained release preparations for acute pain - including patches.
- Oxynorm ® (oxycodone) may be prescribed ONLY if the patient does not tolerate morphine, and oral treatment is desired. Do not confuse with Oxycontin®, which is sustained release, and not used in acute pain.
- Continue slow release opioid preparations, e.g. M-Eslon®, methadone or fentanyl patches, if patient already using these on admission.
- It may not be possible to eliminate pain entirely without risking OIVI - aim for a 50% reduction in pain.
- If the patient has required morphine 10 mg IV (or equivalent) and the pain has not improved, call for senior help.
- If the patient is expected to have potentially severe pain for a day or two, avoid fentanyl as it is very short acting, and repeated doses are often needed.
- Avoid charting as opioid IV as required, except in high dependency units - use PO or SC.
- Do not mix opioids in acute pain (this includes codeine).
- Analgesic adjuncts may be helpful – e.g. gabapentinoids.
- All opioids charted PRN must have the following caution in 'special instructions':

  "Only to be given if patient alert/ easy to rouse and RR ≥12/min".

Step 1– Determine urgency of analgesia

Does the patient need rapid (within minutes) analgesia for acute severe pain? (This is likely if the patient's pain is >7/10)

- If **NO** – start at **Step 2**
- If **YES** –
  - Refer to **Intermittent intravenous opioids (adult) – administration**.
  - Chart:
    - Morphine (1mg/ml) IV, titrate 1-2mg according to protocol **or**
    - Fentanyl (10mcg/ml) IV, titrate 10-20mcg according to protocol.

During administration, the doctor or nurse or midwife (if IV opioid certified) must remain with the patient until pain is settled (aim for 50% reduction in pain) and the patient is stable.

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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This will be at least 15 minutes while the opioid is titrated, then monitor every 15 minutes for one hour. If this fails to settle the pain **review the diagnosis** and treat as appropriate, before contacting APMS.

If uncertain call APMS.

When pain is settled go to Step 2

Step 2 – Prescribing strong opioids PRN

Use the guidance below to determine a suitable dosage regimen for opioid naive patients requiring opioid medication post initial IV dose titration or for patients with moderate or severe pain who have not required titration.

- Do **NOT** prescribe intermittent IV boluses PRN as this increases the risk of OIVI.

Recommended strong opioid starting doses

CCDHB Strong Opioid Guide

Use to determine a suitable starting dose for opioid naive patients with moderate to severe pain not requiring IV dose titration

Estimated Creatinine Clearance *	15-75 years old	> 75 years old
>45 mL/min	Morphine 10-20 mg **(PO)** or Morphine 5-10 mg **(SC)**	Morphine 5-10 mg **(PO)** or Morphine 2.5-5 mg **(SC)**
30-45 mL/min	Morphine 5-10 mg **(PO)** or Morphine 2.5-5 mg **(SC)** or Fentanyl‡ 25-50 micrograms **(SC)**	Morphine† 2.5-5 mg **(PO)** or Morphine 1-2 mg **(SC)** or Fentanyl 12.5-25 micrograms **(SC)**
<30 mL/min	Fentanyl 25-50 micrograms **(SC)**	Fentanyl 12.5-25 micrograms **(SC)**

Reduce starting dose by 25% if patient has any of the following risk factors for opioid induced respiratory depression (reduce starting dose by 50% if >1 risk factor exist): Pre-existing pulmonary disease e.g. COPD, obesity (BMI >35), OSA or history of snoring or witnessed apnoeas or excessive daytime sleepiness, taking other sedative drugs (especially if new), liver impairment.

***Estimated Creatinine Clearance:** Use the Cockcroft-Gault formula to estimate creatinine clearance in older adults and those with renal impairment.
† **Morphine (PO):** for oral morphine doses < 5mg, chart 'morphine elixir' rather than Sevredol.
‡ **Fentanyl (SC):** subcutaneous fentanyl is short acting (30-60 min) and not recommended for patients with persistent opioid requirements.
Read the accompanying guideline for more details

Oxynorm practice notes:

- Use only if patient truly intolerant to morphine due to intractable itch or uncontrolled vomiting.
- Oral Oxynorm is twice as potent as oral morphine, therefore prescribe half the oral morphine dose.
- Subcutaneous oxynorm is equipotent to subcutaneous morphine.
- Oxynorm shouldn't be confused with Oxycontin, which is sustained release.

Prescribing example

As Required (PRN) Medicines

Medicine: S, E, V, R, E, D, O, L

Dose	Units	Route	Frequency	Dose calculation	Max dose/24hrs	Prescriber's signature
10 - 20	mg	PO	Q1H		6 doses then Med Rev	Guy

Dose range if needed | Indication: Pain | Pharmacy & special instructions: Ward/Emergency nurse/RN2IP | Pharm | Sign, date and time to cancel

- Immediate release morphine is available in the following formulations and strengths:
  - Tablets (Sevredol) - 10mg (Blue) or 20mg (Pink). Avoid prescribing 2.5mg as the tablets cannot be easily cut into quarters.
  - Elixir - 1mg/mL, 2 mg/mL, 5 mg/mL or 10 mg/mL

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

Document number: 1.101180 **Issue Date**: 16 October 2020 **Review Date**: 16 October 2023
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Opioid Pharmacokinetics

Opioid	Time to Peak Effect	Duration of Effect
Morphine – immediate release (Sevredol or morphine elixir or SC)	30-60 minutes	3-4 hours
Fentanyl SC	15 minutes	1 hour
Oxycodone – immediate release (Oxynorm)	45-60 minutes	4-5 hours

Step 3: Co-prescription – laxatives and anti-emetics

Refer to the **CCDHB Constipation guidelines for community and hospital** for the full policy.

If charting opioid analgesia, co-prescribe:

- regular laxative - bisacodyl 10mg at 6pm, and
- as required anti-emetic – metoclopramide 10 mg PO/IV three time daily
    - ondansetron can be constipating in some patients, but is still a very useful anti-emetic in this setting – 4 mg PO/IV three time daily

If uncertain about what to prescribe, call APMS

Practice points

- Prescribe PRN laxatives to everyone.
- Ask your patients if they are prone to or already constipated.
- Warn them that 50 to 90% of people on opioid develop constipation.
- Negotiate whether regular laxatives are needed (if already constipated or prone to constipation)

Step 5: Inadequate analgesia

If the patient requires >3 PRN doses of opioid within 4 hours or 6 doses in 24 hours, review the diagnosis and dose of opioid given.

- Check for any undiagnosed problems such as:
    - compartment syndrome
    - tight dressings
    - expanding haematomas
    - ischaemic leg or gut
- Request a senior review if you are concerned about the patient's pain being out of keeping with the diagnosis.
- Remember that pain can cause hypertension, however don't allow a normal or elevated BP to falsely reassure that the patient is haemodynamically stable.
- Particularly large or muscular patients may require a higher dose of opioid.
- If pain is severe, IV opioid titration may be undertaken (see **Step 2**) and then PRN doses will be more effective if the pain is manageable to start with.
    - Bedside monitoring is **imperative** if IV opioid titration is undertaken. See **Opioid Administration and Monitoring** below.

If these measures fail to control the pain, contact the APMS (CCDHB) or Acute Pain Team (HVDHB).

Step 6: Adjuvant analgesia

Adjuvant analgesia may be useful if the patient's pain is not adequately controlled by opioid analgesia.

Perioperative gabapentinoids (gabapentin or pregabalin) reduce post-operative pain and are opioid sparing. They reduce the incidence of vomiting, pruritus and urinary retention but increase the risk of sedation.

For patients with **eGFR<60ml/min** – refer to Medicine Use in Renal Impairment or the Renal Drug Handbook

Recommended gabapentinoid doses:

Medication	Usual starting dose	Increase by	Usual effective dose
Pregabalin	25-75 mg BD	150 mg every 7 days	150-300 mg/day
Gabapentin	100-200mg TID	300 mg every 3 days	900-1200 mg/day

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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Opioid Administration and Monitoring

- **Do not administer opioids** to the patient unless they are A or V on the AVPU level of consciousness scale (alert or easy to rouse), and have a respiratory rate ≥12/min

Nursing staff must ask the patient about their pain level, and offer analgesia hourly in severe pain.

The patient should also be instructed to request analgesia as needed, and not to wait until they are asked if it is required, if they are in pain.

Monitor the following in all patients receiving opioids:

- Level of consciousness – using AVPU scale
- Respiratory rate
- BP and Pulse

AVPU scale for monitoring level of consciousness

Awake/alert	**A**
Mildly sedated, wakes to noise/voice, and eyes stay open >10 sec	**V**
Moderately sedated, rouses to pain/shaking, but has difficulty staying awake (eyes open < 10 seconds)	**P**
Difficult to rouse or unrousable	**U**

If the patient scores **P** or **U,** intervention is needed:

- Rouse patient ***immediately*** and instruct to take deep breaths
- Put out a Medical Emergency Team (MET) call now
- Stay with the patient
- Reduce the opioid dose and monitor the patient more frequently.
- **Reminder:** when prescribing opioid analgesia, chart *"Only to be given if patient A or V on AVPU sedation scale with RR ≥12/min"*.

Monitoring frequency based on opioid and route of administration

ROUTE	FREQUENCY *(more frequent observation may be required in high risk patients)*
IV	At the bedside for at least 15 minutes, then every 15 minutes for one hour
SC/PO morphine	At around 1 hour after administration
SC fentanyl	At around 30 minutes after administration
PO oxycodone (Oxynorm®)	At around 45 minutes after administration
SR	At around 3 hours after SR morphine
PCA	Every 30 minutes for 2 hours, then 1 hourly for 4 hours, then 2 hourly (if patient stable) for 24 hours. Refer to the Intravenous infusion of opioids via Patient Controlled Analgesia (PCA) infusion devices (adult) policy

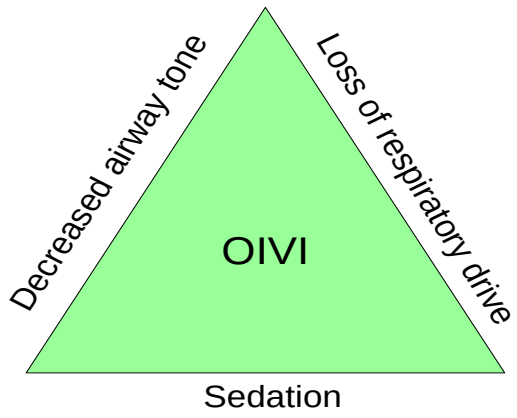
- For any patients with P on AVPU scale and/or RR<12 - monitor at 15 minute intervals and request medical review.

If uncertain about monitoring, call APMS.

Opioid-Induced Ventilatory Impairment (OIVI)

Opioid-induced ventilatory impairment (OIVI) is the most serious adverse effect of opioid use, and can be fatal.

OIVI is a triad



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Risk Factors for Opioid-induced Ventilatory Impairment

- Obstructive sleep apnoea (OSA)
- Obesity (BMI >35)
- History of snoring, witnessed apnoea, or excessive daytime sleepiness
- Pre-existing pulmonary disease e.g. COPD
- Taking other sedative drugs
- Regular smoker

IF **1** risk factor present – reduce starting dose by 25%

IF **>1** risk factor present – reduce starting dose by up to 50%

- OIVI is usually preceded by sedation alone.
- Identification of advancing sedation before it is compounded by continued opioid administration is the key to avoiding OIVI. Occasionally, patients can have loss of respiratory drive alone and are not sedated. This should be managed in the same way as OIVI.
- Snoring is an ominous sign, as it may imply transient airway obstruction.
- OIVI risk is highest in the first 24 hours after opioid prescription and/or surgery, during the night shift and if receiving IV opioids and other sedating drugs, or after an increase in the dose of an opioid.
- During the night patients with OIVI can go unnoticed, as it may simply appear that they are sleeping.
    - High risk patients should be woken for regular assessments of their sedation during the night.
    - The key to assessing sedation during the night is how well the patient stays awake after rousing.
    - If the patient is not sedated, they will rouse to voice or touch, be able to answer a question promptly and stay alert (with eyes open) for at least 10 seconds. Falling asleep mid-sentence implies excessive sedation and risk of OIVI. In this case the opioid dose must be reduced and the patient monitored at least hourly until less sedated.
- Remember patients can still complain of pain when they are sedated. Being in pain is not a reliable sign that the patient is not at risk of OIVI.

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Treatment of Opioid-Induced Ventilatory Impairment (OIVI)

- Rouse the patient by calling their name, trap squeeze or orbital rub and instruct to take deep breaths - in many cases this will be all that is required.
- If patient doesn't respond, support airway with jaw thrust and chin lift while calling for help – MET call.
- Apply oxygen if patient hypoxic.
- Administer naloxone – refer to the Intravenous Naloxone (Adult) policy
    - Repeat doses of naloxone may be given by infusion.
- Once patient is recovered, consider medium term management - usually all that is required is observation.
- Opioids may need to be reduced but it is not appropriate to leave the patient in pain

Naloxone will begin to reverse sedation within 1 to 2 minutes. The patient should then be able to open his/her eyes and talk. The amount of naloxone required to reverse opioid-induced sedation and respiratory depression will vary among patients.

Administration of naloxone according to the titration-to-effect technique allows reversal of adverse effects while minimising analgesia reversal.

Practice points

- Continue to monitor sedation levels and respiratory status closely.
- The duration of clinical effect of naloxone is shorter than most opioid agonists, therefore it is important to continue monitoring closely for increasing sedation and decreasing respiratory function until stable.
- Further doses of naloxone may be required, or a continuous infusion started - seek advice from the PAR team.

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Prescribing analgesia in orthogeriatrics and frail elderly

The frail elderly are at increased risk of adverse outcomes from strong opioids, and require lower doses.

- Tramadol is poorly tolerated in this group and caution is required if prescribing - maximum 300 mg in 24 hours.
- NSAIDs can be used for short courses (up to 5 days) if the patient is eating well and has an eGFR >60ml/min. Celecoxib is the NSAID of choice. If the patient is on concomitant aspirin or anticoagulant, omeprazole should be prescribed as gastro-protection – Refer to Treatment of Acute Pain above for dose recommendations.
- Regular paracetamol may need dose reduction - maximum 3 g in 24 hours.

For older patients with non-operative fractures (such as pelvic or humerus fractures) managed under General Medicine or other painful conditions use the chart on page to prescribe prn strong opioids in severe acute pain.

Undisplaced fractures are likely to require incident analgesia for 2 weeks, and displaced fractures for one month.

After 2-3 days of PRN analgesia, the patient can be transitioned to long-acting analgesia such as M-eslon or a fentanyl patch. Starting doses should be kept low eg. fentanyl patch 12.5mcg/hour or M-eslon 10mg twice daily, and incident analgesia available for dose titration. If the patient's eGFR is <30ml/min prescribe a fentanyl patch as morphine is likely to accumulate in these patients.

Some fentanyl patches can be cut in half, if a very low starting dose is required. Check with a pharmacist – brands can change without warning, and not all can be cut.

Orthogeriatric patients with fractures are extremely vulnerable drug related harm. They are often frail, on multiple medications and are hypovolaemic secondary to low fluid intake, nil-by-mouth status, fracture-related and intra-operative blood loss. NSAIDs and Tramadol should generally be avoided to prevent acute kidney injury and delirium. Regular Paracetamol and PRN strong opioid should be prescribed.

- Adjunct analgesia may be helpful if the pain is poorly opioid responsive:
  - Pregabalin 25 mg BD can be trialled
  - Dose may be increased every week as tolerated, by 25mg OD to a maximum dose of 150mg OD.
- Nerve blocks may be an option in patients with non-operative fractures - discuss with APMS.

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Discharge planning for patients requiring strong opioids

Opioids are not recommended for routine prescription on discharge due to risks in the community. However, some patient will require short-term opioid prescription on discharge, especially after some types of surgery and patients with fractures that have not been operated on.

- High opioid requirements may mean that the patient is not suitable for discharge.

Risks of opioids in the community:

- Persistent opioid use – risk factors include smoking, alcohol use disorder, substance use disorder, mood disorder, anxiety or a history of pain disorders
- Accidental overdose (by patient or other person)
- Drug diversion

If prescribing strong opioids:

- Discuss with the GP by phone, and record clearly in the discharge summary that the patient is taking strong opioids, and the plan for tapering.
- Use a weaker opioids such as tramadol, or NSAIDs instead of strong opioids, if possible. Strong opioids are unlikely to be needed on discharge if the patient has not required them within the last 12 hours.
- Doses prescribed should be equal to or less than those required in the 24h preceding discharge.
- Strong opioids should be prescribed at a maximum frequency of every 4 hours after discharge.
- Tramadol should be prescribed at a maximum frequency of four times daily.
- Do not prescribe slow release preparations of opioids - there is a higher risk of drug diversion and addiction with these preparations. If in doubt, discuss with Addiction services.
- Anticipate a need for opioid analgesia that reduces each day. Adjust the total amount to be dispensed by prescribing half the number of tablets that would be required at the maximum dose throughout the period of supply. See below for examples.
- Arrange GP review within 2 weeks if:
    - Chronic Regional Pain Syndrome (CRPS) suspected

    - Patient has any risk factors for acute persistent pain post-surgery
    - Patient has any risk factors for developing chronic pain
    - Patient likely to require strong opioids for > 1 week
- If the patient has been on opioids for > 2 weeks tapering may be required

- Taper opioids as quickly as possible, while patients continue non-opioid analgesics and non-pharmacologic therapy.
- Re-evaluate patients who do not follow the expected course of recovery, or require higher than expected doses of opioids.
- Prescribe laxative, unless contraindicated - bisacodyl 10mg PO daily
- If the patient is already on Laxsol®, they should continue on this, but the dose may need to be increased.

Prescribing half the number of tablets

Examples of prescribing half the number of tablets required at the maximum dose throughout the period of supply at discharge:

- morphine 10mg PO up to every four hours as required for 5 days
    - equals a maximum of 30 tablets if taken at maximum dose
    - halve this and prescribe only 15 tablets

Fentanyl on discharge

- There is no registered oral/sublingual fentanyl product available in NZ.
- If a hospitalised patient who has been receiving PRN SC fentanyl requires a strong opioid PRN on discharge, prescribe the following based on renal function:
    - eGFR 46-60ml - Oxynorm® 5mg PRN up to q6H
    - eGFR 30-45ml - Oxynorm® 2.5mg PRN up to q6H
    - eGFR<30ml/min - a low strength fentanyl patch 6.25 mcg/hr is likely to be the safest option. Supply enough for one week or as directed by senior medical staff or APMS.

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Version 3

Management of Acute Pain in Opioid Substitution patients (methadone or buprenorphine/naloxone combination maintenance)

Patients maintained on methadone or the buprenorphine/naloxone combination require special consideration for acute pain management in surgical or trauma situations.

For most patients it is appropriate to continue opioid substitution including buprenorphine/naloxone.

Contact the APMS (CCDHB) or the Acute Pain Team (HVDHB) for advice on management of acute pain in these patients.

For patients on these medications, as treatment for opioid dependence:

- Contact the Opioid Treatment Service, OTS (Methadone Clinic- CADS) to verify correct dose and request support and management advice.
- The patient may have daily dispensing and their pharmacy will be able to tell you which doses they have received.

On discharge from hospital:

- Contact the pharmacy where the patient receives their daily methadone. The pharmacy will need to know if the patient has had their daily methadone prior to discharge. This will prevent the patient receiving a double dose on the day of discharge.
- If the patient requires a prescription for a controlled drug on discharge, this must be discussed first with the OTS. The law prevents other prescribers from providing controlled drugs to a patient with a history of drug dependence.

Opioid Treatment Service (OTS)
Opening hours 9am – 5pm, Monday to Friday
Phone (04) 4949170
Fax (04) 4949176
Outside these hours contact: Te Haika

Document facilitator: Dr Chris Cameron

Senior document owner: Medicines Review Committee

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Acute Neuropathic Pain

Background

- This is pain from damaged or malfunctioning nerves either in the peripheral or central nervous system. There are numerous sites where pain pathways can be sensitised and transmission amplified. Some of these are targets for modification by anti-neuropathic agents.
- It is often described as burning, shooting pain and may be distant to the site of tissue damage.
- There may be associated numbness, paraesthesia, dysesthesia, hyperalgesia and allodynia (pain on light touch).
- Neuropathic pain is increasingly recognised in the acute setting and early treatment may reduce progression to chronic pain.
- Neuropathic pain is harder to treat than nociceptive pain. The response to conventional analgesics is poorer than that of nociceptive pain. However, tramadol and opioids may be effective in ACUTE neuropathic pain.
- The pharmacological treatment options indicated in this section should only be used if the prescriber is familiar with the potential adverse effects.

Diagnosis

- The diagnosis of neuropathic pain can be difficult - diagnostic tools include the S-LANSS Pain Scale.
- Clinical features to look for include:

Stimulus independent (spontaneous) pain

- Constant burning pain
- Qualities of shooting, lancinating or electric shock-like pain
- Dysaesthesia (abnormal and unpleasant sensations)
- Paraesthesias (abnormal but not unpleasant sensations)

Stimulus evoked pains (elicited by mechanical, thermal or chemical stimulus)

- Hyperalgesia (increased response to normally painful stimulus)
- Mechanical allodynia (pain evoked by non-painful stimulus)
- Dynamic allodynia (brush evoked)
- Static allodynia (pressure evoked)
- Cold allodynia (pain evoked by cold stimulus)

Pharmacological Management

- Low dose tricyclic antidepressants (TCAs) and gabapentinoids are the common first line treatments. Refer to Step 6: Adjuvant analgesia in Prescribing Opioids above for dose recommendations - seek advice if unfamiliar with these medications.
- Gabapentanoids have abuse potential - prescribe with caution.

- Opioids are often ineffective for treating neuropathic pain, but may be used if pain is severe - discuss first with pain specialist.
- Other therapeutic classes of agents are sometimes used for chronic pain conditions but should only be prescribed by a pain specialist.

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Document facilitator: CMM Delivery Suite

Senior document owner: Director of Midwifery

Document number: 1.102273 **Issue Date** 05 November 2020 **Review Date** 05 November 2023

Level: Service Obstetrics

Type: Protocol

Name: Morphine administration in labour

Purpose

The Medicines Amendment Act (2013) and the Misuse of Drugs Regulation Amendments (2014) allow midwives to prescribe morphine, pethidine or fentanyl for intrapartum use.

Morphine has some pharmacokinetic advantages over pethidine and the active metabolite of morphine has a shorter half-life than pethidine (Anderson, 2011).

Only **one type of opioid** should be prescribed to a labouring woman.

Scope

- All Midwives
- All Access Holders
- All WHS Obstetricians, Registrars, Senior House Officers

Indications

- Non-pharmacological or inhalational forms of pain relief have been declined or exhausted
- Maternal anxiety and distress in labour
- Those occasions where epidural anaesthesia is contraindicated
- Prolonged latent phase of labour (after medical consultation)
- Maternal distress caused by contractions following administration of prostaglandins (after medical consultation)

Contra-indications

Morphine should not be administered if the following conditions exist:

- Allergy to morphine
- Other opioids have been administered within the last 4 hours

- The woman is likely to need remifentanil patient controlled analgesia (PCA) as part of her management of labour pain
- Women with low platelet counts, coagulation disorders or receiving anticoagulant treatment should not be given morphine via intramuscular (IM) administration
- Women with severe hepatic disease
- Women with significant cardiac disease
- Women with moderate - severe asthma or other severe respiratory disease
- Women with severe neurological disease

Risks and precautions

Before prescribing and administering morphine a maternal and fetal assessment must be undertaken. This should include maternal respiratory rate, blood pressure, heart rate and temperature. It is **not** advisable to administer morphine if the labouring woman:

- Has a respiratory rate equal or less than 12 breaths per minute
- A systolic blood pressure < 100mg Hg
- The woman is drowsy
- There is unrelieved nausea or vomiting
- Maternal bodyweight of <50 kilograms (especially for repeated doses)
- If birth is anticipated within 1 hour

Procedure(s)

- Prior to the administration of each morphine dose it is advised that the midwife assess and document (as appropriate) the woman's:
    - Respiratory rate
    - Blood pressure
    - Heart rate
    - Level of consciousness
    - Progress in labour
    - Timing and response to a previous dose (if appropriate)
    - Fetal wellbeing
- If the respiratory rate is below 12 or any other observations are concerning the woman needs an urgent medical review
- A woman with a low respiratory rate will require naloxone (see intravenous Naloxone, adult CapDocs ID 1.138)

Fetal monitoring:

- Structured intermittent auscultation (SIA) can continue to be used in the **absence** of any maternal problems, pregnancy-related risk factors and/or labour complications
- If continuous electronic fetal monitoring (EFM) is in progress a temporary reduction in baseline variability, or pseudosinusoidal pattern will be noted within approximately twenty minutes of the morphine being administered. This induced quiet period in the fetal heart rate tracing does not necessarily indicate fetal compromise

IM Administration:

Only the IM route can be used at Kenepuru and Paraparaumu maternity units.

IM Dosage

- Once only dosing 7.5 – 10mg, consider patient body mass index (BMI) when choosing dose
- Inject undiluted solution in to a large muscle, such as the buttocks (dorsogluteal muscle) or leg (vastus lateralis)
- The peak effect of an IM dose of morphine may not occur for more than 60 minutes and the woman should be observed closely for 90 minutes
- The Midwifery Council of New Zealand recommends midwives consider consultation after the administration of one adult dose of an intrapartum morphine in situations where the woman requires further analgesia or as concerns arise about maternal and fetal wellbeing, or a lack of progress in labour

IV Administration:

ONLY for use at Wellington Regional Hospital

To ensure competence in the administration of IV opioids C&C DHB midwives must:

- Be able to administer IV morphine according to the guidelines described in the administration of intermittent IV opioids policy CapDocs ID 1.143
- All midwives and medical practitioners administering morphine IV must be familiar with the administration of IV naloxone (see Intravenous Naloxone (Adult) *and* NICU drug monograph – naloxone CapDocs ID 1.138)

IV Dosage:

- Prepare morphine 5mg diluted to a total of 5mL using sodium chloride 0.9% *OR* morphine 10mg diluted to a total of 10mL using sodium chloride 0.9%
- Label the syringe with a Medication Added Label:
    - Additive
    - Dose
    - Sodium chloride 0.9%
    - Mg per mL
    - Date and time
    - Name of midwife preparing solution
- Administer initial dose of 1mg (1mL)
- Further incremental dosing of 2mg (2mL) can be repeated at 5 to 15 minute intervals until pain is controlled
- **DO NOT** exceed a total dose of 10mg in 4 hours
- The peak effect of an IV dose of morphine is 15 minutes and the woman should be observed closely for 30 minutes
- If further opioid analgesia is required medical consultation **must** occur **before** further administration

Documentation:

Morphine is a controlled drug therefore the following documentation must be completed:

- The drug must be removed from PYXIS using the correct woman's name. At Kenepuru and Paraparaumu maternity units, the drug is removed from the locked safe and the details recorded in the controlled drugs register
- **Morphine must be checked and signed for by two midwives**
- **Morphine MUST be double checked by two midwives at the bedside before administration**
- Practitioners are reminded if they prescribe and administer morphine that they must sign both columns on the medication chart
- The administration dose and time need to be documented in the "once only" section of the medication chart
- After administration it is necessary to document the reason for administration, the pre and post administration fetal heart rates, the dose and route by which the morphine was administered and the effect on the woman
- **Opioids should not be left unattended at any time**

Common maternal side-effects to morphine include:

- Nausea and vomiting
- Sedation
- Respiratory depression
- Postural hypotension
- Delayed gastric emptying
- Sweating and heat loss
- Itch and occasionally small welts near the site of administration
- Flushing of the skin
- Dizziness
- Urinary retention

Postpartum effects on the neonate:

The administration of morphine during labour can affect the infant postpartum. The effects of morphine are thought to be less than the effect caused by pethidine.

There may be:

- Neonatal respiratory depression (all midwives are required to be familiar with the administration of neonatal naloxone as per neonatal resuscitation drug guidelines attached to all neonatal resuscitaires)
- Delay in effective breastfeeding, although this is thought to be less than the effect caused by pethidine

- Observation frequency and monitoring as per NOC/NEWS (newborn observation chart/newborn early warning score)

Document facilitator: CMM Delivery Suite

Senior document owner: Director of Midwifery

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Medsafe – morphine

Murney, P. (2008). To mix or not to mix – compatibilities of parentral drug solutions. *Australian Prescriber, 31*, 98-101.

Medicines Amendment Act 2013 and the Misuse of Drugs Regulation Amendments (2014) New Zealand

Associated documents

CCDHB PPPG documents:

- Intermittent intravenous opioids (adult) – administration CapDocs ID 1.143
- Controlled drugs-storage, security and documentation CapDocs ID 1.127
- Intravenous naloxone (adult) CapDocs ID 1.138

WHS PPPG documents:

- Prescribing of medicines by midwives - guidelines CapDocs ID 1.263
- Naloxone Hydrochloride IV, NICU Monograph CapDocs ID 1.2134
- Morphine administration in labour, Quick Reference CapDocs ID 1.102274

Document facilitator: CNS Acute pain / Pain management Specialist

Senior document owner: Clinical Practice Committee

Document number: 1.102598 **Issue Date** 10 August 2018 **Review Date 10 August** 2021
Version 2

Type: Guideline

Name: Management of acute pain in patients taking Suboxone (buprenorphine/ naloxone sublingual) tablets

Purpose
To give guidance to clinical staff providing care (including the management of acute pain) to patients who are currently prescribed Suboxone (buprenorphine/naloxone sublingual tablets).

Scope
All CCDHB medical staff, nursing staff, midwifery staff.

Indications for clinical use
Suboxone is a tablet for sublingual administration which contains the opioid buprenorphine and the opioid antagonist naloxone. It is used in the detoxification and maintenance of patients with opioid substance use disorder. Buprenorphine is a partial agonist of mu-opioid receptors with strong receptor affinity and a long duration of action. Suboxone provides some analgesic benefit, however, it may prevent full agonist opioids (morphine, fentanyl) from acting at the receptor, particularly at high Suboxone doses (16-32mg daily). Naloxone has minimal oral activity, but will act as an opioid antagonist (blocking the effects of buprenorphine and other opioids) if the tablets are dissolved and injected intravenously. In the New Zealand context it is used as an alternative to methadone by the Opioid Treatment Service (OTS). It is funded by PHARMAC for the detoxification and maintenance of opioid dependent patients.
(Note: buprenorphine is used for the management of both acute and chronic pain, usually in much lower doses than are required to treat opioid dependence).

Procedure(s)
Acute pain management overview
For elective or planned admissions to hospital communication with the OTS is advisable to guide and support the management plan. In the case of emergency presentations the admitting team will need to contact the OTS as soon as practicable (there is no after hours service) or the Acute Pain Management Team (APMS) on #6449 to discuss pain management options. Additional pain relief from opioids is very challenging in patients taking Suboxone due to the agonist-antagonist effects and its ability to displace other opioids e.g., morphine from the mu receptor.

Aims of acute pain management
- To provide effective analgesia (utilising secure drug administration procedures)
- To utilise analgesia techniques/ therapies that are not opioid based
- To prevent opioid withdrawal
- To limit risks and harm associated with the provision of pain management
- Ensure liaison with specialist teams as required and appropriate discharge planning.

Document facilitator: CNS Acute pain / Pain management Specialist

Senior document owner: Clinical Practice Committee

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Version 2

Suggestions for pain management

Suboxone should be continued at the usual dose and dosing frequency. Please ensure it is administered correctly i.e., sublingual not swallowed. If there are any concerns as to accuracy of the dose, or when the last dose was dispensed, this should be clarified with the patient's usual pharmacy or prescriber (this may be OTS or GP). Patients who are nil by mouth (NBM) prior to surgery can usually take their usual Suboxone dose(s). Note also that supplemental opioid dose requirements will be variable due to opioid tolerance. While the partial agonist effect can theoretically block the action of full agonists, in clinical practice supplemental opioids usually have an additive effect to Suboxone and provide effective analgesia.

The following are suggestions in regard to providing short-term relief of acute pain for clients on Suboxone opioid substitution:

- Maintaining the normal Suboxone dosing regimen to avoid opioid withdrawal
- Maximise use of non-opioid techniques such as simple analgesia, regional nerve blockade techniques or ketamine infusion
- Increasing the dose of Suboxone (maximum dose 32mg) and/or splitting the dose to four times daily
- Use of supplemental opioids (Morphine/Fentanyl) via tamper resistant infusion delivery devices e.g., CADD Solis PCA and appropriate monitoring
- Switching to methadone could be considered, however, titration to a full dose of methadone may take weeks.

If additional opioids are administered by any route frequent review of the patient's pain and careful monitoring of sedation and respiratory rate are required due to unpredictable response.

If Suboxone is stopped the APMS and OTS should be consulted before re-introduction. Restarting Suboxone while still taking other strong opioids can precipitate withdrawal by displacing strong opioids from opioid receptors.

Discharge Planning

It will be necessary to discuss the patient's discharge with the OTS, especially if prescriptions for any on-going opioids are required (this includes codeine/tramadol).

- Liaison is required prior to discharge of the patient as it is illegal under section 24 of the 1975 Misuse of Drugs Act for any other prescriber to prescribe controlled drugs for the treatment of dependence
- There may be a Restriction Notice in place with even tighter requirements. Standard practice should be for the opioid treatment provider to provide all prescriptions for controlled medications, including additional analgesics if required. These would be dispensed on a close controlled basis along with the maintenance Suboxone
- **Do not give the patient a written prescription.** If the prescription has been authorised telephone or fax the prescription to the pharmacy, and post the original to the pharmacy within two working days.

For additional advice and information, contact:
Opioid Treatment Service - 494-9170 (hours 0830-1700, Monday-Friday)
Acute Pain Management Service on #6449 (24 hour service)

Document facilitator: CNS Acute pain / Pain management Specialist

Senior document owner: Clinical Practice Committee

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Version 2

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http://mentalhealthservices.org.nz/page/116-specialty+addiction-service+opioid-treatment-service

http://www.health.govt.nz/system/files/documents/pages/medicines-control-restriction-notices-v1.pdf

Associated documents

- Acute Pain Management Service (APMS) CapitalDocs 1.64
- Management of acute pain in patients with opioid substance use disorder CapitalDocs 1.141

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Senior document owner: Clinical Practice Committee

Document number: 1.102600 **Issue Date** 25 January 2019 **Review Date** 25 January 2022
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Type: Policy

Name: Child Health - Intravenous (IV) opioid administration, ketamine and intranasal fentanyl

Table of Contents

Purpose

This policy is to be followed for the safe and effective administration and management of acute pain for the following therapy in children:

- intermittent IV opioids or ketamine
- IV opioids or ketamine via an EID
- intranasal fentanyl

Scope

CCDHB registered nurses and medical staff caring for paediatric patients.

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For Nursing Staff Only

To ensure competence in the administration of IV opioids and ketamine using a PCA infusion device the Registered Nurse (RN) (CADD Solis PCA pump) must complete the following;

- Generic IV certification
- Paediatric pain competency

Certification of competence is required on a one-off basis and remains current so long as the RN is maintaining his/her practice. **Wherever possible the child with a PCA will be cared for by a certificated RN.**

A RN with generic and opioid certification, but not PCA certification may be assigned the care of a child with a PCA. This RN must have appropriate direction and delegation from a PCA certificated RN.

RN responsibilities

Double checking is mandatory when:

- Programming the pump at the initial set up
- Re-programming the pump after a prescription change
- Handing over at the end of each shift or whenever a new RN is assigned the child
- Changing the drug reservoir.

Opioid selection

Morphine is considered the 'gold standard' opioid analgesic for the management of pain in children unless contraindicated.

Fentanyl is the preferred opioid for the intranasal route.

Precautions with High Risk Children

In addition to standard precautions taken with the administration of IV opioids or ketamine individual children may have a higher risk of related complications (increased sedation, airway obstruction, respiratory depression).

Higher risk children;

- Abnormal central nervous system functioning whether pathological or developmental
- A known history of opioid or ketamine sensitivity
- History of obstructive sleep apnoea and/or morbid obesity
- Pre-existing respiratory failure
- Renal impairment
- Children receiving sedatives (e.g., diazepam)

Such high risk children should still benefit from effective titration of opioids and/or an opioid or ketamine infusion/PCA.
The following recommendations may reduce the risk;

- Be more alert to specific complications for this group of patients e.g., airway obstruction due to over sedation and respiratory depression
- Reduce the dose of opioid or ketamine
- Increase the dose interval

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Consult with the Acute Pain Management Service (APMS) prior to initiating treatment and ensure regular daily review is maintained. A review of these children is continued at weekends and may be required after hours in which case they will be handed over to the duty anaesthetist who holds the diverted APMS phone #6449.

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Auckland Healthcare Starship Nurses Quality Group and Pain Service for their generosity in sharing their Intravenous Opioid policy and their Intranasal Fentanyl policy.

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Associated documents

- Acute Pain Management Service CapitalDocs 1.64
- Controlled Drugs - storage, security and documentation CapitalDocs 1.127
- Safe medicines administration CapitalDocs 1.964
- Paediatric pain assessment and management CapitalDocs 1.101515
- Paediatric advanced analgesia prescription chart CapitalDocs 1.102601

Appendices

Appendix 1: Intermittent IV opioid bolus, criteria, prescription, preparation, administration and opioid titration flowcharts

Appendix 2: Continuous Opioid or Ketamine Infusion and infusion management

Appendix 3: IV Patient controlled analgesia (PCA)

Appendix 4: Nurse administered analgesia via a PCA or Nurse Controlled Analgesia (NCA)

Appendix 5: Intranasal Fentanyl

Appendix 6: Opioid or Ketamine monitoring (children)

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Appendix 1: Intermittent IV opioid bolus administration

Definition:

Small repeated boluses of a drug e.g., morphine, titrated to clinical effect. With IV opioids the beneficial analgesia effects are balanced against common side-effects such as sedation, nausea and vomiting, itch and more serious opioid induced respiratory depression

Criteria for intermittent IV morphine administration

The child:

- Demonstrates the need for IV morphine – moderate or severe pain, see weight based flowcharts for IV opioid administration
- Has patent IV access
- Has a prescription charted by medical staff in the child's medication chart
- Is alert and oriented or at the minimum rousable to light touch (A or V on the AVPU scale)
- Has a normal respiratory volume and a respiratory rate appropriate for age
- Is assessed and monitored according to opioid and ketamine monitoring (children) requirements in *Appendix 6*
- Has been discussed with the APMS #6449 if considered a higher risk patient
- The administration of intermittent IV morphine bolus doses is a safe and effective method of pain relief for children. Staff should be skilled in the described method and have an acceptable clinical workload enabling appropriate monitoring
- Morphine is prepared for bolus dose administration according to a specified concentration of morphine 0.2mg per kg made up to a total of 10ml with 0.9% normal saline (1ml = 0.02mg per kg) titrating increments to effect.

Note: For intermittent boluses of either ketamine or fentanyl please contact the APMS on #6449.

Intermittent IV morphine prescription and preparation

Morphine is prescribed by the anaesthetist or other medical staff, on the National Medication chart, according to the following formula:

Age and weight of child	Preparation (Morphine is prepared in a 10ml syringe)
For children < one year or <10kg	0.2mg per kg morphine made up to a total of 10ml with 0.9% sodium chloride e.g., 5kg x 0.2mg = 1mg morphine Administer 1ml from the syringe *See flow chart below*
For children >one year or >10kg	0.2mg per kg morphine made up to a total of 10ml with 0.9% sodium chloride e.g., 24kg x 0.2 = 4.8mg morphine Administer 2ml from syringe *See flow chart below*
For a child over 50kg	1mg morphine per ml – 10mg morphine made up to a total of 10ml with 0.9% sodium chloride Administer 1-2ml (1-2mg) according to need *See flow chart below*

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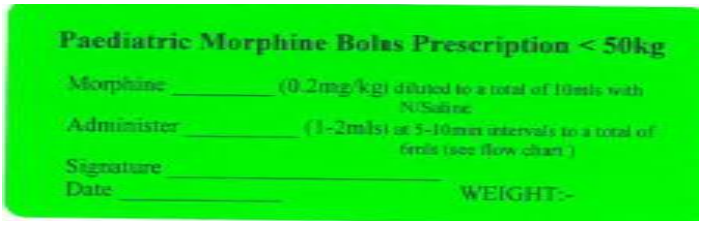
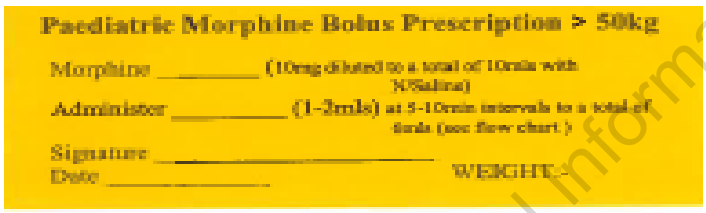
Label the syringe with a Medicine Added label and ensure the syringe markings are not covered

A colour-coded sticker system for the Medication chart is used for the prescription of intermittent IV morphine based on the weight of the child:

< 50kg - Green label



> 50kg - Orange label



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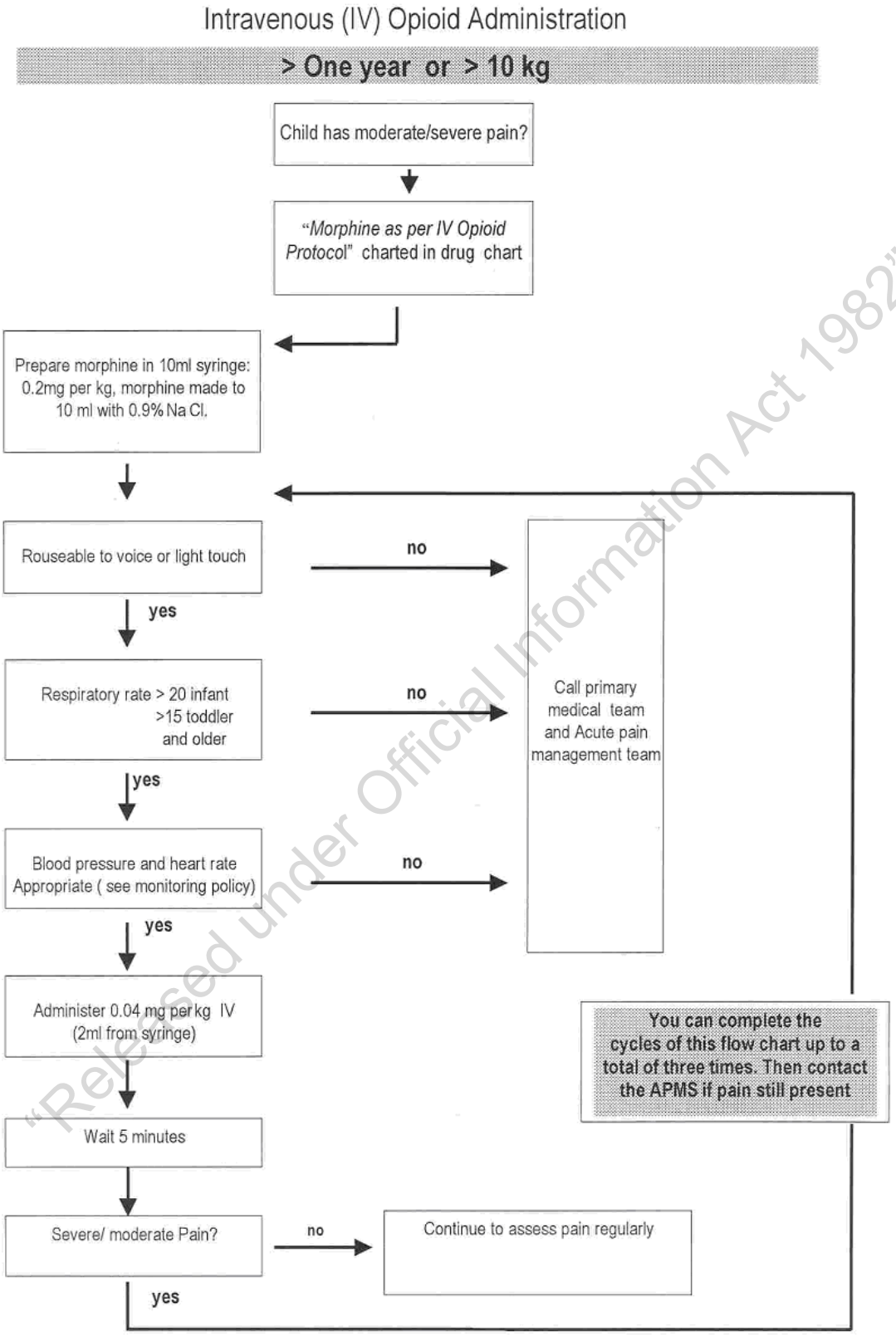

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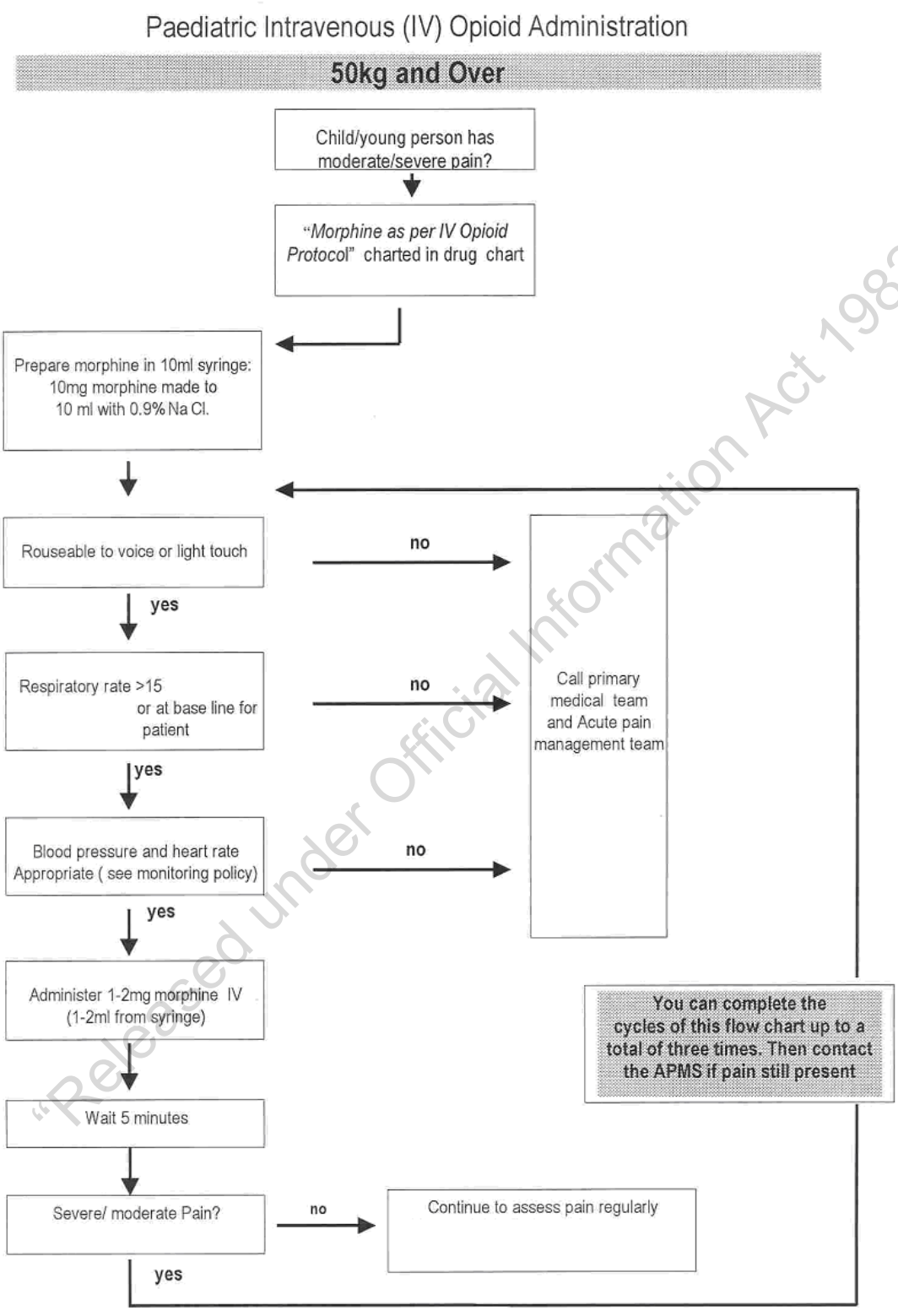

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Appendix 2: Continuous IV Opioid or Ketamine Infusion

This section outlines the process for commencing a continuous opioid or ketamine infusion.

Criteria for IV opioid or ketamine infusion:
The child:

- Requires an IV opioid or ketamine infusion for pain management
- Has patent IV access
- Has a prescription charted by medical staff on the Paediatric Advanced Analgesia Prescription (AAP) chart

Prescription of intravenous opioid or ketamine infusions:

- The opioid is prescribed by the anaesthetist or other medical staff on the Paediatric AAP chart
- Ketamine can only be prescribed by the anaesthetist involved in the child's surgical procedure on the Paediatric AAP chart.

Refer to back page of the Paediatric AAP chart for Department of Anaesthesia Paediatric (≤50Kg) Analgesia Guidelines.

Medicine preparation - opioid or ketamine infusion via an infusion pump

Complete the following steps to prepare the opioid or ketamine syringe:

- Check prescription – IV opioid or ketamine (dose calculated according to protocol based on the weight of the child)
- The infusion volume range is 0-4ml. (Ketamine range will be 0-2ml/hr on the new Paediatric AAP chart) Increases to this volume range may only be made by a consultant anaesthetist or paediatrician
- Ensure that the prescription is dated and includes a legible signature of the prescribing doctor

Procedure for Drug Preparation

Prepare opioid or ketamine in a 50ml bag – check opioid or ketamine dose, measure in a 1ml syringe and add to the bag.

If 50kg or less the dose of opioid or ketamine is calculated according to the weight of the child.

Examples: 32kg x 5mg = 160mg ketamine
32kg x 0.5mg = 16mg morphine
32kg x 5mcg = 160mcg fentanyl

- Label the bag with a medication added label clearly stating the type of medication added, the dose added to the bag and the time and date added. This must be signed by two nurses who have independently double checked. **To easily identify lines, add colour specific labels to both ends of the IV line - blue morphine/fentanyl, yellow ketamine labels.**

- Document each new bag on the advanced analgesia administration chart

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- When discarding unused opioid or ketamine at the completion of therapy document wastage (volume) on the Paediatric AAP chart.

Infusion Equipment Management
The infusion equipment used is the CADD Solis /infusion device.

Continuous infusion (morphine and ketamine)

Management of the Infusion

- The RN may alter the infusion rate within the parameters prescribed according to pain requirements and side effects. Changes must be recorded on the Paediatric AAP chart.
- The APMS will review the child at least once a day and more often as needed by calling #6449.

Treatment of Pain <u>not controlled</u> on an Opioid Infusion

It is unusual for a child on a maximal dose of opioid infusion to still have pain. If a child is still perceived to have pain on a maximal dose of an Opioid infusion:

- Contact the APMS.
- Carefully evaluate the patient (particularly the non-verbal child) to ensure that it is indeed *pain,* and there is not some other cause for the distress. The evaluating APMS member should give strong consideration to contact the paediatric anaesthetist and the surgical team on call.
- Ensure that all non–opioid analgesics that are appropriate for the child have been administered.
- Intermittent muscular spasm may cause pain but is not well treated with further opioids.
- If appropriate, a reduced bolus dose of fentanyl may be carefully titrated according to the table below. Fentanyl is chosen for its quicker onset and offset when already receiving an opioid infusion.
- <u>After an additional bolus</u> Medical and Nursing staff caring for the patient should be informed and be alert for sedation and respiratory depression.

Age and Weight of Child	Preparation (fentanyl in 10ml syringe)
Infants <3months of age	1mcg/kg fentanyl made up to a total of 10ml with 0.9% Sodium Chloride, e.g. 4kg*1 = 4mcg in 10ml Administer 0.5ml from syringe
Children<1year or <10kg	1mg /kg fentanyl made up to a total of 10ml with 0.9% Sodium Chloride, e.g. 5kg*1 = 5mcg in 10ml Administer 1.0ml from syringe
Children>1year or >10kg	1mcg /kg fentanyl made up to a total of 10ml with 0.9% Sodium Chloride, e.g. 15kg*1 = 15 mcg in 10ml Administer 2.0ml from syringe
Children >50kg	10mcg fentanyl per ml- 100mcg fentanyl made up to a total of 10ml with 0.9% Sodium Chloride. Administer in 1ml bolus according to need.

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Discontinuation of Infusion

The infusion can be discontinued by a RN in consultation with a medical practitioner when minimal use is required and the patient is able to tolerate analgesia by alternative routes

- Ensure adequate analgesia is prescribed
- Continue regular pain assessment
- Sign national medication chart once discontinued

Advise APMS when a PCA has been discontinued.

For more complex children the ward team should consult with the APMS regarding appropriate analgesia replacement prior to stopping the infusion.

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Appendix 3: Patient Controlled Analgesia (PCA)

The decision to select PCA therapy is made by the anaesthetist after talking with the child and/or parents/caregivers as appropriate. The type of surgical procedure planned and subsequent duration of therapy are other considerations taken into account. Education of the child for PCA therapy ideally should occur pre-operatively. This is not always possible when a child goes to surgery acutely. Education includes basic information regarding the device. There is an patient information leaflet available with information relating to PCA therapy.

PCA therapy is always nurse assisted to some degree. All children on a PCA initially require some assistance, often in the form of a reminder to press the button and in reinforcement of pre-operative teaching. In the case of a child having acute surgery additional instruction and support may be required.

To facilitate effective PCA use, the child should:

- Be able to handle the PCA button
- Want to use the PCA
- Understand that pushing the button will not give them their pain medicine every time and the PCA may not remove all their pain
- Understand the pain assessment tool
- Understand that the RN is there to help them with their pain
- Be able to explain how the PCA works and understood the concepts

The appropriate age for a child starting a PCA is 6-7 years, depending on the individual child's ability to comprehend the above.

Drugs and dosage

Medication	Dosage
Fentanyl (Dose calculated according to the child's weight) diluted up to a total of 50ml with sodium chloride 0.9%	Fentanyl 5mcg/kg (1ml = 0.1mcg/kg/ml)
Morphine (Dose calculated according to the child's weight) diluted up to a total of 50ml with sodium chloride 0.9%.	Morphine 0.5mg/kg (1ml = 10micrograms/kg/ml)
Ketamine May be added to the PCA morphine bag (0.5mg/Kg)	Ketamine 0.5mg/kg (1ml = 10micrograms/kg/ml)

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Standard PCA prescription parameters

Bolus dose:	1 to 2 ml
Delay:	5 minutes
Hourly limit:	10 ml
Background infusion:	0.5 to 1 ml/hr

- **Bolus dose:** The amount of the drug that the child will receive each time they press the PCA demand button (morphine 1 to 2ml).
- **Delay or Lockout interval:** The fixed time between boluses programmed into the device. The child will not be able to receive any further bolus for this period no matter how many times he/she presses the button.
- **Hourly limit:** The maximum amount of the drug the PCA device will allow the child to receive per hour (includes the background infusion).
- **Continuous infusion:** infusion also called a background infusion - used routinely with younger children.

PCA Infusion device

The PCA infusion device is the **CADD Solis Ambulatory Infusion Pump**.

The Operating Instructions and Manual for this pump are available in each clinical area, or the Post Anaesthetic Care Unit (PACU). For any concerns regarding the programming of this pump, please contact the staff in PACU out of hours, or APMS 0800 – 1830 Monday to Friday on #6449.

- When setting up a standard Paediatric PCA Prescription, it is necessary to select the Paediatric Protocol on the CADD Solis Pump, unless otherwise indicated
- There is a difference in the total bag volume between the Paediatric Protocol (50 ml) and the Adult Protocol (100 ml)
- When utilising the Paediatric PCA Protocol on the CADD Solis Pump, there is a predetermined hourly maximum of 10 ml. This may be altered to a lower setting, but not higher
- When it is deemed necessary by the PCA prescriber to utilise the Adult Protocol, **there is no hourly maximum, only a Bolus dose and lock out time.**

If there is a technical problem with the PCA, please return to PACU with a note attached documenting the problem and error code if one was displayed on the LCD. If it was in current use please ask for a replacement. PACU will send the PCA device to Biomedical Engineering for inspection. The PCA infusion devices receive an annual Biomedical Engineering maintenance check. A label is attached to the device indicating the date when this was performed and when the next check is due.

Discontinuation of PCA

The PCA can be discontinued by a RN in consultation with a medical practitioner when minimal use is required and the child is able to tolerate analgesia by alternative routes.

- Ensure adequate analgesia is prescribed
- Continue regular pain assessment
- Sign national medication chart once PCA discontinued.

Advise APMS when a PCA is to be discontinued.

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Appendix 4: Nurse administered analgesia via a PCA infusion device is often referred to as Nurse Controlled Analgesia (NCA)

NCA is recognised as an effective way to overcome the problem associated with children who are unable to use the PCA device but who would benefit from intermittent pain relief. It may be used in combination with a continuous infusion. It is recognised that in some situations, the RN may administer the patient's bolus dose.

NCA is appropriate in the ward or unit situation where it is impractical to repeatedly administer intermittent opioids by IV bolus. NCA maintains a closed system, therefore, minimises the risk of infection associated with repeated IV access. In addition, it is a practical solution to managing an IV opioid bolusing process in the ward situation.

NCA is where the RN takes control of the PCA infusion device away from the child. The RN presses the PCA button for the child after assessing the need for analgesia, taking into account level of consciousness and respiration rate.

NCA contradicts the traditional teaching with regard to PCA therapy. The inherent safety mechanism being that the child would be too sleepy to press the button if he/she had been given too much opioid.

The following safety precautions clearly specify the criteria required when applying NCA and are similar to the monitoring requirements associated with intermittent IV opioid titration.

Criteria for NCA via a PCA infusion device:

The following criteria must be followed for nurse administered PCA:

- The prescription must be written stating **Nurse Controlled Analgesia** in full
- One nurse per duty is to manage the NCA
- Hourly recording of doses administered must be maintained

NCA can be undertaken when the child:

- Indicates moderate to severe pain
- Is not sedated or asleep
- Has a respiratory rate appropriate for age per minute
- Has adequate oxygen saturation
- Indicates need for pain relief and has a reason for not being able to administer the dose him/herself

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Appendix 5: Intranasal Fentanyl

This section outlines the process for the utilisation of Intranasal fentanyl as an analgesic. Intranasal fentanyl is particularly useful in situations where IV access is yet to be established, but some form of advanced analgesia is required.

The intranasal delivery of fentanyl provides rapid absorption (therapeutic levels within 2 minutes) and excellent bioavailability (at least 50%). There is a duration of action of at least 30 minutes.

Considerations

- Not recommended in children under 2 years
- Head trauma, chest trauma, abdominal trauma and hypovolaemia
- Intranasal fentanyl should be used with caution in children with upper respiratory tract infections (URTI), or other cause of blocked nose, as this may cause unreliable delivery of the drug.
- When prescribing Intranasal Fentanyl write the word 'Intranasal' and not 'IN' – this is to prevent confusion with 'IV' and "IM'
- Prior dosing with opioids may produce drug accumulation
- Co-administered sedatives and co-morbid medical conditions may require a modified dose.

Preparation

Use IV preparation – 100mcg/2ml
1ml tuberculin syringe and a Mucosal Atomiser Device (MAD)

Dose

1.5 micrograms / kg (minimum dose of 20 micrograms, maximum dose of 100 micrograms)
A second dose of 0.5 micrograms / kg can be given after 10 minutes if significant pain persists.

Technique

The patient should be reclining at 45 degrees and the syringe should be held horizontal and the contents expelled as a mist into the nares in one rapid dose.

Doses of 1 ml (50 micrograms) or more should be divided between nares.
(The volume to be inhaled limits use of intranasal fentanyl to children under 70 Kg).

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Appendix 6: Opioid or Ketamine monitoring (children)

Process
Monitoring includes:

- Pain assessment
- Level of sedation
- Respiratory
- Cardiovascular
- Central nervous system
- Other

Monitoring for children on Opioid or Ketamine infusion or PCA
Continuous Cardiorespiratory (heart rate and oxygen saturation) monitoring and hourly documentation is required for all children on a PCA, Opioid infusion or Ketamine infusion.

Intermittent Opioid boluses / Intranasal Fentanyl
For children requiring intermittent opioid boluses or intranasal fentanyl, oxygen saturations, heart rate, respiratory rate and level of consciousness should be monitored every five minutes while the opioid is being titrated, until adequate pain relief is achieved. For the next 30 minutes the child's oxygen saturations, heart rate and level of sedation should be monitored at 15 minute intervals, then every 30 minutes for the next hour.

1. Pain assessment

Pain measurement and assessment in children presents many challenges due to the multi-dimensional elements involved. Basic assessment of pain involves measurement of pain intensity over a period of time, location of pain and evaluation of the physiological and behavioural responses to pain. In addition, consider the pharmacological or non-pharmacological therapy responses.

The clinical assessment of pain may require observation of the following:

- Crying/vocal expressions. Inconsolable crying depicted as a pain cry either resting or associated with movement. Grunting, whimpering etc.,
- Body movements/behaviour. Tense torso or limbs, tight fists, guarding, withdrawing from the environment
- Facial expression. Grimacing, brow bulge, eye squeeze, naso-labial furrow
- Physiological. Responses believed to be associated with pain, ie., elevated HR, RR, increase in palmar sweating
- Parent/caregiver believes the child is in pain
- Anticipation of moderate to severe pain due to a planned procedure

The gold standard for pain assessment for verbal children is self-report of pain, i.e., the child describes their pain. The most appropriate pain assessment tool must be identified for the child that takes into account chronological age, developmental level and the child's ability to comprehend.

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The pain assessment tools used at CCDHB for children 6 months-15 yrs are:

- FLACC* - newborn to age 3yrs (not NICU)
- Faces pain scale – suitable from age 4yrs
- Numerical rating scale – suitable 6-7yrs
- Verbal rating scale – suitable age 5yrs
- *r*FLACC** - cognitive or verbal impairment (any age)

* FLACC is a behavioural pain assessment tool used with children who are not able to self-report pain – newborn to 3 years. This also provides a 0-10 score. FLACC stands for face, legs, activity, crying and consolability.

** *r*FLACC is a tool validated to evaluate pain severity and intensity in children who have cognitive and verbal developmental delay.

Assessing the child's ability to move, deep breathe and cough is also an important component of a functional pain assessment. *Level of consciousness.* Use the following AVPU scale. Hourly monitoring is essential, always comparing previous score.

The AVPU sedation scale is used to monitor sedation:

- A Awake and alert
- V Responds to voice
- P Responds to pain
- U Unconscious/Unrousable

Watch points:

- **Do not administer further opioid if LOC is a P or U – seek medical assistance**
- **Notify medical staff or APMS #6449 if pain persists despite sedation.**

Management of over-sedation

Over-sedation management is directed by the Paediatric Early Warning Score (PEWS) and Escalation Protocol. As per the Paediatric Vital Signs chart any vital sign that falls within the blue zone (or total score of 8 or more) mandates a PET‟ 777 call.

If the child is **rousable but falling asleep mid-conversation** give no further opioid. Stop PCA and contact APMS.

If the child only **responds to voice** and the **respiratory rate is outside the appropriate age-related parameter:**

- Assign a RN to stay with the child
- Turn off the PCA device
- Summon urgent medical assistance (registrar review within fifteen minutes). Inform medical team, PAR and APMS. Physical stimulation and withholding the opioid may be all that is required.

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If the child only **responds to pain call for URGENT medical assistance (PET call).**

If sedation is likely to be opioid related prepare naloxone for administration. Ensure a RN is assigned to stay with the child. Continue to monitor the child's level of sedation and respiratory rate.

If the child is **Unconscious/Un-rousable or/and a respiratory rate** RR<8 (over 5 years) RR<10 (1-5 yrs) RR<15 (under 1 yr) **'PET' call (777)** call is mandatory.

Call 777 PET for any child you are seriously concerned about regardless of vital signs/PEWS.

Respiratory monitoring
Hourly monitoring of respiratory rate is required, observing for hypoventilation and changing pattern of breathing that may occur with administration of opioids. Refer to PEWS chart for age appropriate respiratory parameters.

Oxygen saturation monitoring

- Report any significant decrease in oxygen saturation to the appropriate medical team
- There must be a RN available to respond to a monitor. It is acceptable for the RN to be caring for more than one patient but when titrating morphine, a recommendation would be that another RN be aware that he/she is doing this and if necessary temporarily keep an eye on any other children in their care
- All children with neurological abnormalities or with a history of obstructive or central sleep apnoea have an increased risk of opioid induced respiratory depression. An awareness of potential problems is necessary with this group. Morphine metabolites may accumulate, leading to an increased potential for central nervous system effects. In addition to careful monitoring, a decrease in the infusion rate is recommended two to three days from commencement of the infusion

Cardiovascular monitoring
Heart rate and blood pressure monitoring is important in the context of the full clinical picture:

- Heart rate monitoring according to clinical picture
- Blood pressure – baseline, once per shift and prn according to clinical requirement

Central nervous system
Opioids cause constriction of the pupils (miosis) and sedation, but it is important to remember that any sedation may indicate respiratory depression. Mild euphoria is a common effect with opioids and dysphoria and hallucinations may also occur occasionally.

Other considerations:

- Nausea and vomiting is a common and troublesome side effect related to morphine administration. Hourly assessment is required
- Purities (itching): Assess for treatment of annoying itch related to morphine administration
- Urine retention: Morphine can interfere with bladder function leading to retention of urine. Children requiring major surgery often have a catheter inserted at the time of operation, however, those who have not been catheterised need to be watched for retention:
    - Encourage to pass urine

- Ask the older child to report: symptoms of discomfort
- Frequency, urgency, passing small volumes
- Report if there is no urine output 4–6 hours post-operatively
- Catheterisation may be required
- Maintain a complete fluid balance record

Watch point:

- **Do not administer further opioid if LOC is a P or U – seek medical assistance**
- **Notify medical staff or APMS #6449 if pain persists despite sedation.**

Title: Administration of Opioid Substitution Treatment whilst a hospital inpatient

Type: Policy	**HDSS Certification Standard**
Issued by: Clinical Governance Addictions CCDHB	**Version:** 1
Applicable to: All Opioid Treatment Staff	**Contact person:** Clinical Lead, Addiction Services, Team Leader, Addictions
Lead DHB: CCDHB	

Purpose:

The purpose of this policy is for all staff to follow this Opioid Substitution Treatment (OST) process when a person is admitted to hospital who is prescribed and administered OST.

Scope:

All staff involved with OST

Hospital wide - CCDHB and HVDHB

Definitions:

Opioid Substitution Treatment (OST)

OST refers specifically to the prescribing, dispensing and administering of opioids for the purpose of addiction treatment through a gazetted service. Methadone and Suboxone® are most commonly used although some people may be prescribed other opioids e.g. morphine or codeine. Suboxone is a combined product containing the synthetic opioid buprenorphine and naloxone.

OST is highly regulated and each daily dose is managed accordingly. Most patients' OST is prescribed by CCDHB Opioid Treatment Service whilst some may be prescribed by their GP (authorised by CCDHB OTS).

Regardless of whether medicines are prescribed by a general practitioner or OTS, patients will have an allocated case manager and prescribing information held by CCDHB OST.

Consume on Premises (COP) and Takeaway doses (TA)

Opioid substitution treatment is highly regulated for the purposes of treating addiction, reducing risks associated with opioid use (intoxication and overdose) and preventing diversion of doses. For this reason, opioid substitution is prescribed as either COP with supervised doses consumed at community pharmacies, or as TA in which doses are provided in single portion containers to be taken home.

Process for a patient admission to a hospital ward

The following describes the process to follow when admitting an OST patient:

i. **Clinical team to inform CCDHB OTS that the patient has been admitted to hospital.** CCDHB OTS will coordinate post-discharge reviews if indicated, and will place a hold on the patient's community pharmacy prescription for the duration of their hospitalisation,.
Hospital doctor or pharmacist to contact the patient's usual dispensing pharmacist, to confirm the patient's most recently dispensed OST dose, before hospital prescribing and administration can take placeIf takeaways were provided for the day of admission then the patient should be assumed to have taken this unless clear evidence to the contrary and no further doses provided. In out of hours situations current dose of OST may be obtained via Comporto (this will not have information on dispensing arrangements).

- Copy of current prescription sent to the ward by CCDHB OTS after the case manager confirms the patient's last consumed dose with the patient's pharmacy
- Written notification signed by the prescriber (CCDHB OTS prescriber or GP)
- Verbal confirmation from the prescriber (CCDHB OTS or primary care prescriber)

ii. **If the patient has missed three or more consecutive doses prior to admission,** the regular dose may need reducing. CCDHB OTS will advise on appropriate dosing. In out of hours situations refer to National Guidelines for guidance (see related documents)

iii. **Ask the patient if they have takeaway doses of OST in their possession**. Secure these in the controlled drug cupboard and record in the ward controlled drug register.

Note: Patients on OST still need pain management where indicated. Use of non-opioid treatment is preferred. Opioid treatment for pain may need higher doses than normally indicated in non-tolerant patients. e.g. Suboxone®, may cause precipitated withdrawal.
Contact CCDHB OTS for advice about pain management if concerned, particularly regarding discharge medications. The Acute Pain Team will also give assistance with pain management.

Contact Details for Dose Confirmation or Advice

i. To contact the patient's community pharmacist: ask the patient for their pharmacy's name.

ii. To contact CCDHB OTS if the usual case manager is unknown:
- **Monday to Friday, 0830-1630, ph (04) 4949170 or fax 04 4949176**

iii. Confirmation of doses can be obtained through Conporto with dispensing arrangements also available through Te Haika.

Discharge of a Patient on Opioid substitution Treatment

The following describes the process to follow when discharging a patient who is prescribed OST:

Administration of opioid substitution treatment whilst a hospital inpatient

NOTE: OTS medications must not be provided by hospital staff on discharge

I. Notify CCDHB OTS of the patient's discharge date, the last dose administered in hospital, and any takeaway doses that are returned to the patient. CCDHB OTS will follow up with the patient and will reactivate dispensing at the patient's usual community pharmacy
II. Takeaway doses may be returned to the patient on discharge or returned to the pharmacy for appropriate destruction.
III. If the patient is discharged on a weekend or public holiday, CCDHB OTS can arrange follow-up doses if informed in advance.
IV. Ensure that all discharge arrangements are clearly recorded, dated and signed in the patient's clinical record.
V. Any controlled drugs provided on discharge should be either authorised or prescribed by CCDHB OTS staff. The authorisation should be documented on the prescription or via a written communication to the patients pharmacy. The authorisation should restrict prescribing to the patients usual pharmacy and note that supply is approved by OTS.

References:

- Opioid Substitution Treatment 2014-New Zealand Practice Guidelines.

Related Documents:

- Capital and Coast DHB Policies and Guidelines
- Opioid Substitution Treatment: New Zealand Practice Guidelines 2014
- Misuse of Drugs Act 1975

Document facilitator: Anaesthetic SMO

Senior document owner: Clinical Leader Obstetric Anaesthesia / Director of Midwifery

Document number: 1.104128 **Issue Date** 11 November 2020 **Review Date** 11 November 2023

Level: Service Obstetrics

Type: Guideline

Name: Intrapartum intravenous fentanyl prescribing and administration by midwives (pregnancies > 37 weeks)

Background

Changes to the Medicines Amendment Act (2013) and Misuse of Drugs Regulation Amendments (2014) allow midwives to prescribe both morphine and fentanyl, in addition to pethidine, from July 2014 onwards.

Fentanyl is a synthetic opiate with a hundred times the potency of morphine. It has no active metabolites and is therefore preferable to morphine in women with impaired renal function. Additionally it has a faster onset and faster offset than morphine, when given in small doses.

Purpose

The purpose of this guideline is to promote consistent safe practice when prescribing and administering intravenous fentanyl for intrapartum pain relief in pregnancies > 37 weeks gestation at Wellington Regional Hospital.

Scope

Midwives may prescribe opiate analgesia in labour because it is within their scope of practice. **Only one type of opioid should be prescribed** at any one time to a labouring woman by midwifery staff.

This policy applies to midwives working in the delivery suite.

Guideline

Opioids may be chosen in situations where non-pharmacological methods and inhaled nitrous oxide/oxygen (Entonox) have been ineffective or rapid-onset analgesia is needed because of distress. Due to its favourable pharmacokinetics, fentanyl is more suitable for situations when rapid analgesia is required. It is not suitable for administration by any route other than the intravenous route in a midwife-administered setting.

Document facilitator: Anaesthetic SMO

Senior document owner: Clinical Leader Obstetric Anaesthesia / Director of Midwifery

Document number: 1.104128 **Issue Date** 11 November 2020 **Review Date** 11 November 2023

Midwives administering intravenous fentanyl must:

- Practice in accordance with the Capital and Coast District Health Board (CCDHB) policy for prescription and administration of controlled drugs
- Only prescribe opioids after undertaking a comprehensive assessment of the woman
- Ensure that the woman is fully informed and consent is documented within the clinical record
- Not prescribe opioids for women in premature labour due to the risk of increased respiratory depression in the neonate.
- Ensure maternal and fetal wellbeing prior to and after administration
- Consider consultation with a specialist (obstetrician and/or anaesthetist) if a woman requires more than one intrapartum adult dose and further pain relief is required
- Fentanyl is **not** available for use at Kenepuru and Paraparaumu maternity units.

Indications

- Non-pharmacological or inhalational forms of pain relief have been declined or exhausted.
- Maternal request
- Rapid-onset analgesia is required

Contraindications

Fentanyl should not be prescribed by midwives if any of the following conditions exist:

- Allergy to fentanyl
- Other opioids have been given in the last 4 hours
- Remifentanil patient controlled analgesia (PCA) may be required as part of the ongoing management
- Severe hepatic disease
- Significant cardiac disease
- Moderate or severe asthma or other severe respiratory disease
- Severe neurological disease especially affecting their respiratory system
- Morbidly or supramorbidly obese (BMI > 40)

Precautions

Before prescribing and administering fentanyl an assessment of the woman must be undertaken. This should include measurement of respiratory rate, heart rate, blood pressure and temperature. It is **not** advisable to administer fentanyl if the labouring woman has any of the following:

- Respiratory rate < 12 breaths per minute
- Systolic blood pressure < 100mg Hg
- Drowsiness
- Unrelieved nausea or vomiting
- Weighs less than 50 kilos (especially for repeated doses)
- Is expected to give birth *within 30 minutes,* to avoid neonatal respiratory depression

Usual dose	Onset (mins)	Peak effect (mins)	Elimination half life	Effects /Caution / Monitoring required
See flow diagram on next page	1 - 3	5	Maternal : 3 - 4hrs Neonatal: 1 - 7hrs	• Maternal apnoea and respiratory changes • Transient (30mins) decreased FHR variability • Neonatal apnoea and respiratory depression • O2 saturation monitoring during and 1 hour post administration **Consult after 5 cycles completed (see flow chart):** • **<50kg - 50 microgram** • **>50kg - 100 microgram**

Common maternal side-effects of fentanyl include:

- Nausea and vomiting
- Sedation
- Respiratory depression
- Postural hypotension

Maternal and fetal assessment while administering fentanyl

- Prior to the administration of each fentanyl dose it is advised that the midwife assess and document the woman's:
  - Level of consciousness
  - Progress in labour
  - Timing and response to a previous dose (if appropriate)
  - Fetal wellbeing
- The peak effect of an IV dose of fentanyl may not occur for more than 5 minutes and the *woman should be observed closely for 15 minutes.*
- <u>If the respiratory rate goes below 12 or any other observations are concerning the woman needs an urgent medical review.</u>
- <u>A woman who is drowsy with a low respiratory rate will require naloxone</u>

Document facilitator: Anaesthetic SMO

Senior document owner: Clinical Leader Obstetric Anaesthesia / Director of Midwifery

Document number: 1.104128 **Issue Date** 11 November 2020 **Review Date** 11 November 2023

Fetal monitoring

- Structured intermittent auscultation (SIA) can continue to be used in the **absence** of any maternal medical indications, pregnancy or labour complications.
- If continuous electronic fetal monitoring (EFM) is being used reduced variability will be noted within approximately twenty minutes of the fentanyl being administered. This induced quiet period in the fetal heart rate tracing **does not** necessarily indicate fetal compromise.

Neonatal Observations

Fentanyl use in newborn's has been known to cause chest rigidity therefore any infant born with signs of respiratory depression should be reviewed by a NICU staff member as soon as possible.

All infants whose mother has received fentanyl within 4 hours of birth will require continuous oxygen saturation monitoring for the first hour of life.

Observation frequency and monitoring as per NOC/NEWS (newborn observation chart/newborn early warning score)

Associated Quick Reference:

Quick Ref: Intrapartum intravenous fentanyl prescribing and administration by midwives (pregnancies > 37 weeks) CapitalDocs ID 1.105102

Appendix 1: Administration of IV Fentanyl Using the Intrapartum IV Opioid Protocol

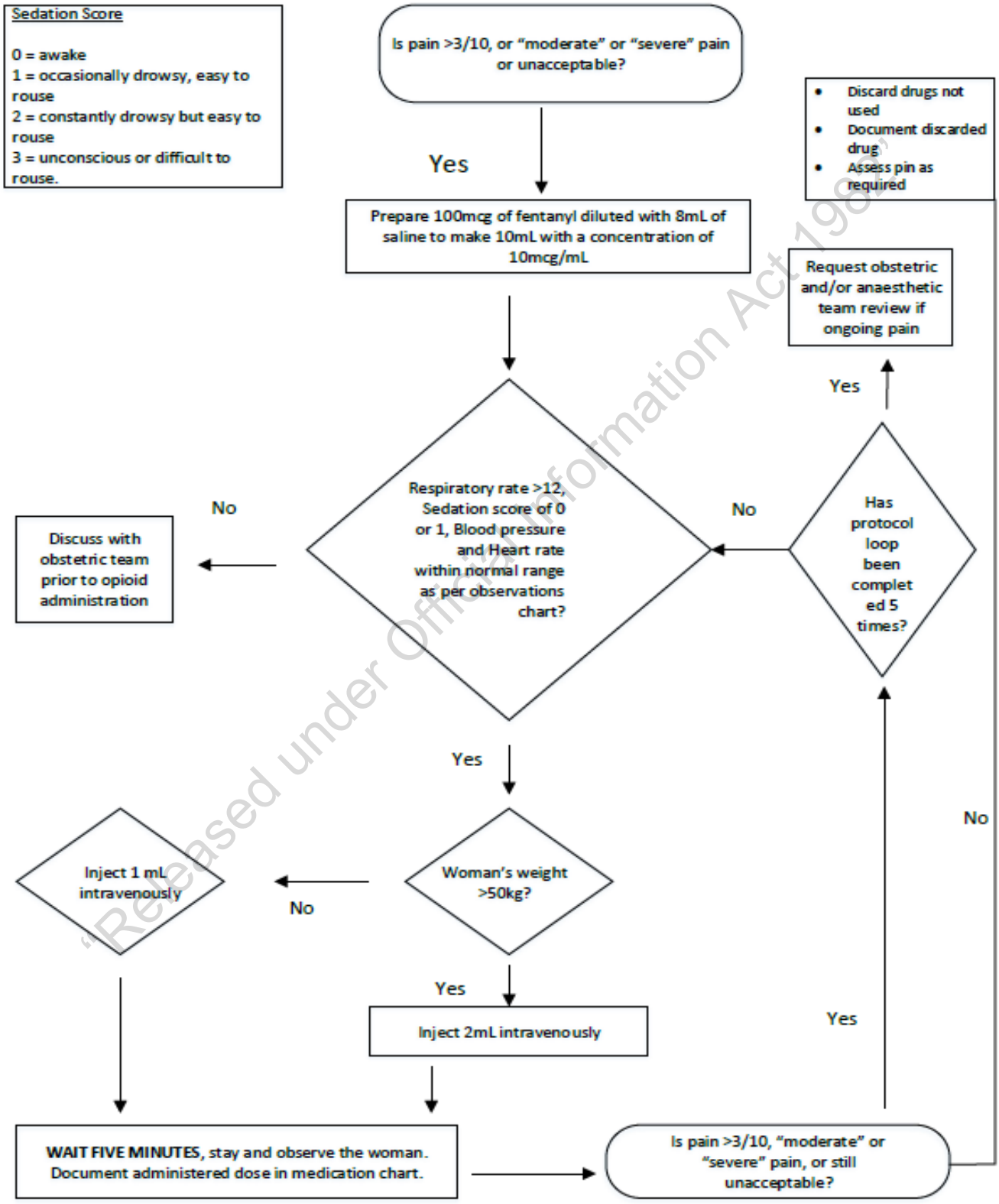
Document facilitator: Anaesthetic SMO

Senior document owner: Clinical Leader Obstetric Anaesthesia / Director of Midwifery

Document number: 1.104128 **Issue Date** 11 November 2020 **Review Date** 11 November 2023

Appendix 1

Administration of IV Fentanyl Using the Intrapartum IV Opioid Protocol:



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Symptom Control for People Dying with COVID-19

About These Guidelines:

These are hard and challenging times. We are facing situations that we hoped never to encounter. Working together we can make it through with empathy, compassion, kindness and sense of service intact.

These guidelines have been assembled from consensus and the papers that have been published to date: they should be seen as a fluid response to a fast-moving pandemic. As we learn more about the specific needs of people dying with COVID-19, these guidelines will be further updated, and we welcome your input and experience in helping to keep these as useful and relevant as possible.

As with all guidelines, they are designed to support decision making and best practice alongside individual assessment and ongoing reassessment as possible. No one size fits all, and the guideline recommendations should be tailored to individual circumstances.

If local guidelines are available, these guidelines can be used in addition as appropriate. In some instances, these guidelines may not necessarily be appropriate or fitting.

Whilst these guidelines are aimed specifically for people with COVID-19, the principles may also apply to people who are dying of other conditions too during a crisis.

For symptoms not covered in these guidelines, such as pain, refer to local palliative care service guidelines. These guidelines refer to adult patients and are designed to complement existing national guidelines for end-of-life care, such as Te Ara Whakapiri[1], as well as examples of other published best practice in response to the pandemic[2].

For paediatric patients, see https://www.starship.org.nz/health-professionals/

Please do not share these guidelines on social media: the information may be sensitive to the public if not given the appropriate context.

Please feedback to Rachel Wilson (rachel@hospice.org.nz) with your experience, and what else needs to be added or changed, as we learn more about how best to help people needing palliative care in a COVID-19 pandemic.

Dr Rachel Wiseman (CDHB) & Dr Jonathan Adler (CCDHB)
Guideline Leads

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Overview:

Evidence over the last 20 months from caring for people dying from COVID-19 has reported:

1. Most people die from respiratory or cardiac failure.
2. Breathlessness, agitation, drowsiness and delirium are the commonest symptoms.
3. Pain and retained secretions are not so common.
4. Symptom control is on balance no different from people dying from non-COVID illness[3] other than
    a. People are often on high flow oxygen/non-invasive ventilation (NIV) if dying in hospital[4].
    b. People can deteriorate very rapidly[5], and parenteral administration is needed more frequently.
    c. People are referred late in the course of their illness to palliative care, often within the last three days of life[6].
5. Benzodiazepines and opioids are the commonest medications used, with antipsychotics third.
6. Syringes drivers are often used and should be started early; frequent dose escalation is common in the last three days of life[2].

Breathlessness

General principles of management in chronic refractory breathlessness include:

1. Check and treat reversible causes.

2. Use non-pharmacological management techniques if appropriate (see detail below).

3. Use opioids (morphine) as first line pharmacological management:
    a. Morphine is well-established for palliation of chronic refractory breathlessness at low doses[7]
    b. When used in low doses and titrated appropriately, morphine is safe, even in those with respiratory conditions[8]
    c. Evidence for other opioids is lacking, therefore morphine is first choice in those with an eGFR>30 ml/min/m^2
    d. See tables below for further guidance on dosing

4. Use benzodiazepines (usually midazolam, sublingual or subcut) second line, or first line alongside an opioid if significant anxiety also present.

5. Anxiety and breathlessness:
    a. An element of anxiety or panic is almost universal when acute breathlessness is present. The anxiety is usually because of the breathlessness (not vice versa)
    b. Remain calm, reassure, stay with the person if resource allows
    c. Utilise non-pharmacological management strategies when the level of anxiety is low enough to allow this (see below)
    d. Mainstay of pharmacotherapy is benzodiazepines – see tables for dosing guidelines
    e. Avoid midazolam nasal spray as little evidence for effectiveness

6. Oxygen and breathlessness:

   a. Oxygen has not been shown to be beneficial for managing non-hypoxic breathlessness and is not generally used for those with oxygen saturations >90%.
   b. Hypoxaemia (without other causes of breathlessness) is common in COVID-19 with carbon dioxide levels often normal or low (Type 1 respiratory failure). People are often more alert than in Type 2 respiratory failure where hypercapnia can cause drowsiness.
   c. People may also not be breathless even when oxygen saturations are low, though air hunger (an awareness of an uncomfortable urge to breathe) is commonly described for which opioids may be helpful.
   d. Where oxygen provision is scarce (for those dying in community settings, for example) it should not **routinely** be provided, especially for non-hypoxic breathlessness.

7. Withdrawal of high-flow nasal cannulae oxygen or NIV:

   a. Where a diagnosis of dying has been made (last few days of life), a careful trial of downward titration should be considered. This may allow for lesser (non-aerosol) precautions to be used in the dying phase.
   b. Oxygen may be able to be withdrawn completely. Treat according to subjective dyspnoea rather than oxygen saturations. Wean gradually, aim for low-flow nasal cannulae as a minimum to allow closer contact with family members whilst dying.
   c. If considering withdrawal of NIV, deep sedation (unresponsive to voice) should be considered as respiratory distress can be anticipated upon withdrawal.[9] Administer stat doses as per final row of Table below, with repeated doses depending on response. Halve NIV pressures for 10-15 minutes prior to mask removal. Palliative Care advice strongly recommended.

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Other Symptoms:

Cough

a. Ensure aggravating factors such as gastro-oesophageal reflux, asthma and post-nasal drip are well treated
b. Opioids are the mainstay of therapy, use doses as per tables
c. Nebulisers (such as salbutamol or lignocaine) are not recommended as aerosol generating

Respiratory tract secretions

a. For those being actively treated, anticholinergic agents should be avoided as this may reduce the person's ability to clear secretions from the chest. Avoid saline nebulisers (aerosol generating)
b. For those in the last days of life, follow local guidelines. Support of whanau is important, not all people find this distressing. Close attention to positioning may reduce secretion pooling. Use anti-cholinergic agents as per local guidelines. Avoid intravenous or subcutaneous fluids. Use suction as last-resort due to infection control issues.

Fever

a. Reportedly common
b. Use cooling cares
c. Paracetamol PO/PR/IV

Delirium

a. Delirium may occur in any patient with acute illness and is a poor prognostic sign
b. Non-pharmacological management at end of life include treating reversible causes such as urinary retention, constipation, and hypoxia
c. Manage in a low stimulus environment where possible. Having a family member present may help, but may not be possible if infection control measures do not allow
d. In a low-resource setting, medication may be required to manage symptoms
e. Use pharmacological therapy only if the patient
    I. has distressing thoughts, hallucinations and/or
    II. is agitated and a danger to self, or others
f. In the absence of local guidelines, suggested medications:
    I. First line benzodiazepine: midazolam 2.5mg SC Q1H prn to max 10mg/24hrs or medical review
    II. First line antipsychotic: haloperidol 0.5mg PO/subcut q1h PRN to max 5 mg/24hr
    III. Second line antipsychotic or where sedation required: levomepromazine 12.5 q4h PRN to max 50 mg/24hr (more sedating)
g. A continuous infusion may be required for intractable symptoms combining both antipsychotic and benzodiazepine: seek palliative care advice

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Guidelines for Breathlessness Management (for locations where PO, SC or IV medications available)

Prognosis/treatment intent	Management	Medications and dosing ○ If eGFR <30, contact palliative care ○ Halve doses in frail or elderly ○ Opioid & benzodiazepine naïve patients only	Palliative care referral
Possibility of recovery alongside possibility of death in days/weeks Can be given alongside antibiotics/fluids/oxygen as needed for symptom control.	Correct underlying causes Address non-pharmacological management PRN oral opioids (or subcut if unable to swallow/absorb) PRN benzodiazepines for anxiety If PRNs frequent and effective, start regular opioid/benzodiazepine, in addition to PRNs	Morphine PO 2.5-5mg q1h PRN, **or** Morphine SC 1-2.5mg q1h PRN Lorazepam 0.5mg tds PO/SL PRN, **or** Clonazepam drops 2-3 drops (0.2-0.3mg) SL q8h PRN, **or** Midazolam SC 1-2.5mg q1h PRN **Regular:** Morphine SR (m-Eslon or Morphine LA) 10mg (or 20mg) PO BD, **or** Morphine 10 or 20mg/24hours via CSCI Lorazepam 0.5-1mg PO BD Clonazepam 3-5 drops (0.3-0.5mg) SL BD Midazolam 10mg/24hrs via CSCI	Not as routine: if uncertain refer Ensure goals of care and escalation plan are clear
Last days - hours of life, mild/moderate symptoms	As per local End-of-Life Care Guidelines e.g Te Ara Whakapiri (see Ministry of Health website)	As per local End-of-Life Care Guidelines Breathlessness: morphine SC 2.5-5mg q1h PRN as a minimum. Consider starting CSCI/24hours Morphine 10mg [4] Anxiety/distress: midazolam SC 2.5-5mg q30min PRN as a minimum	Not as routine: If uncertain refer
Last days – hours of life In extremis - severe dyspnoea Goal is relief of suffering without major sedation	Remain calm, present and reassure SC (or IV) morphine and midazolam stat and then via CSCI	Stat SC morphine 5mg + SC 5mg midazolam, **or** Stat IV morphine 2.5mg + IV 2.5mg midazolam Start CSCI or CIVI/24hours Morphine 10mg + midazolam 10mg	Strongly recommended as soon as possible: do not delay treatment
Last days – hours of life. Goal is sedation until death Intractable symptoms present despite above measures If invasive ventilation for extubation, as per ICU guidelines.	IV or SC infusion will be required	Stat IV morphine 2mg Q2Mins (max 10mg) and midazolam 2.5mg Q2Min (max 5mg) titrated until relief, or Stat SC morphine 10mg + SC midazolam 10mg IV or SC infusion morphine /midazolam/levomepromazine as discussed with palliative care team See separate notes on palliative sedation	Strongly recommended as soon as possible

Abbreviations: ICU = Intensive Care Unit, PRN = Pro Re Nata/as needed, SC= Subcutaneous, IV = Intravenous, CSCI = Continuous Subcutaneous Infusion, CIVI = Continuous Intravenous Infusion, PO = Per os/oral, SL = Sublingual, BD = Bis in die/twice a day

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Guidelines for Breathlessness management (for locations where only oral meds available - no SC or IV)

Refer to Sublingual Medications Guidelines

Prognosis/treatment intent	Management	Medications and dosing ○ If eGFR <30, contact palliative care ○ Halve doses in frail or elderly ○ Opioid & benzodiazepine naïve patients only	Palliative care referral
Possibility of recovery alongside possibility death in days/weeks Can be given alongside antibiotics/fluids/oxygen as needed for symptom control.	Correct underlying causes. Address non-pharmacological management PRN oral opioids (or subcut if unable to swallow/absorb) PRN benzodiazepines for anxiety If PRNs frequent and effective, start regular opioid/benzodiazepine, in addition to PRNs	Morphine PO 2.5-5mg q1h PRN, **or** Morphine elixir 10mg/mL SL 2.5mg (0.25mL) q1h PRN Lorazepam 0.5mg tds PO/SL PRN, **or** Clonazepam drops 2-3 drops (0.2-0.3mg) SL q8h PRN, **or** Midazolam 15mg/3mL 1.25-2.5mg (0.25-0.5mL) SL q1h PRN Regular: Morphine SR (m-Eslon or Morphine LA) 10mg (or 20mg) PO BD (only if able to swallow) Lorazepam 0.5-1mg PO/SL BD Clonazepam 3-5 drops (0.3-0.5mg) SL BD	Not as routine: if uncertain ring to consult Ensure goals of care and escalation plan are clear
Last days - hours of life, mild/moderate symptoms	As per local End-of-Life Care Guidelines e.g Te Ara Whakapiri (see Ministry of Health website)	As per local End-of-Life Care Guidelines Morphine elixir 10mg/mL SL 2.5mg (0.25mL) q1h PRN, **and/or** Clonazepam drops 2-3 drops (0.2-0.3mg) SL q8h PRN, **or** Lorazepam 0.5mg tds PO/SL PRN	Not as routine: If uncertain ring to consult
Last days – hours of life In extremis - severe dyspnoea Goal is relief of suffering without major sedation	Remain calm, present and reassure	Continue above measures Add: Levomepromazine (25mg tablet) Half to one tablet crushed (12.5mg – 25mg) SL q2-4h PRN	Strongly recommended to ring to consult

Abbreviations: ICU = Intensive Care Unit, PRN = Pro Re Nata/as needed, SC= Subcutaneous, IV = Intravenous, CSCI = Continuous Subcutaneous Infusion, CIVI = Continuous Intravenous Infusion, PO = Per os/oral, SL = Sublingual, BD = Bis in die/twice a day

Opioids

- Where symptoms are mild/moderate and time allows, use PRN Q1H dosing to establish dose required
- Where resources are limited and PRN dosing is not practical, commence regular dosing
- Regular dosing may be achieved by:
    1. PO 'By the clock': IR morphine (sevredol tablets or elixir) q4h (6 doses/24 hours)
    2. SC 'By the clock': morphine q4h (6 doses/24 hours)
    3. Continuous subcutaneous infusion (CSCI) 24-hour infusion. Options for this include:
        - Niki T34 syringe pump (recommended if available)
        - Any syringe pump that takes a 50ml syringe - make syringe up to 24mls and deliver @ 1mL/hr, **OR** 48mLs and deliver @ 2mLs/hr
    4. PO long-acting morphine: M-Eslon SR or Morphine LA Q12H (Note: only suitable where symptoms are stable, may take 48 hours to reach steady state)
- Where regular dosing is used, prescribe PRN Q1H rescue dosing at 1/6th of the total 24hr dose

- Administration routes:
    - The oral route is recommended if able to swallow. Onset of action: 20-30 minutes
    - Subcutaneous administration if unable to swallow or absorb medications. Onset of action: 15 - 20 minutes. Sublingual administration may be used if subcutaneous is unavailable (see separate Sublingual Medications guidance)
    - Intravenous administration when in extremis. Onset of action: 5 - 10 minutes

- In those with eGFR <30 ml/min/m^2:
    - Use fentanyl, which is not renally excreted, first line
    - Fentanyl PRN starting doses: 12.5 - 25mcg q1h SC or SL (12.5mcg if elderly)
    - Fentanyl CSCI/24hr starting dose: 100 – 300 mcg
    - If already using fentanyl patches prior to becoming unwell, continue at the same dose.
    - Do <u>not</u> use fentanyl patches for acute dyspnoea as unable to be rapidly titrated
        - If fentanyl not available, alternatives are methadone, or prn morphine with a longer dosing interval (q4-6h). Seek palliative care advice if methadone or morphine being considered.
- Chart laxatives for all those on opioids: e.g. Laxsol 1-2 tabs bd

Palliative sedation

- Palliative care advice is strongly recommended if sedation is being considered
- Defined as 'the monitored use of medications intended to induce a state of decreased or absent awareness (unconsciousness) in order to relieve the burden of otherwise intractable suffering in a manner that is ethically acceptable to the patient, family and health-care, providers'[9]. The intent of palliative sedation is relief of suffering, and not to hasten death.
- Doses should be proportional to suffering and titrated up or down as necessary. There should be regular review, not less than every 24 hours.
- Usually requires continuous administration of medication (via CSCI or CIVI)
- Benzodiazepines such as midazolam are the backbone of sedation therapy, usually with levomepromazine as an adjunct
- Opioids are not used for sedation. They are usually continued if being used for pain/breathlessness.

Non-pharmacological management of breathlessness

The following techniques are best used early, when breathlessness is less severe;

- Breathing techniques to ease breathlessness
  - 'Smell the roses, blow out the candles'
  - Focus on slow breathing from the tummy – rise the tummy with the in-breath
  - Focus on long relaxed breaths out
  - Pursed lip breathing for those with COPD

- Positioning
  - Sit upright, legs uncrossed, let shoulders droop, keep head up; lean forward
  - See illustration

- Distraction
  - Turn on the radio, or some music
  - Turn on the TV
  - Chat about hobbies or interests if able to talk
  - Phone a family member

- Relaxation
  - Focus on relaxing each individual muscle. Ask the person to close their eyes, or choose a spot in front of them to focus on
  - Visualise a relaxing scene or colour

- Reduce room temperature if possible, cool the face using a flannel or a cloth

- Anxiety reduction
  - Actively explore and address and fears or concerns
  - Fear of suffocation or choking is commonly described, but in practice almost never seen. Provide reassurance

- Fans. The use of fans is currently not recommended.

Hospital Palliative Care New Zealand (HPCNZ)

Living Every Moment hospice New Zealand

ANZSPM

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Document facilitator: Team Leader Pain Management Service

Senior document owner: Clinical Leader Pain Management Service

Document number: 1.105041 **Issue Date** 6 April 2021 **Review Date** 6 April 2024

Level Organisation Wide

Type: Guideline

Name: Long term harms of opioids Staff Information

Purpose
To update staff knowledge of the long term harm of opioid use.

Scope
Includes: All CCDHB staff that are involved in the prescribing or administration of opioid medications for chronic non-cancer-related pain.

Long term harms of opioids
Opioids are substances that act on opioid receptors in the body in the brain and spinal cord, to produce morphine like effects. They can either be naturally occurring morphine derivatives or synthetic in origin. Morphine is a naturally occurring opioid and oxycodone and fentanyl are synthetic. Their principal medical use is for the short-term relief of moderate to severe pain, but they also cause other effects in the body. The body manufactures its own opioid substances and receptors and these are involved in controlling and modulating many body functions. It seems that endogenous (produced by the body) opioids act to fine tune these pathways and swamping the receptors with exogenous (from outside the body) opioids, disables them.

Recent medical literature shows that there are significant long term harms in taking opioids for chronic pain. It is accepted that while the benefits (pain relief and improved function and quality of life) can be significant in the short term (days-weeks), that these effects are not carried through to the longer term (weeks-months). In the past, doctors may have encouraged their patients to take opioids for chronic pain relief, but now we know about these harms, this is no longer the case.

So, opioids can still be used effectively for acute pain (eg post-operative) and in a palliative care settings for pain towards the end of life, but not generally for chronic (long-term) pain. The exception to this is the use of intermittent low dose opioid for pain flares in a small proportion of people and for severe pain in the elderly. Low dose morphine is also used for in the management of breathlessness in a palliative care setting.

Harms can occur at low doses of opioids, but the risk of harm increases substantially at doses above an oral morphine equivalent of 120mg/day. Equivalent to:

- 80mg oxycodone
- 900mg codeine
- 600mg tramadol
- 40mg methadone
- 37.5 mcg/hr fentanyl patch
- 60 mcg/hr buprenorphine patch

The current advice is that if pain remains severe despite opioids, then the opioid should be tapered and stopped, even if no other treatment is available. Chronic pain is influenced by a number of factors and not all of these respond to opioids. There are types of chronic pain for which drug treatment is ineffective.

Known long-term harms of opioids:

- Lack of efficacy and tolerance
- Increased all-cause mortality
- Opioid induced hyperalgesia (increased levels of pain)
- Immune effects (reduced ability to fight infection)
- Gastro-intestinal effects including opioid-induced bowel dysfunction, opioid induced constipation and narcotic bowel syndrome
- Depression and anxiety
- Fractures and falls
- Dependence, addiction and substance use disorder.
- Misuse
- Work, car driving and operating heavy machinery

Other adverse effects are of course described, but not discussed here. Many of these occur during short-term therapy too. They include cognitive effects (drowsiness, poor memory and lack of concentration), itching, respiratory depression, cardiovascular "instability" (slow heart rate, drop in blood pressure or increase in blood pressure and risk of arrhythmias - methadone has the highest risk), weight gain, fluid retention, headache, urine retention and myoclonic jerks (involuntary muscle spasms causing limb jerks).

While opioids can have a positive benefit for some people living with long-term pain, they can have serious consequences when they are not providing sufficient benefit, or being taken in a manner that was not intended.

Lack of Efficacy

There is no convincing evidence that opioids are effective in either controlling pain or improving function in the long term.

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Tolerance

This is present when the same amount of drug which was previously effective becomes less effective and a higher dose of drug is required to achieve the same effect. Tolerance is a well described feature of opioid use.

Increased all-cause mortality

A study of over 8500 older adults in the US showed that all-cause mortality was higher for those on opioids, as were a number of other outcomes, including cardiovascular events such as myocardial infarction and heart failure. Another, much larger, study quantified this risk of death for all ages, as 1.64x higher than for matched patients starting either an anticonvulsant or low dose tricyclic anti-depressant drug (both classes of drugs commonly used in chronic pain conditions). More than half of these excess deaths were related to cardiovascular conditions and doses of opioid were of 60mg OME or less.

There were more than 63600 deaths from drug poisoning by overdoses of opioid drugs in America in 2016.

Opioid induced hyperalgesia (OIH)

OIH is a state of abnormal enhanced pain sensitivity and was first described 140 years ago (Rossbach) in 1880:

"When dependence on opioids finally becomes an illness of itself, opposite effects like restlessness, sleep disturbance, hyperaesthesia, neuralgia and irritability become manifest"

Symptoms of pain are a universal feature of opioid withdrawal "aching related to the bones, joints and muscles is probably the most common symptom of withdrawal" Himmelsbach 1940.

The symptoms of OIH have many similarities to those of neuropathic pain conditions. OIH usually occurs in conjunction to tolerance to opioid doses ie the same dose of an opioid is no longer effective.

Human studies of both long term opioids (methadone) and short-term infusions (remifentil) clearly demonstrate OIH.

The mechanism of OIH is complex and encompasses changes in multiple pain processing channels:

- Nerve endings become more sensitive
- The manufacture of chemicals that transmit pain signals is increased and their removal from pain pathways is reduced
- Nerve cells in some parts of the brain become more active to facilitate pain transmission.
- Additional pain pathways are activated.

Immune effects

All opioids (notably morphine and fentanyl and less so for buprenorphine) have been shown to have an immunomodulatory effect, mediated by opioid receptors, on both immune cells and in the central nervous system. Animal and test-tube work demonstrates effects on particular components of the immune response and an increased susceptibility to certain pathogens. There are also differences in response to antibiotics and cancer cell growth. Different drugs seem to have different effects. There is a known association in frequency and severity of infections in high risk hospitalised patients, post-surgery with cancer or burns, who are on opioids.

What this means for chronic pain patients in the community has previously not been clear, although a recent observational study has shown a significant link between the incidence of serious infections and use of long-acting opioids, high opioid doses and opioids known to be immunosuppressive. The two study groups comprised one with rheumatoid arthritis and an older adult group with private health care – both with matched controls. Specifically patients on opioids had a 40% increased chance of being hospitalised with an infection and hospitalised patients (with infections) were 40% more likely to be using opioids in the community.

Endocrine Effects

Long term opioid use alters the way that hormone is released from an area in the brain (hypothalamus), which then affects further hormone release downstream in another bit of the brain (pituitary) and ultimately affects hormone production in the sex organs (hypothalamic-pituitary-gonadal axis) and adrenal glands (hypothalamic-pituitary-adrenal axis). Principally this can result in reduced sex hormones (testosterone in men and LH/FSH and oestradiol in women) and dehydroepiandrosterone from the adrenal glands. Dehydroepiandrosterone is an important steroid regulatory molecule. The magnitude of the effects is thought to be dose related.

Symptoms include reduced libido and infertility, amenorrhoea in woman and erectile dysfunction in men, as well as depression and fatigue.

Gastro-intestinal effects

The workings of the digestive system are not just regulated by input from the central nervous system, but also by its own huge neurological network “the enteric nervous system”. This is a separate local network of chemicals and receptors. Opioids have effects on both. Local effects include the inhibition of gastric emptying, increases in sphincter tone, changes in motor patterns in the gut wall and blockage of peristalsis, reduced secretions into the gut and increased absorption from it. Opioid induced constipation is the most common consequence, but other symptoms include, nausea, vomiting, decreased gastric emptying (sometimes leading to reflux and heartburn), abdominal cramping, spasm and bloating.

Narcotic bowel syndrome is characterised by worsening abdominal pain in the face of ongoing or escalating opioid use. Opioids reduce the pain for a short period of time, but

inevitably it returns, leading to repeated or increased opioid use. It is thought to be caused by both central and local effects of chronic opioid use. Symptoms include abdominal pain, intermittent vomiting, weight loss and ileus-like symptoms.

Depression and anxiety

There is an association between long-term opioid use and new onset depression, which is independent of the presence of chronic pain. The mechanism for this may be related to changes in both structural and functional neuroanatomy in areas of the brain involved with mood regulation, impulse control, reward and motivation – the limbic system. Interestingly, some of the structural changes (reduced grey matter in the amygdala) have been shown to persist for at least 5 months after stopping opioids. Opioids modulate several brain neurotransmitter circuits related to mood and anxiety and mediated by serotonin and dopamine.

Hormone effects are discussed above. Opioids also alter the anatomy and function of the hippocampus – part of the limbic system in the brain responsible for memory and regulating emotional responses. The hippocampus has a role in moderating the HPA axis and affecting steroid hormone release and the response of the body to stress, again associated with anxiety and depression.

Fractures and falls

The hormonal effects of opioids are associated with osteoporosis. The relative risks of falling whilst on opioids is higher than not taking the drugs, as is the relative risk of any fracture.

Dependence / Addiction / Opioid Use Disorder (OUD)

Opioid use disorder is characterised by the physical symptoms of tolerance and dependence, but also by psychological factors which drive use beyond when any useful indication for the drug has long since passed. There is associated difficulty in reducing opioid use and withdrawal symptoms on discontinuation.

Sometimes the diagnosis is not obvious until the person has weaned off opioids.
Patients who have become dependent on opioids should be referred to and managed by, a specialist service gazetted by the MoH.

Symptoms of withdrawal include sweating, nausea, stomach upset, cramps, diarrhoea, agitation, irritation, anxiety and a temporary increase in pain. If opioid drugs are stopped altogether, these symptoms will resolve.

Legal obligations of prescribers

Section 24 of the 1975 Misuse of Drugs Act states that it is an offence for health practitioners to prescribe, administer or supply controlled drugs in certain cases:

"(1) A health practitioner commits an offence if, in the course of, or for the purpose of, treating a person for drug dependency, the health practitioner –

(a) Prescribes, administers, or supplies a controlled drug for or to the person; and

(b) Does so although having reason to believe that the person is dependent on that or any other controlled drug.

Misuse

Misuse is when a drug is used for a purpose for which it was not intended. For opioid drugs:

1. Management of stress or anxiety or trauma.
2. Mood enhancement
3. Diversion. Harms of long term opioid use can include the wider community if the drug is diverted and prescribers are advised to prescribe only within a comprehensive treatment plan framework, rather than for convenience or based on patient demand.

Work, car driving and operating heavy machinery

Some of the central effects of opioids (sleepiness, impaired reactions, lack of ability to process information, euphoria, impaired coordination, dizziness and blurred vision) make complex mental and physical tasks more difficult and potentially unsafe.

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https://www.mcnz.org.nz/assets/standards/ceae513c85/Statement-on-good-prescribing-practice.pdf

Document facilitator: Clinical Nurse Specialist **Senior document owner:** Clinical Leader Child Health

Document number 1.105855 **Issue Date** 20 June 2022 **Review by Date** 20 June 2025

Level: Child Health Service Document

Type: Guideline

Name: Codeine and Tramadol for analgesia in CCDHB Child Health

Purpose
To ensure the safe prescribing of high risk analgesia in the CCDHB Child Health Service

Scope
All prescribing, nursing and pharmacy staff

Background:

Tramadol and codeine are weak opioids available only on prescription in New Zealand. Both have unpredictable metabolism due to patient genetic polymorphism in the CYP2D6 enzyme, and therefore unpredictable exposure to the active compounds. Individuals may be classed as poor, normal, or ultra-rapid metabolisers. Poor metabolisers are unable to convert the drugs well and receive little, if any, analgesic benefit. Ultra-rapid metabolisers convert both drugs to more active forms very efficiently, leading to risk of toxicity, including respiratory depression and death. In one study, Oceania had the highest prevalence of ultra-rapid metabolisers.

There have been several alerts in recent years from the FDA and Medsafe restricting the use of codeine and tramadol in children. This includes cases where death has occurred from respiratory depression, contributed to by the use of these agents and patient specific factors, such as a history of obstructive sleep apnoea (OSA) or in the post-operative phase of Ear, Nose and Throat surgery (e.g. tonsillectomy).

Both codeine and tramadol are now contraindicated for use in patients under the age of 12yrs, and for patients under the age of 18yrs for post-operative pain management following tonsillectomy and/or adenoidectomy.

However, there are situations where these medicines remain the best option for analgesia in paediatrics. This is a clinical decision which remains at the discretion of the prescriber, once the risks and benefits have been considered. The Society of Paediatric Anaesthesia in

New Zealand and Australia (SPANZA) have continued to endorse the use of Tramadol where clinically appropriate, with limited doses in certain situations.

Dosing recommendations:

Codeine

- **< 12 years old:** Not recommended, consider alternative analgesia
- **12 – 18 years old, either history of OSA or post-op ENT surgery:** Not recommended, consider alternative analgesia
- **12 – 18 years old, no history of OSA and NOT post-op ENT surgery:** 0.5 – 1 mg/kg (max 60 mg) every SIX hours. Maximum of 240 mg in 24 hours, maximum of 3 days duration.

NB: Codeine is not kept as stock on any of the paediatric wards as it is not considered a first line treatment. Tablets are available as 15 mg (available from MAPU) or 30 mg (available from MAPU or ICU). There is no oral liquid or IV preparation.

Tramadol, history of OSA or post-op ENT surgery (tonsillectomy/adenoidectomy)

- **< 1 year:** not recommended
- **1 – 18 years, oral/I**V: 0.5 mg/kg (max 50 mg) every 8 hours (max 150 mg/day).

Ensure continuous oximetry monitoring in place when asleep

Tramadol, all other situations

- **< 1 year:** not recommended
- **1 – 12 years, oral/IV:** 1 – 2 mg/kg (max 100 mg) every 4 – 6 hours. Maximum of 8 mg/kg/day or 400 mg, whichever is lowest. Start at the lower end of the dose range.
- **12 – 18 years, oral/IV:** 50 – 100 mg every 4 – 6 hours, maximum of 400 mg/day

NB: Tramadol immediate release is available as 50 mg capsules, a 10 mg/mL oral liquid, and 100 mg ampoules. Capsules may be opened and mixed with fluid/soft food for administration.

Prescribing tips:

- As codeine is the prodrug to morphine, consider if a low dose of morphine would be appropriate instead. By charting morphine instead of codeine, you can be more confident that the patient will be getting the dose prescribed.
- Note that a test dose will not always indicate tolerability, and active metabolites may accumulate over several doses
- Tramadol has several interactions with other medicines (including SSRIs) – please check
- Tramadol can lower seizure threshold. Please keep in mind and avoid in neurology/neurosurgery patients and patients with history of seizures
- Note tramadol IV is 1.5x more potent but generally accepted to be written PO/IV

- Constipation is a significant side effect of all opioids. Please chart laxatives as appropriate
- Caution is advised in all patients who may have compromised respiratory function
- Start at the lower end of the dose range, review frequently and titrate dose according to pain and sedation scores
- As with all drugs, consider the effect of obesity on drug calculations by weight.

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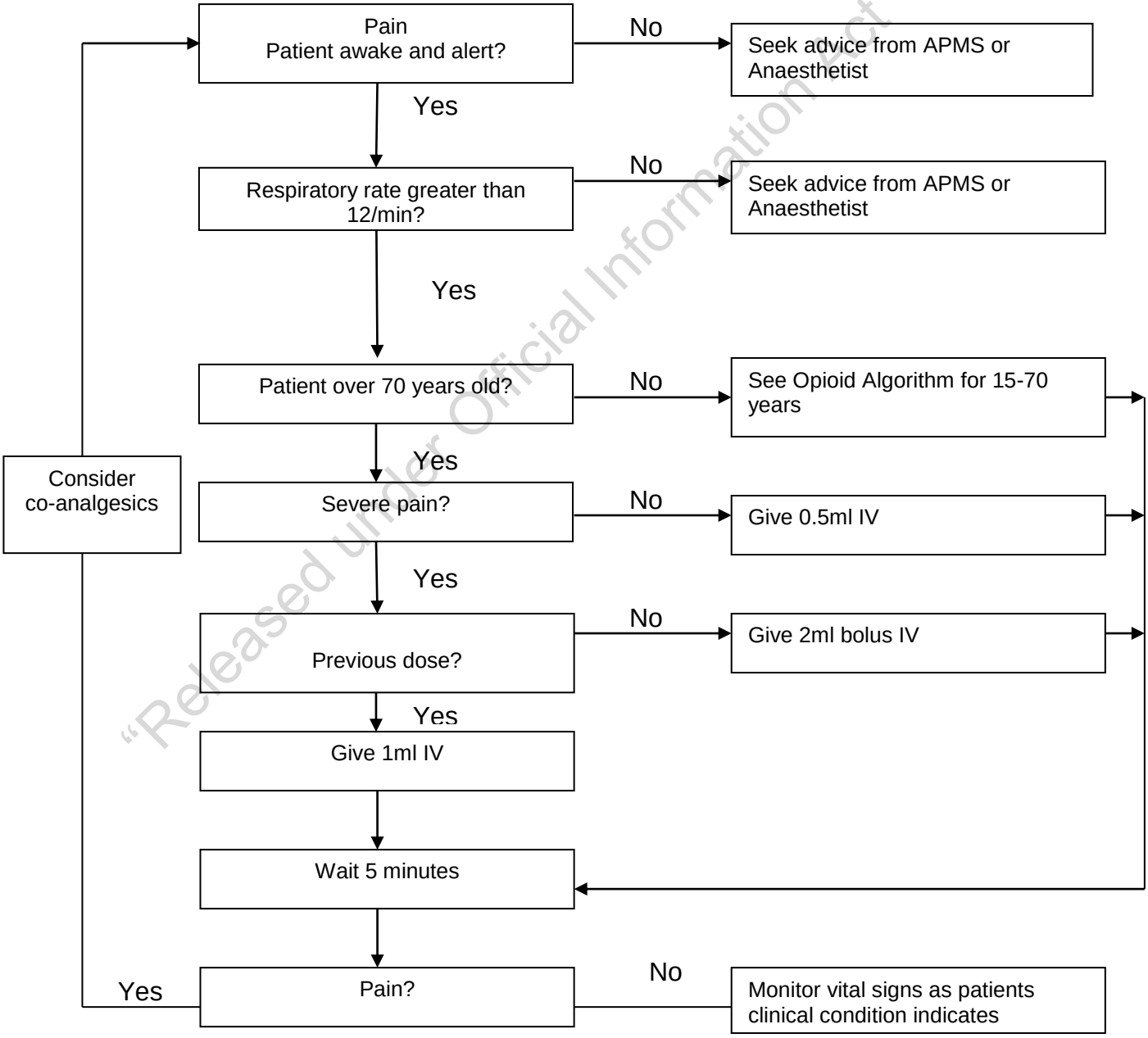
Acute Pain Management Service Intravenous Opioid Administration Guideline Patients > 70 yrs

Te Whatu Ora
Health New Zealand
Capital, Coast and Hutt Valley

Dilution of Medication:
Prescribed medication must be diluted as follows:

- 10mg Morphine diluted with Sodium Chloride 0.9% to 10mls
- 100mcg Fentanyl diluted with Sodium Chloride 0.9% to 10mls

- ONLY to be used by nursing staff who have completed the additional Opioid section in the IV certification process.
- NOTE Peak effect of an intravenous dose may not occur for over 15 minutes, so all patients should be closely observed during this time.



Acute Pain Management Service
Paediatric Intravenous
Opioid Administration Guideline

Te Whatu Ora
Health New Zealand
Capital, Coast and Hutt Valley

- **ONLY** to be used by Registered Nurses who have completed the additional Opioid Section in the IV Certification process; or by a Medical Practitioner.
- **NOTE:** The peak effect of an intravenous opioid dose may not occur for over 15 minutes, so all patients should be closely observed during this time.

Child has moderate / severe pain

Yes

Child under 12 months

- Add 0.2mg/kg of morphine to 0.9% normal saline to make up 10ml solution.
- Recommended bolus size is **1ml** IV.

1ml = 0.02mg/kg (20microgram / kg)

Yes

Child over 12 months, & under 50kg

- Add 0.2mg/kg of morphine to 0.9% normal saline to make up 10ml solution.
- Recommended bolus size is **2ml** IV.

2ml = 0.04mg/kg (40microgram / kg)

Yes

Child weighs over 50kg

- Add 10mg of morphine to 0.9% normal saline to make up 10ml solution.
- Recommended bolus size is **2ml** IV.

2ml = 2mg

Child awake and alert?

No → **Seek advice from APMS or Anaesthetist**

Yes

Respiration Rate

> 30 for a neonate

> 20 for an infant

> 15 for a child > 1 year

No → **Seek advice from APMS or Anaesthetist**

Yes

Sedation Score

No → **Seek advice from APMS or Anaesthetist**

Yes

Child under 12 months
Administer **1ml** IV from the syringe.

1ml = 0.02mg/kg

Child over 12 months, & under 50kg
Administer **2ml** IV from the syringe.

2ml = 0.04mg/kg

Child weighs over 50kg
Administer **2ml** IV from the syringe.

2ml = 2mg

Wait 5 minutes

Child has moderate / severe pain

Yes

Have 5 cycles of this flow chart been administered in 25 minutes?

No → **Child awake and alert?**

Yes

Seek advice from APMS or Anaesthetist

Acute Pain Management Service Intravenous Opioid Administration Guideline Patients 15 - 70 yrs

Te Whatu Ora
Health New Zealand
Capital, Coast and Hutt Valley

Dilution of Medication:
Prescribed medication must be diluted as follows:

- 10mg Morphine diluted with Sodium Chloride 0.9% to 10mls
- 100mcg Fentanyl diluted with Sodium Chloride 0.9% to 10mls

- ONLY to be used by nursing staff who have completed the additional Opioid section in the IV certification process.
- NOTE Peak effect of an intravenous dose may not occur for over 15 minutes, so all patients should be closely observed during this time.