Opioid Analgesia for Women in Labour

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• Organisation(s)	Auckland District Health Board
• Directorate(s)	Women's Health
• Department(s)	Maternity, Anaesthesia, Newborn Services
• Used for which patients?	All maternity women, newborn infants
• Used by which staff?	All Auckland DHB clinicians in maternity including access holder lead maternity carers
• Excluded	
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1. Purpose of guideline

The purpose of this guideline is to promote safe midwifery prescribing of opioids for intrapartum pain relief.

Note: Use of Remifentanil in labour is covered in a separate Auckland District Health Board (Auckland DHB) guideline *Remifentanil Patient Controlled Analgesia (PCA) for a Woman in Labour.*

2. Guideline management principles and goals

Opioids may be a pain relief option in situations where non-pharmacological methods or Entonox™ have been ineffective, and rapid-onset analgesia is needed.

Pethidine has traditionally been used in labour, however morphine has fewer side effects and a shorter half-life compared to pethidine and its active metabolite norpethidine. The accumulation of norpethidine in the neonate can lead to adverse effects (including respiratory depression) and can affect newborn behaviour and breastfeeding.

Morphine should be used intrapartum instead of pethidine at Auckland DHB from October 2018.

The Medicines Amendment Act (2013) and Misuse of Drugs Amendment Regulations (2014) changes allow midwives to prescribe the following opioid medications from July 2014:

1. Morphine
2. Pethidine
3. Fentanyl

This guideline is applicable to core midwives and LMCs with access agreements at Auckland DHB who may prescribe opioids for intrapartum use only. See section 3 below for further midwifery recommendations.

Morphine

It is important to ensure:

- Morphine or any opioid is prescribed after a routine assessment of the woman has been completed
- The woman is fully informed and consent is documented in the clinical record
- Morphine or any opioid is prescribed only for those women ≥ 37 weeks' gestation. It must not be prescribed by midwifery staff for women in premature labour due to the increased risk of respiratory depression in the neonate. The obstetric team or on-call anaesthetist should be consulted for those women less than 37 weeks' gestation.
- Morphine is not administered in conjunction with any other opioid
- Entonox™ can be used concurrently with intrapartum morphine use; however, care must be taken to ensure that the woman does not become excessively sedated.

Fentanyl

- Fentanyl is only recommended in specific circumstances where morphine is inappropriate (eg morphine sensitivity). The obstetric team or on-call anaesthetist should be consulted for women requiring opiate analagesia for whom morphine is inappropriate.
- The **prescription of fentanyl by midwives at Auckland DHB is discouraged** as it is less easily titrated when compared to morphine and has a shorter duration of action making it less safe and less useful in this setting.
- The New Zealand Society of Anaesthetists discourages the use of Entonox™ with fentanyl.

Opioids should not be administered if an epidural is going to be sited imminently. Prior opioid administration in labour however does not preclude siting an epidural. Additional care should be taken in this situation since removal of the painful stimulus of labour risks excessive sedation in the woman.

3. Recommendations for midwives for opioid prescribing

Midwives qualifying in New Zealand from 2014 onwards will have had adequate education on opioid prescribing in labour, included in their undergraduate training. For the past few years, the Midwifery Council has supplied (and promoted) a self-directed learning package to supplement the pharmacology teaching that was included on the Midwifery Practice Day (compulsory education 2014-2017) for those midwives qualifying prior to 2014. From April 2018 however (subsequent to good uptake of this education), the Midwifery Council decided that it was no longer necessary to offer and administrate this education package, instead allowing Midwifery Educators within DHBs to continue to utilise it as they wished.

Auckland DHB recognises that whilst many midwives will be familiar and confident with prescribing intravenous pethidine, they may require further education to gain competence and confidence with morphine prescribing. Auckland DHB therefore strongly recommends that both core midwives and independent LMC access holders wishing to prescribe IV morphine in labour should complete the Midwifery Council learning package.

The self-directed learning package is available here.

Once completed, the assessment section should be forwarded to Auckland DHB midwifery educators, who will mark the paper, provide a certificate and maintain a local database of completion. Your paper can be submitted to the educators' office on Ward 96, ACH, or scanned and emailed to midwiferyeducation@adhb.govt.nz

The Midwifery Council does still wish to be informed of any midwives completing the package and therefore names will be forwarded.

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4. Opioid analgesia – comparison table

Opioid	Usual dose	Onset (min)	Peak effect (min)	Elimination half-life (hr) including metabolites		Adverse effects	
				Maternal	Neonatal	Maternal	Neonatal
Pethidine	IV 12.5 - 25 mg IM 50 - 100 mg	5 10	10 45	–21	63	• Sedation • Reduced level of consciousness • Apnoea • Respiratory depression • Allergy	• Altered neonatal behaviour • More depression in breastfeeding newborns compared to morphine • Respiratory depression
Morphine	IV - See flowchart IM 10 mg	5	20	2 - 4	13.9		• Neonatal respiratory depression
Fentanyl	IV - See flowchart	1	5	3 - 4	1 - 7		• Neonatal respiratory depression

5. Precautions

Consultation with a specialist is recommended if:

- Body mass index > 40
- History of obstructive sleep apnoea
- Drug and alcohol addiction
- Significant cardiorespiratory, renal or liver disease
- Premature labour (due to increased risk of neonatal respiratory depression)
- Fetal heart rate abnormalities - consult with Obstetrician prior to administration

6. Contraindications

- Previous opioid allergy/anaphylaxis.

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7. Prescription

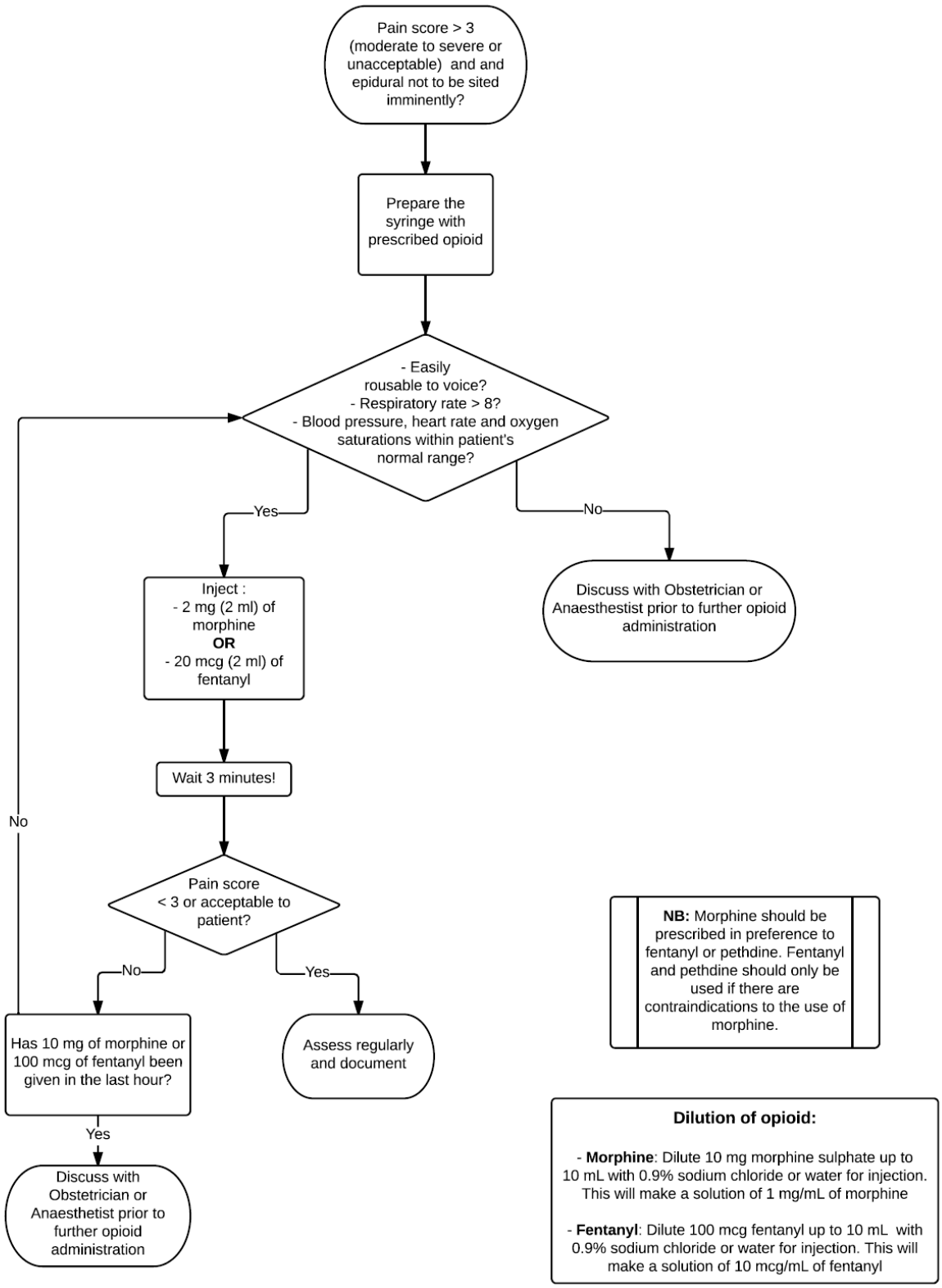
- Opioid should be prescribed on the National Medication Chart.
- Prescription should be in accordance with Auckland DHB policy for the prescription and administration of controlled drugs (see '*Medications - Prescribing'* policy, and '*Medications - Administration'* policy).
- Documentation of the administration must also be in accordance with Auckland DHB policy - include any maternal use in labour on the neonate's clinical record

8. Dilution of opioid

- **Morphine**: Dilute 10 mg morphine sulphate up to 10 mL with sodium chloride 0.9% or water for injection - this will make a solution of morphine 1 mg/mL
- **Fentanyl**: Dilute 100 microgram of fentanyl up to 10 mL with sodium chloride 0.9% or water for injection - this will make a solution of fentanyl 10 microgram/mL

9. Flowchart: Intrapartum Intravenous Opioid Protocol

ADHB Intrapartum Intravenous Opioid Protocol
Flow Diagram



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10. Monitoring of mother

- Monitor maternal and fetal wellbeing prior to and after administration of opioid
- At Auckland DHB midwives should consult with a specialist (obstetrician and/or anaesthetist) if a woman is in significant pain or requiring more than 10 mg of morphine or 100 micrograms of fentanyl in a one hour period
- The following observations should be recorded on the CR5825: Maternity Vital Signs Chart (see clinical form):
  - Respiratory rate
  - Oxygen saturations
  - Blood pressure
  - Heart rate
  - Level of consciousness
- Observations should initially be recorded at 5-minute intervals for the first 20 minutes after a dose of opioid. If the initial observations are satisfactory, then they may be continued at 30-minute intervals. If no further doses of opioids are given over the following two hours, standard monitoring intervals can be resumed.
- If there are any concerns regarding side effects or patient observations, a medical review should be sought, particularly if the woman appears overly sedated or difficult to rouse.
- Use of opioid analgesia does not in itself necessitate continuous cardiotocograph (CTG) monitoring in the absence of other risk factors, as per the Auckland DHB fetal surveillance policy.
- Fetal wellbeing must be ascertained prior to and after administration of opioid analgesia to the woman.
- It should be noted that the use of opioids may cause a transient reduction in fetal heart rate variability on the CTG.

11. Management of respiratory depression/reduced level of consciousness

If concerned about woman's observations:

- Call for an urgent medical review
- Rouse the woman and ask her to take deep breaths, administer oxygen at a rate of 15L/min via non-re-breather mask
- If the woman is sleepy but rousable, respiratory rate is less than 8 or oxygen saturations are 90 - 94% consider a small dose of naloxone eg 80 micrograms IV. Dilute 400 micrograms naloxone up to 10 mL with sodium chloride 0.9% - this will make a solution of naloxone 40 micrograms/mL.
- If the woman is hypotensive or has a bradycardia, then she should be placed into full left lateral position and consider administering a fluid bolus
- If the woman is unrousable call an Obstetric Code and an Adult Code Blue

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12. Management of a neonate of a mother given intrapartum opioid

For the management of narcotic depression in the newborn, please refer to the Newborn Services Clinical Guideline

13. Supporting evidence

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- Goodson, C., & Martis, R. (2014). Pethidine: to prescribe or not to prescribe? A discussion surrounding the use of pethidine's place in midwifery practice and New Zealand prescribing legislation. *New Zealand College of Midwives Journal*, 49, 21-5.
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- Medsafe Data Sheet, Fentanyl Citrate Injection. Preparation date 08/01/2015. Accessed via http://medsafe.govt.nz/
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- Phelps, S. J., Hagemann, T. M., Lee, K. R., & Thompson, A. J. (2013). Pediatric Injectable Drugs, The Teddy Bear Book. 10th Ed. Bethesda: American Society of Health-System Pharmacists.
- Sastry, B. R. (1996). *Placental pharmacology* (Vol. 36). CRC Press. Retrieved from, https://books.google.co.nz/books?id=orsn0dI0VJ4C&pg=PA81&lpg=PA81&dq=Meperidine+pre

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- Self-directed learning package for midwives on the prescription of controlled drugs, Midwifery Council of New Zealand. Retrieved from http://nationalwomenshealth.adhb.govt.nz/Portals/0/Maternity/Beatle/Prescribing%20of%20controlled%20drugs%20learning%20package%20November%202017_.pdf
- Midwifery Council. Email communications received December 21,2017. Self directed learning package for midwives on the prescription of controlled drugs.

14. Legislation

- Medicines Amendments Act 2013
- Misuse of Drugs Amendment Regulations 2014

15. Associated documents

- Entonox®/Nitrous Oxide in Maternity
- Epidural Analgesia - Adult
- Fetal Surveillance Policy
- Medication - Administration
- Medication - Prescribing
- Narcotic Depression in the Newborn Infant
- Opioids Intravenous in Adults
- Remifentanil Patient Controlled Analgesia (PCA) for a Woman in Labour

15.1 Clinical Form:

- CR5825: Maternity Vital Signs Chart

16. Disclaimer

No guideline can cover all variations required for specific circumstances. It is the responsibility of the health care practitioners using this Auckland DHB guideline to adapt it for safe use within their own institution, recognise the need for specialist help, and call for it without delay, when an individual patient falls outside of the boundaries of this guideline.

17. Corrections and amendments

The next scheduled review of this document is as per the document classification table (page 1). However, if the reader notices any errors or believes that the document should be reviewed ***before*** the scheduled date, they should contact the owner or Document Control without delay.

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