Self-directed learning package for midwives on the prescription of controlled drugs

November 2017

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Background

This package has been designed to assist you in your learning and to provide some context around the prescription of controlled drugs. Its purpose is to supplement knowledge for midwives who

a) wish to update their education and/or prescribing practice in relation to use of an alternative controlled drug
b) are required to complete this as part of the overseas competence programme

Section 118 (e) of the HPCA Act (2003)

"The role of the Council is to recognise, accredit and set programmes to ensure the ongoing competence of health professionals"

Midwives and prescribing

Midwives as authorised prescribers are legally able to prescribe for women (and their babies) within the midwifery scope of practice. Changes to the Misuse of Drugs Act and the Misuse of Drugs Amendment Regulations (2014) enable those midwives who have completed the required education to now prescribe a limited number of opioids. This is an extension to the controlled drug prescribing rights.
www.legislation.govt.nz/regulation/public/2014/0199/latest/DLM6156029.html?search=qs_regulation%40deemedreg_Misuse+of+drugs+act_resel_25_h&p=1b

The Midwifery Council has stated that prescribing of Pethidine, Morphine or Fentanyl is for intra-partum use only.

The content of this learning package is directed toward the additional opioids named in the legislation – Morphine and Fentanyl. There is extensive information available regarding the management of pain intrapartum and midwives are skilled in this area. Midwives bring this understanding as background knowledge and context when learning about the additional named opioids.

Recertification Programme

This package has been approved by the Midwifery Council. Midwives who complete the learning package and who pass the test are entitled to 4 hours of continuing midwifery education within the Recertification Programme**.**

Learning Package explained

In this Learning Package there are:

1. A series of self-directed learning activities (highlighted in this document). You will be assisted with resources to help you extend your knowledge and reflect on the effects of opioid analgesia.

2. A short written test – answers need to be submitted to the Midwifery Council upon completion.

It is expected that this package will take between three – four hours to complete on average.

Guidance re completion of Learning Package

Work your way through this learning package at your own pace. Completion of all aspects is recommended acknowledging that the learning needs to be relevant and responsive to practice within your current clinical environment. The prescription of controlled drugs should adhere to local District Health Board guidelines, protocols and policies.

Issues for your particular reflection or consideration are in the orange tables throughout the document.

Learning Outcomes

At the end of this learning package, it is expected that the midwife is able to:

- demonstrate awareness of the legislation and Midwifery Council Scope of Practice statement with regard to the prescription of opioids
- consider the context of the woman/fetus in relation to use of an opioid and the effects
- demonstrates understanding of pharmacokinetics and differences between Pethidine, Morphine and Fentanyl
- demonstrate understanding of the main side effects of an opioid and management of situations including: maternal respiratory depression, maternal nausea and vomiting, potential fetal acidosis and neonate respiratory depression, poor infant feeding
- apply knowledge of Morphine and Fentanyl regarding dose/strength, frequency route of administration, contraindications and side effects
- demonstrate understanding of the assessment required of woman/fetus prior to administration of an opioid and post administration
- demonstrate knowledge of situations where consultation/referral is warranted

- reflect on the need for documentation to be contemporaneous and complete

Content

- Midwives decision making regarding use of an opioid in a specific context
- Pharmacology re Pethidine, Morphine, Fentanyl – similarities and differences in order that midwives are able to articulate their decision-making re prescribing
- Knowledge re strength of each opioid, route administered, frequency of administration
- Safe use of an appropriate anti-emetic
- Monitoring of woman/fetus prior to prescription and after administration of an opioid
- Awareness of potential for fetal acidosis after opioid administration
- Judicious use of opioids and critical thinking before exceeding one adult dose of an opioid
- Consideration for complications when midwifery prescribing would not be appropriate (e.g. obstructed labour) and timely referral/transfer when indicated
- Awareness of transfer of opioid to neonate and preparedness for resuscitation, possibly slower to breastfeed and implications of this on neonate wellbeing
- Documentation and informed consent

Decision making within Legislation, Council scope of practice and NZCOM guidance

Review the NZCOM consensus statement regarding prescribing by midwives www.midwife.org.nz/quality-practice/nzcom-consensus-statement

The NZCOM Consensus Statement 'Prescribing' (retrieved July 2014) states:

> *The College strongly discourages the use of analgesics or sedatives during labour at home. The necessity for these types of medications is an indication to transfer to hospital. If women are birthing at home the inappropriateness of such medications should be discussed. If narcotics are prescribed for use in labour, the midwife must know and discuss with the woman the actions and possible side effects of the medication. The midwife must have the equipment and skills necessary to cope with the effects of this medication.*

Reflect On:
• the rationale as to why an opioid is 'discouraged' during labour at home
• the context of a primary maternity unit (if available within your region). Consider the factors that ensure safety of the woman and baby in situations where an opioid is administered

Review the NZ Midwifery Council's statement on the scope of practice and the prescription of controlled drugs. https://www.midwiferycouncil.health.nz/sites/default/files/for-midwives/Opiates%20scope%20of%20practice%20with%20guidance%20notes%20290714.pdf

Midwives must prescribe within the legal parameter of the Midwifery Council scope of practice (Medicines Amendment Act 2013). To ensure safe and effective care to women, midwives might need to consult or refer to an obstetric registrar or consultant:

a) when a prescription is outside the midwife's scope OR
b) when there are concerns about the safety of either the woman or baby.

Consider:
• the situations when a consultation could be beneficial

The Midwifery Council statement on the scope of practice restricts the prescribing of Fentanyl to secondary/tertiary settings only. See Midwifery Council website for link to NZSA document.

List:
• the potential side-effects of fentanyl for the woman (intrapartum) and baby, using the NZSA (NZ Society of Anaesthetists) submission document and Medsafe data sheet

Pharmacology of selected controlled drugs

There are a number of readily available resources online that midwives can access to find information on these opioids, some such resources include:

www.frca.co.uk/article.aspx?articleid=100946 Pharmacokinetics of Opioid agonists. This resource provides useful information re plasma protein binding, clearance, variability of opioids and complexity re duration of action.

> **"***Opioids differ substantially in their durations of action. Explanations for these differences are complex and not always evident from their clearance and terminal half-lives. For example, an analgesic dose of morphine lasts longer than a dose of fentanyl producing an equivalent degree of analgesia; yet the half-life for morphine is shorter than fentanyl. In the case of morphine, its relatively long duration of action is a reflection of its relatively low lipid solubility and slow diffusion out of CNS tissue. Once it enters blood it is effectively cleared from plasma"*.

http://nzformulary.org/ Note that the Pethidine monograph refers to obstetric analgesia with a high dose of Pethidine. Reference is made to opioid-induced respiratory depression. Within NZ midwifery context, the Midwifery Council of NZ recommends *midwives consider* consultation occurs after one adult dose in view of side-effects.

Strength of Opioids; Receptors; administration

Use references and watch the following you tube clip that explains the types of receptors and the action of each opioid upon the receptor site.
www.youtube.com/watch?annotation_id=annotation_649087&feature=iv&src_vid=YCz5A8ZkavM&v=LT80LeQNO10

Review:

- the effects of morphine and fentanyl and how naloxone acts on each of the receptor sites according to 'fit'.

Refer to the NZ Formulary and resources to review the actions and interactions of the controlled drugs pethidine, morphine and fentanyl.

List:

- the most relevant actions and interactions that will assist you in your learning and recall

Search:

- an opioid by typing its name in the search box in NZF. Click on 'Interactions' which show Stockley's alerts and BNF (British National Formulary) list of drugs that interact with each opioid (eg. Phenytoin and Pethidine).

This information is useful for midwives who practise in settings where women are taking other medication/s for underlying medical conditions and/or pregnancy related conditions. *In situations where the woman is considered 'high-risk', the obstetric team should prescribe analgesia; however the midwife needs to be aware of potential side-effects.*

Review:

- the following table adapted from Anderson (2011) which provides some information about these controlled drugs. Compare and contrast to your own DHB guidelines and stated strengths of pethidine, morphine and fentanyl.

Dosage Guide	Half-life	Effects
Pethidine		
IM: 100 milligram **IV: 12.5-25 milligram increment doses**	**Pethidine** • Maternal 3-7 hours • Neonate 18–23 hours **Metabolites** • Adults -21 hours • Neonate - 63 hours – Metabolite-related adverse-affects cannot be reversed by naloxone for neonate	• Metabolites accumulate in maternal plasma and affect newborn behaviour and breastfeeding Significantly more depression in breastfeeding newborns on 3rd and 4th days of life when compared with behaviour of neonates in the morphine cohort (cited Anderson, 2011) doi:10.1111/j.1542-2011.20110061.x • Respiratory changes • May temporarily decrease fetal heart rate variability intrapartum • Neonate respiratory risk minimised if Pethidine is administered > 4-5 hours before the birth
Morphine		
IM: 10 milligram **IV: 2 milligram** **IV: onset 5mins** **Peak effect: 20mins** **Duration:** **IV: 1-3hrs** **IM: 3-5 hours**	**Morphine** • Maternal 43 minutes • Neonate – 6.5 hours **Metabolites** • Adults 2 – 4 hours • Neonate – 13.9 hours	• Caution required with pre-existing asthma or impaired ventilation. • Possible preference to Pethidine with shorter half-life and more rapid plasma clearance in pregnant women (cited Anderson, 2011) doi:10.1111/j.1542-2011.20110061.x.. • Respiratory changes • Possible decreased fetal heart rate variability intrapartum
Fentanyl		
50-100 microgram **Intermittent IV bolus doses according to DHB guideline** **Onset: 1 minute** **Peak: 5 minutes.**	**Fentanyl** • Adults 3- 4 hours • Neonates – 1 – 7 hours **Metabolites** • No active metabolites	• Only administer in an appropriately equipped secondary or tertiary hospital. • NZSA recommends maternal O2 saturation monitoring during administration and for one hour post administration (NZSA, 2014). • With higher doses or prolonged infusion, fentanyl becomes longer acting. Risk of maternal apnoea and respiratory changes. • Transient decreased fetal heart rate variability intrapartum for about 30 minutes only. Risk of apnoea and neonatal respiratory depression

Reference: Anderson, D. (2011). NOTE: Anderson provides a guide ONLY for women WHO DO NOT HAVE ANY complications with a term fetus. Additional information included from NZSA submission (2014)

Safety of Medications

It is important that consideration is given to safety of drugs during pregnancy and lactation.

Review:

- the antiemetic metoclopramide. Consider its strength, dose, indications side effects, and length of action. What is the frequency of administration?

Consider:

- other anti-emetics that might be prescribed within the NZ context and review information on the New Zealand formulary including the safety profile in pregnancy.

Fentanyl

There are some special considerations regarding the use of nitrous oxide and the administration of fentanyl.

Review:

- the NZSA submission **https://www.midwiferycouncil.health.nz/sites/default/files/for-midwives/NZSA%20submission%20on%20proposed%20amendments%20to%20Midwives%20and%20NP%20prescribing%20Apr%202014.pdf**
- and document the recommended precautions

The Midwifery Council recommends that midwives consider consultation with an obstetric registrar or consultant after the administration of the equivalent of one adult dose of an opioid intra-partum in situations where the woman requires further analgesia and/or concern arises re maternal/fetal wellbeing or lack of progress of labour (Fentanyl would be administered according to local DHB guidance).

Consider :

- the rationale for this recommendation in view of effects on woman/baby

Monitoring of the woman/fetus and midwifery assessment

Prescribing an opioid requires midwives to undertake a full assessment of the woman and her baby to ensure that the prescription is appropriate and does not put the woman or her baby at risk of harm.

You might wish to familiarise yourself with the May 2014 RANZCOG Fetal Surveillance guidelines with regard to fetal wellbeing.

http://www.ranzcog.edu.au/college-statements-guidelines.html

Consider:

- your initial assessment to ensure the wellbeing of the woman and her baby before you prescribe and administer an opioid. Reflect on the assessments that you would undertake in most situations after administration of an opioid (including the woman's respiratory rate)

Awareness of potential for fetal acidosis

Consider:

- the effects an opioid has on the fetus and how this might present at this time. What key assessments would you consider to gauge fetal well-being?

Consider:

- what additional preparation you will undertake for the birth of the baby when an opioid has been administered – preparedness of the woman, personnel and physical environment.

Review:

- the places where you would document prescription and administration of an opioid to ensure safe care intrapartum and postpartum.

Consider:

- the ongoing effects of the opioid metabolites in relation to poor muscle tone and less effective feeding. How will you ensure the wellbeing of baby (avoiding potential complications)? You may consider referring to your local safe sleep policy (for woman and baby) and the following website www.health.govt.nz/your-health/healthy-living/babies-and-toddlers/keeping-baby-safe-and-warm-bed

Review:

- the New Zealand Resuscitation Council guideline regarding the use of naloxone.

NZ Resuscitation Council: **https://www.nzrc.org.nz/assets/Guidelines/Neonatal-Resus/ANZCOR-Guideline-13.7-Aug16.pdf**

Judicious use of controlled drugs and critical thinking

Review:

- the half-life of pethidine, morphine and fentanyl and compare with the half-life of naloxone.

Consideration for complications when midwifery prescribing may not be appropriate

Reflect on:

- your decision-making regarding strength and route of administration of an opioid within the context of practice (eg. the maternity setting, local DHB policy, working in partnership with the woman; consent, progress of her labour, parity etc.)

Documentation and informed consent

The HDC code of rights (1996) requires providers of health care to ensure that consumers are able to make an informed decision regarding their care (Right 6) and indicates that risks versus benefits need to be documented as part of the consent process

Consider:

- what you would include in this documentation regarding risk versus benefit of an opioid (reflect on this documentation being reviewed by another experienced midwife)

References

Sample of references that can be accessed from DHB library or online. The Midwifery Council is unable to supply literature in view of copyright rules. This list is not exhaustive.

Book references:

Pharmacology texts

Pairman et al (2010). **Midwifery Preparation for Practice (2nd ed)**. Sydney: Elsevier

Schumacher, Basbaum and Way (2012) Opioid analgesics and antagonists In Bertram G. Katzung, Susan B. Masters, Anthony J. Trevor (Ed's), **Basic and Clinical Pharmacology 12E**. New York: McGraw Hill

Websites

www.frca.co.uk/article.aspx?articleid=100946 Pharmacology of Opioids II. Dr Mahesh Trivedi, Dr Shafee Shaikh, Dr Carl Gwinnutt. AnaesthesiaUK 2007

New Zealand formulary www.nzformulary.org (Please do not use the intrapartum opiate doses cited on NZF as they are too high)

New Zealand Universal List of Medicines www.nzulm.org.nz

TGA Australia: Drug safety during pregnancy and lactation www.tga.gov.au

Canterbury DHB: Drug monographs

Ministry of Health www.health.govt.nz/system/files/documents/publications/observation-mother-baby-immediate-postnatal-period-consensus-statements.pdf

Midwifery Council : NZ Society Anaesthetists submission document

New Zealand Legislation: www.legislation.govt.nz/

Journal articles

Anderson, D. (2011). A review of systemic opioids commonly used for labor pain relief. **Journal of Midwifery & Women's Health; 56**(3):222-39. DOI: 10.1111/j.1542-2011.2011.00061.x

Goodson, C., & Martis, R. (2013). Pethidine to prescribe or not to prescribe? **New Zealand College of Midwives Journal 49**, 23-28.

Reynolds, F. (2011). Labour analgesia and the baby: good news is no news. **International Journal of Obstetric Anesthesia 20,** 38-50. Doi:10.1016/j.ijoa.2010.08.004

Sosa, C., Buekens, P., Hughes, J., Balaguer, E., Sotero, G.,…Alonso, J. (2006). Effect of Pethidine administered druing the first stage of labor on the acid-base status at birth. European Journal of Obstetrics & Gynecology and Reproductive Biology 129, 135-139. Doi:10.1016/j.ejogrb.2005.11.033

Tuckey, J.P.. Prout, R. E., & Wee, M. (2008). Prescribing intramuscular opioids for labour analgesia in consultant-led maternity units: a survey of UK practice. **International journal of Obstetric Anesthesia 17,** 3-8. Doi:10.1016/j.ijoa.2007.05.014

Ullman, R., Smith, L., Burns, E., Mori, R., & Dowswell T. (2010). Parenteral opioids for maternal pain relief in labour. **Cochrane Database Systematic Review**. (9):CD007396. doi: 10.1002/14651858.CD007396.pub2.

Assessment: Please return to Midwifery Council of New Zealand

Your name _____ Registration Number_____

1. State the THREE controlled drugs that midwives can legally prescribe **AND** Indication for use:

   _____

2. Respiratory depression in a significant risk with IV fentanyl which is why it is never to be given in what setting?_____

3. Complete the following table with the required information regarding opioids **REFER TO TABLE IN PACKAGE**

Drug	**State the IV/IM dose**	**What is considered to be the maximum adult dose given by a midwife prior to consultation**	**Important side-effects specific to drug INCLUDE MATERNAL, FETAL and NEONATAL**
Pethidine			
Morphine – INCLUDING IV INCREMENTS			
Fentanyl **IV only**	DO NOT ABBREVIATE THE DOSE UNITS		

4. Entonox is contra-indicated with which particular opiate? (Ref NZSA submission)

   _____

5. A) State the rate of maternal respirations per minute that would give concern re inadequate oxygenation after administration of opioid analgesia. B) Briefly List your immediate midwifery actions include drug name and dose used for adult respiratory depression, if this situation arose in your practice context:

   _____

   _____

6. Briefly list the most important factors specific to

    a. **fetal** assessment AFTER administration of an opioid

    _____

    _____

    b. **neonatal** assessment within the first 12 hours of birth if the mother has been administered an opioid intrapartum : LIST THE OBSERVATIONS YOU WOULD COMPLETE

    _____

Please post or email to education@midwiferycouncil.health.nz

Alternatively if you have been given this package by your DHB educator please return it directly to them for marking.

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