Royal Hospital for Women (RHW)
BUSINESS RULE
COVER SHEET

Health
South Eastern Sydney
Local Health District

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NAME OF DOCUMENT	Patient Controlled Analgesia (PCA) Remifentanil- In Labour
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SUMMARY	Describe the local business rule that explains how something is done in a particular office, site, department or across RHW
Key Words	PCA, Remifentanil, APS, labour

Patient Controlled Analgesia (PCA)Remifentanil- In Labour

RHW CLIN197

Contents

This Clinical Business Rule (CBR) is developed to guide safe clinical practice at the Royal Hospital for Women (RHW). Individual patient circumstances may mean that practice diverges from this Clinical Business Rule. Using this document outside RHW or its reproduction in whole or part, is subject to acknowledgement that it is the property of RHW and is valid and applicable for use at the time of publication. RHW is not responsible for consequences that may develop from the use of this document outside RHW.

Within this document we will use the term woman, this is not to exclude those who give birth and do not identify as female. It is crucial to use the preferred language and terminology as described and guided by each individual person when providing care.

1 BACKGROUND

The aim of this CBR is to provide alternative pain relief in labour where an epidural is contraindicated, unachievable or unsuitable otherwise.

2 RESPONSIBILITIES

2.1 Staff

Role	Responsibilities
Anaesthetists (Authorised Prescribers)	• Decisions relating to the commencement and management of Remifentanil patient-controlled analgesia (PCA) are only to be made by Anaesthetists/Acute Pain Service (APS). • Anaesthetists are the authorised prescribers of Remifentanil PCA in labour in RHW in accordance with this Clinical Business Rule using the NSW Health Patient Controlled Analgesia (PCA) Adult form (SMR130.025)[1]. • Prescribing Anaesthetist is the second checker for the programming and initiation of the Remifentanil PCA. • Manage any complications and adverse effects
Medical Officers	• Manage any complications and adverse effects with appropriate escalation to Anaesthetists/APS.
Birth Unit Midwifery Unit Manager/Team Leader	• Ensure adequate staffing in Birth Unit to facilitate 1:1 midwifery care for the woman with Remifentanil PCA

Registered Midwife (RM)	• Prepare, administer, and discard opioid as outlined in this Clinical Business Rule. • Attend to observations and manage complications and adverse effects of PCA as outlined in this Clinical Business Rule. • Document appropriately and escalate concerns as per guideline and Clinical Emergency Response System (CERS) – Management of the Deteriorating Patient
Acute Pain Service (APS)	• Review woman on Remifentanil PCA • Staff education • Audit PCA Charts for compliance, quality assurance
Pharmacists	• Review woman's medication/quality assurance • Facilitate supply of remifentanil to be used for PCA

2.2 Steps to attain competency assessment (Midwifery):

- Midwives must complete the required education, training, and clinical assessment relevant to the safe management of Remifentanil Patient Controlled Analgesia (PCA) before providing care.
- This includes reviewing the current clinical guideline, participating in appropriate education, and demonstrating proficiency in the use of the designated equipment.
- Completion of these requirements will be recorded in My Health Learning.

Note: Competency in Intravenous PCA is not equivalent to competency in Remifentanil PCA in Labour and hence Registered Nurse (RN) with Intravenous PCA Competency only CANNOT manage Remifentanil PCA in Labour.

3 PROCEDURE

3.1 Precautions

- Ensure woman is an appropriate candidate for remifentanil PCA and contact APS if clarification is needed. Contact details for APS are as follows:

CNC	pager 44937	Monday– Thursday 0800-1630 hours & Friday 0800-1200N
Anaesthetic MO	pager 44084	After Hours

- Ensure 1:1 midwifery care while woman is receiving a remifentanil PCA. A midwife must **ALWAYS** remain in the room whilst a woman is receiving remifentanil PCA.
- Remifentanil PCA should only be managed in Birth Unit.
- BU Team Leader/MUM to advise Access and Demand Manager (ADM) or After-Hours Nurse Manager (AHNM) to ensure adequate staffing levels on Birth Unit.
- Do NOT administer additional opioids or sedatives unless specifically ordered by an anaesthetic MO.
- May administer nitrous oxide (max dose: 50:50) if desired, in addition to PCA, after review by an anaesthetic MO.
- Notify the neonatal team when a remifentanil PCA is administered, so they are prepared for potential side effects if called, noting that routine attendance at delivery is not required.

3.2 Patient Education

- Educate the woman on Remifentanil PCA using the patient information leaflet.
- Ensure the woman is familiar with the principles of PCA and can activate the pump. The woman receiving PCA is the only person who may press the PCA to self- administer doses.
- Educate the woman about the need for Oxygen therapy and continuous CTG monitoring throughout the PCA use.
- For non-English/limited English speakers or women with impaired capacity, it is crucial to ensure that the patient completely understands the PCA concepts to enable safe and effective use as per SESLHDPD/325 -Translated Health Information.
- Educate the woman to notify any adverse effect immediately to the attending midwife.

3.3 PCA Prescription

- Verbal consent to be obtained from the woman by the Anaesthetic Medical Officers.
- Anaesthetists are the authorised prescribers of PCA in RHW.
- Remifentanil PCA must be prescribed on the NSW Health Patient Controlled Analgesia (PCA) Adult form (SMR 130025).
- Ensure naloxone is prescribed by anaesthetic MO on the PCA chart. Indications and administration guidelines are on the PCA chart.
- PCA bolus dose must be prescribed in unit of drug (microgram) and volume e.g., 20mcg = 1mL.
- The minimum and default lockout interval period is 2 minutes.
- Background infusions are not to be prescribed.
- No drugs other than Remifentanil are to be added to the PCA solution.
- There are two further rows provided in PCA program for subsequent changes to the PCA program. If the PCA program is changed it must be rewritten and signed on the next line. The current order is the most recently prescribed order.
- Oxygen therapy must be prescribed for any woman receiving a Remifentanil PCA [1].

3.4 PCA Program and Dosing

STANDARD REMIFENTANIL CONCENTRATIONS AND PCA BOLUS DOSES				
DRUG & PRESCRIPTION	**CONCENTRATION**	**PCA BOLUS DOSE**	**DURATION OF BOLUS DELIVERY**	**LOCK OUT PERIOD**
Remifentanil 2mg (2000microg) in 100mL of sodium chloride 0.9%.	**20microg/mL**	**20microg = 1mL**	**15 Seconds**	**2 Minutes**
IF ADDITIONAL PAIN RELIEF IS REQUIRED THE BOLUS DOSE MAY BE INCREASED AFTER REVIEW BY AN ANAESTHETIST MEDICAL OFFICER				
Remifentanil 2mg (2000microg) in 100mL of sodium chloride 0.9%.	**20microg/mL**	**30microg = 1.5mL**	**15 Seconds**	**2 Minutes**
Remifentanil 2mg (2000microg) in 100mL of sodium chloride 0.9%.	**20microg/mL**	**40microg = 2mL**	**15 Seconds**	**2 Minutes**

3.5 PCA Preparation, pump set up and programming

- All high-risk medications must be prepared and administered in accordance with PD2024_006 High-Risk Medicines Management and PD2022_032 Medication Handling
- RM prepares medication, does pump setup and programming and connect to the woman with anaesthetic MO as a second checker**.**
- Complete the IV additive label to the infusion bag and label the infusion line as per National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines.[10]
- Deliver remifentanil PCA through a dedicated PCA pump with a lock box and dedicated IV line.
- **Remifentanil is NOT compatible with oxytocin** and therefore requires a dedicated IV line if the woman's labour is being induced or augmented[6].
- PCA key must be kept with the S4D and S8 drug cupboard keys.
- Connect maintenance fluids to the Y-extension port of the PCA administration set.
- Switch pump on.
- Press 'yes' to start a new infusion.
- Select therapy 'IV PCA – Remifentanil'.
- Select 'prime tubing'. Ensure the line is not connected to the woman's cannula.
- Lock infusion pump and lock box.

- Connect the PCA line directly to the IV cannula. DO NOT use a 3-way tap.
- Press start and hand the button to the woman.
- Instruct the woman to initiate a dose as soon as the contraction starts to maximise the effect.
- **RM to remain with the woman throughout the duration of Remifentanil PCA**.
- PCA bag to be changed after 24 hours. [8,9]

3.6 Monitoring

- Record PCA observations on the NSW Health Patient Controlled Analgesia (PCA) adult form (SMR130.025)
- Commence continuous CTG monitoring, pulse oximetry and oxygen therapy via nasal prongs/mask (at 2-4/L min) for the duration of Remifentanil PCA.
- Document respiratory rate, sedation scores and SPO2 every 15 minutes for the duration of the Remifentanil PCA.
- Other Observations on the PCA chart to be recorded hourly for 6 hours and then second hourly [1]. HR, BP and Temperature to be monitored as per Ward Policy for labouring women.
- Document the PCA pump settings at the commencement of each shift, change of bolus dose or when the medication bag is changed.
- Escalate care and activate local CERS escalation pathway as per Clinical Emergency Response System (CERS) – Management of the Deteriorating Patient guidelines RHW CLIN004 CERS Management of the Deteriorating Patient.

3.7 Documentation

- NSW Health Patient Controlled Analgesia (PCA) Adult form (SMR130.025)
- Medical Records

3.8 Education Notes

- Remifentanil is a potent, short-acting mu-opioid receptor agonist and analogue of fentanyl. It has a rapid onset of action of approximately 1-minute, peak hemodynamic effects occur within 3-5 minutes of an infusion rate increase and recovery from its effects occur within 5-10 minutes[2,5].
- Remifentanil PCA provides effective non-neuraxial labour analgesia with fewer side-effects than Fentanyl, favourable neonatal outcomes and maternal satisfaction rates of more than 75%[3,4].
- Remifentanil rapidly crosses the placenta into the fetal circulation, but rapidly metabolized and redistributed in newborn. The risk for neonate appears to be minimal and to date no adverse neonatal outcome (Apgar score, uterine blood gases or need to give naloxone) has been proven [3,7].
- **A woman must not be left unsupervised at any time when using remifentanil PCA. All reported mortality associated with remifentanil PCA use has occurred when the woman has been left unsupervised for a short period of time**[3]

- Remifentanil PCA is not suitable for a woman who:
  - Has a documented allergy to remifentanil
  - Has severe respiratory disease as assessed by Anaesthetist[6]
  - Is unable to comprehend or understand the concept of PCA.
- Remifentanil is stable for 24 hours at room temperature after reconstitution when diluted to concentrations of 20-250mcg/ml[8,9].
- **Remifentanil is NOT compatible with oxytocin** and therefore requires a dedicated IV line if the woman's labour is being induced or augmented[6].

3.9 Related Policies/procedures

- SESLHDMG/142 Naloxone Medicine Guideline
- RHW CLIN138 Patient Controlled Analgesia- Intravenous
- PD2024_006 High-Risk Medicines Management
- PD2022_032 Medication Handling
- RHW CLIN004 CERS Management of the Deteriorating Patient
- GL2025_004 Fetal Heart Rate Monitoring
- SESLHDPD/325 -Translated Health Information

3.10 References

1. NSW Health Patient Controlled Analgesia-Observation Chart(Adult) for Clinical Innovation, accessed 20 October 2025
2. Australian Medicines Handbook, accessed via CIAP, 17 November 2025
3. Non-regional Analgesia for Labour: remifentanil in Obstetrics (BJA Education 19(2019) 357-361, accessed 17 November 2025
4. RemiPCA SAFE Network, accessed 17 November 2025
5. Australian Injectable Handbook, 9th ed., accessed 17 November 2025
6. Micro-Medex accessed via CIAP 17 November 2025
7. Stourac P, Kosinova M, Harazim H, Huser M, Janku P, Littnerova S, Jarkovsky J. The analgesic efficacy of remifentanil for labour. Systematic review of the recent literature. Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub. 2016 Mar 30;160(1):30-8. https://pubmed.ncbi.nlm.nih.gov/26460593
8. Bevans-Warren, T. Clegg, D. Sakata, D. & Reilly, C. (2018). Remifentanil Stability. *Anesthesia & Analgesia, 127* (3), e51-e52. doi: 10.1213/ANE.0000000000003600. Remifentanil Stability
9. Bourdon, F. Simon, N. Lannoy, D. Berneron, C. Décaudin, B. Reumaux, L.Duhamel, A. ,Richart, P. & Odou, P. (2019). Quality control and stability of ketamine, remifentanil, and sulfentanil syringes in a pediatric operating theater. *Pediatric Anesthesia, 29* (2), 193-199. doi: 10.1111/pan.13563.https://pubmed.ncbi.nlm.nih.gov/30549392/
10. National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines.

4 ABORIGINAL HEALTH IMPACT STATEMENT DOCUMENTATION

- Considerations for culturally safe and appropriate care provision have been made in the development of this Business Rule and will be accounted for in its implementation.
- When clinical risks are identified for an Aboriginal and/or Torres Strait Islander woman or family, they may require additional supports. This may include Aboriginal health professionals such as Aboriginal Liaison Officers, health workers or other culturally specific services

5 CULTURAL SUPPORT

- For a Culturally and Linguistically Diverse (CALD) woman, notify the nominated cross-cultural health worker during Monday to Friday business hours
- If the woman is from a non-English speaking background, call the interpreter service: NSW Ministry of Health Policy Directive PD2017_044-Interpreters Standard Procedures for Working with Health Care Interpreters.

6 NATIONAL STANDARDS

- Standard 4- Medication Safety

7 REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
04/05/26	2	RHW BRGC
17/11/25 -20/04/2026	2	CBR Format change, Reviewed & updated RHW Acute Pain Services, Lead Pharmacist and Clinicians
28/4/21		Reviewed & endorsed Therapeutic & Drug Utilisation Committee
20/9/2018		Approved RHW Quality & Patient Care Committee
August 2018		Reviewed & Endorsed Maternity Services
October 2015		Title change
21/5/15	1	Approved RHW Quality & Patient Safety Committee
12/5/15		Reviewed & endorsed RHW Maternity Services
21/3/13		RHW Quality & Patient Safety Committee
February 2013		Reviewed & endorsed Therapeutic and Drug Utilisation Committee
21/11/05		RHW Quality Council