

Trust Guideline for the use of Intravenous Patient Controlled Analgesia (PCA) using Remifentanil in Labour

A Clinical Guideline

For use in:	Delivery Suite
By:	Anaesthetists and Midwives
For:	Women in labour
Division responsible for:	Women and Children Division
Key Words:	PCA, Analgesia, Remifentanil
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If Yes – does the strategy / policy deviate from the recommendations of NICE? If so, why?	N/A

Version and Document Control:

Version Number	Date of Update	Change Description	Author
5	27/06/2022	This version includes 3 recent publications about safety, comparison with epidural analgesia and maternal experience with Remifentanil PCA (ref 14-16). There are no changes to the indications, contraindications, or administration.	Dr Jeremy Corfe

This is a Controlled Document

Printed copies of this document may not be up to date. Please check the hospital intranet for the latest version and destroy all previous versions.

Quick Reference Guideline

14 - point checklist when initiating Remifentanil PCA for Labour Analgesia

1. Confirm indication / contraindication for Remifentanil PCA (see page 5).
2. Patient has read information leaflet (**Appendix A**) [Trustdocs Id: 13830](#).
3. Confirm **NO** opiates for 4 hours previously.
4. Check with Midwife-in-charge regarding safe staffing levels.
 - **Midwifery presence is mandatory at all times after PCA initiation.**
 - **Do not continue if this cannot be guaranteed.**
5. Verbal consent taken by Anaesthetist.
 - *Complete Remifentanil sticker (**Appendix B**) and stick in notes.*
6. Dedicated 20Gu IV cannula.
 - *No extension, opposite arm to NIBP, avoid dorsum of hand.*
7. Anaesthetist ONLY to prescribe and set up the PCA (see page 6).
8. Is the indication for IUD? If yes, then reduce bolus dose to 20 mcg.
9. Anti-emetic and Ranitidine prescribed?
10. Ensure the following are available in the room:
 - *Self-inflating bag-valve-mask (BVM).*
 - *Non-rebreather facemask (with reservoir bag).*

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- *Nasal Oxygen cannula.*
- *Oxygen supply (wall).*
- *Naloxone 400 micrograms.*
- *Atropine 600 micrograms.*
- *Ephedrine 30 mg.*

11. Anaesthetist must be present at initiation and for the first five boluses.

12. Midwife to record observations on specific observation chart (**Appendix C**).

Every 15 minutes for the first hour then every 30 minutes thereafter.

13. Print and leave a copy of this guideline in the delivery room for reference.

14. Refer to **Appendix D** for management of Remifentanyl side effects.

Objective of the Guideline

The objective of this guideline is to provide a clear explanation and instruction for the safe setup, initiation, use and discontinuation of Remifentanyl PCA for labour analgesia in the Delivery Suite.

This guideline also details the management strategy in the event of complications and side effects from using Remifentanyl.

Rationale for Recommendations

Traditionally, patients wanting labour analgesia receive self-administered Entonox via a mouthpiece, or intramuscular Pethidine administered by a Midwife or an epidural sited by an Anaesthetist. Entonox on its own may not provide adequate pain relief for some women.

Pethidine has well recognised side-effects which include sedation, gastric stasis and hypoventilation in the mother^{2,12}. Pethidine also crosses the placenta readily and may result in prolonged sedation of the newborn. Many women may not wish to have Pethidine because of its neonatal effects.

Epidurals provide excellent pain relief but have complications including post dural puncture headache, nerve damage and an increased risk of instrumental delivery. Many women do not wish to have an epidural because of these risks.

Remifentanyl PCA offers an additional choice to women who do not want to have Pethidine or an epidural. The intravenous administration of Remifentanyl via a patient controlled analgesia device is advantageous for the following reasons:

1. It matches the time course of labour as it has a rapid onset and offset. It takes 20 seconds for Remifentanyl to reach the brain (one arm-brain circulation time) and 1 minute to reach its peak effect ($t_{1/2 ke0}$: 1.3 min).
2. It is non-cumulative in the mother and baby and therefore has very few extended maternal or neonatal side effects⁵.
3. Transient loss of variability in CTG trace may occur in a small number of cases⁷. However, they are less frequent than those observed during systemic administration of other opioids, and rarely require intervention^{8,10,12}.
4. Provided there is continuous monitoring, administering Remifentanyl by PCA device has been shown to be safe¹⁵. When compared to Pethidine, PCA Remifentanyl has better pain scores, greater maternal satisfaction, less maternal desaturation, fewer CTG abnormalities and higher neonatal neurological and adaptive capacity scores (NACS) at 30 minutes^{2,12, 16}.
5. Results from the RESPITE¹³ Trial have confirmed that pain scores and maternal satisfaction is better with Remifentanyl. Median VAS pain scores were 13.9% lower for Remifentanyl compared to Pethidine. 86% of women thought Remifentanyl gave effective pain relief compared to 71% with Pethidine.
6. **Most importantly the RESPITE¹³ Trial showed a 50% reduction in conversion to epidural analgesia with Remifentanyl PCA. It also showed a reduction in instrumental deliveries of 44% with Remifentanyl PCA. Caesarean section rates were not affected.** This reduction in instrumental deliveries may be due to the reduced conversion to epidural in the Remifentanyl PCA group, however the study was not powered to prove this.
7. There is some recent additional evidence that women with Remifentanyl PCA have shorter labours and a higher rate of spontaneous delivery¹⁴. A 2019 Swedish study looked at outcomes over a 7 year period of primigravida women undergoing induction. Women who received Remifentanyl PCA had shorter labours (5.6 vs 8.5 hours $p < 0.001$) and were more likely to have a spontaneous delivery (94% vs 65% $p < 0.001$) compared to women who received epidural analgesia. Rates of maternal oxygen desaturation, fetal sedation, PPH and maternal satisfaction did not differ between the groups.
8. As with any intravenous PCA system, the patient benefits from a greater sense of control over her pain management, an important psychological effect which contributes to the success of this technique^{1,7,16}.
9. The safety profile of Remifentanyl PCA has been studied and published in various journals^{1,6,7,11,15}. Comparison studies on the basis of efficacy and side-effects favour Remifentanyl over Pethidine^{2,5,11}.
10. Remifentanyl PCA for labour analgesia has been safely used for many years across many obstetric units in United Kingdom^{5,9,15} including here at the Norfolk & Norwich University Hospital. In 2019 the group responsible for pioneering Remifentanyl PCA published a 10 year retrospective observational study looking at 8170 women who chose Remifentanyl PCA. Using a 40mcg bolus they found no difference in outcomes (instrumental and caesarean rates, APGAR scores and NICU admissions) compared to Diamorphine and epidural analgesia.

Caution (Fetal Malposition, High Maternal BMI and Intra Uterine Death):

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In spite of its many perceived benefits, it must be recognised that administering a potent systemic opioid like Remifentanyl has the potential risk of causing profound sedation and respiratory depression⁵.

It is important to follow the processes laid out in the '**Quick Reference Guideline**'. There **MUST** be constant Midwifery presence and continuous pulse oximetry monitoring of the patient. Recognising and promptly treating the side effects of Remifentanyl is possible only by close and continuous monitoring of the woman in labour in order to prevent complications.

Unlike an epidural, Remifentanyl PCA will not provide complete labour analgesia. Patients are unable to sleep when they use Remifentanyl PCA as they have to remain awake to press the button. In situations where labour is anticipated to be longer and more painful (e.g. an induction of labour in a primipara with an occipito-posterior baby) or when the patient is exhausted and needing to sleep, an epidural is preferred. The attending Midwife and Anaesthetist should help guide the patient in this decision.

Remifentanyl should not be initiated in patients with a BMI >40. Epidural analgesia is preferred in this patient population as this can be topped up for theatre if required. BMI is a relative contraindication and patients with a BMI >40 may have a Remifentanyl PCA but only after discussion with the Consultant Obstetric Anaesthetist on call or if previously documented in the Anaesthetic High Risk clinic.

Women with twin pregnancies should be encouraged to have epidural analgesia to allow internal podalic version of the second twin.

In women who weigh less than 50 kg a reduced starting bolus dose of 20mcg should be used.

Intra-Uterine Deaths (IUD):

It may be offered to patients with an IUD but constant Midwifery presence and minimum standards of monitoring **must still be maintained**.

Remifentanyl PCA in IUD has featured in a number of case reports of cardio-respiratory arrest when Midwives have not been present continuously in the room^{3,4}. Higher levels of Remifentanyl may occur in women with an IUD due to reduced volume of distribution and absent fetal metabolism.

A reduced bolus dose of 20 micrograms must be used from the start with IUDs.

Patient Consent:

Where possible, patients should be given prior opportunity to familiarise themselves with the patient information leaflet and to ask questions to the Anaesthetist.

It is important to inform the women that this is an unlicensed use of this medication but written consent is not necessary. This does not mean that the medication is unsafe but that using Remifentanyl as a labour analgesia is outside the terms of its UK license.

Remifentanil PCA has been safely used here at NNUH for a number of years.

Analgesia with Remifentanil PCA is not as effective as epidural analgesia. Women will still feel some pain. Unlike an epidural they will not be able to sleep.

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Consent should therefore include:

- Unlicensed indication.
- Sedation, itching, nausea.
- Respiratory depression, need for continuous SaO₂ monitoring, may require supplemental O₂.
- Incomplete analgesia, conversion to epidural.

Indications for Remifentanil PCA:

Remifentanil PCA is an alternative form of analgesia for patients who do not want Pethidine or an epidural. It may be used when epidural analgesia is contraindicated and other forms of analgesia are insufficient.

Remifentanil PCA may also be preferred in patients with:

- Coagulopathies and bleeding disorders.
- Anatomical deformities of spine.
- Previous spinal surgery.
- Neurological diseases.
- Sepsis.

Contraindications to Remifentanil PCA:

- Allergy to Remifentanil.
- Gestation < 36 weeks (unless for IUD).
- Other long acting opioid (e.g. Oramorph or Pethidine) in the **preceding 4 hours**.
- BMI of greater than 40.
- Twins.

Aside from allergy to Remifentanil these contraindications are relative. They can be overridden but only after discussion with a Consultant Obstetric Anaesthetist or if previously documented in High Risk Obstetric Anaesthesia clinic.

Initiating a PCA:

The decision to commence intravenous PCA using Remifentanil should be taken by an Anaesthetist covering Obstetric Anaesthesia duties in liaison with the Delivery Suite Midwifery Co-ordinator.

Continuous pulse oximetry monitoring and constant Midwifery presence with the patient is a pre-requisite to using Remifentanil PCA. The Midwife caring for the patient should have undergone local training and be familiar with the working of a PCA pump and competent in recognising the side effects of Remifentanil.

If these prerequisites cannot be guaranteed then Remifentanil PCA should not be started.

The documentation and checking procedure should be performed according to the Trust's 'Medicines Policy Core Standards – Drug Administration 2017' document.

It is the responsibility of the on-call Obstetric Anaesthetist to set up the PCA and program it appropriately. Preparation must only be done by the Anaesthetist.

Six CME 575 Bodyguard pumps are available for use with Remifentanil PCA on Delivery Suite. They are only programmed to be used with Remifentanil and must not be used with any other opiate. They must not be taken off Delivery Suite.

The pumps have been programmed in such a way that they will not allow clinician boluses, loading doses or background infusions. The programs cannot be altered.

CME 575 Bodyguard pump set up:

Add 4mg Remifentanil to a 100mL bag or bottle of normal saline to give a concentration of 40 micrograms per mL.

Each pump has three programs:

- **Program A: 40mcg bolus (1mL bolus), 2 minute lockout**
- **Program B: 30mcg bolus (0.75mL bolus), 2 minute lockout**
 - *Standard regime; use for most patients.*
- **Program C: 20mcg bolus (0.5mL bolus), 2 minute lockout**
 - *Use for IUD and patients weighing less than 50kg.*

Audit data from the first year of Remifentanil use at the NNUH showed rates of nausea and vomiting to be 41% and sedation to be 28%. Because of this it has been decided to start patients on a smaller initial bolus and to **give a prophylactic dose of IV Ondansetron.**

Program B (30mcg bolus) should therefore be used for most patients.

Program C (20mcg bolus) should be used for women with an IUD or for women weighing less than 50kg.

Program C should be used if respiratory depression occurs with either program A or B. If analgesia is deemed inadequate then the bolus dose may be increased.

Setup:

Refer to quick reference guideline (Appendix E). A laminated version with Management of side effects of Remifentanil PCA on its reverse should be immediately available in the room where the PCA is being used.

The woman must have two IV cannulas: A 20Gu cannula dedicated to Remifentanil PCA only and a 16Gu cannula for intravenous fluids.

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The PCA should be connected directly to the 20Gu IV cannula with no intermediary extensions or Bionnectors.

The cannula should **not** be sited in the back of the hand and the blood pressure cuff should be on the **opposite** arm. This is to avoid drug trapping and subsequent release of large boluses.

No other drugs or IV fluids should be administered through the Remifentanil cannula.

DO NOT FLUSH a Remifentanil PCA cannula that is connected to a patient.

In addition, these items must be available in the room:

- Self-inflating bag-valve-mask (BVM).
- Non-rebreather mask.
- Oxygen supply (wall).
- Nasal Oxygen Cannula.
- Naloxone 0.4 mg (400 micrograms).
- Atropine 600 micrograms.
- Ephedrine 30 mg.

These drugs will be available in grab boxes located in the drug room. Ready filled syringes are preferred if available.

It is the responsibility of the Anaesthetist to teach the woman in labour how to use the PCA device i.e. to press the handset at the first subjective sign or in anticipation of a contraction.

The woman should be made aware that **she alone** should operate the handset. No one else, including members of staff, is allowed to operate the PCA on behalf of the patient. **This must be emphasised to the relatives.**

The Anaesthetist should be present in the room for the first five boluses to ensure the patient is not over-sedated or drops her oxygen saturations. If oxygen saturation falls below 94%, 2-4 L/min oxygen via nasal cannula should be administered. If the bolus dose is increased then the Anaesthetist must again be present for the next 5 boluses.

No other opiate should be administered whilst the PCA is in progress. Patients may continue to use Entonox and / or TENS if they wish.

Women using Remifentanil should be considered high risk and so should not eat but are allowed clear fluids. Regular Ranitidine should also be prescribed.

Monitoring (refer to Appendix C):

Essential monitoring:

- **Pulse oximetry** (continuous)

- **Heart rate** (continuous from pulse oximeter)
- **Respiratory rate** – initially every 15 min
- **Non-invasive blood pressure** – initially every 15 min
- **Sedation score** – initially every 15 min
- **Continuous CTG monitoring**

A full set of baseline observations should be recorded prior to initiating the PCA.

Observations should be recorded every 15 minutes for the first hour; subsequently if there have been no problems this may be reduced to every 30 minutes until discontinuation of the PCA. The dedicated Remifentanil PCA observation chart should be used (Appendix C).

The initiating Anaesthetist should ensure the first set of Observations have been recorded and that Midwife understands how to complete the Observation chart.

Once the PCA is initiated, one to one care is essential. **The woman must be monitored continuously** and must remain on Delivery Suite. The presence of an attending Midwife is **mandatory at all times** even when the indication for use is for **intra-uterine death**.

Systemic opioids can cause drowsiness and risk injuries so the woman should not get out of bed whilst using the PCA. If the woman wishes to mobilise off the bed then the PCA should be stopped for 5 minutes until its effects have completely resolved before the woman is allowed to mobilise.

If the Midwife has to leave the room and is unable to find someone to relieve her then the PCA button must be removed from the woman and disconnected from the pump. Entonox may be substituted until the Midwife returns.

Discontinuation and Removal of PCA:

The Remifentanil PCA should be stopped when the vertex is visible. This will allow time for any fetal Remifentanil to be metabolised before delivery.

The Remifentanil PCA should normally be disconnected once the placenta is delivered. However, it is acceptable for the patient to use the Remifentanil PCA to facilitate perineal repair under local anaesthetic infiltration.

The IV cannula should be **removed** on discontinuation of the PCA.

DO NOT FLUSH a Remifentanil PCA cannula. This could lead to significant respiratory depression. Please discuss with an Anaesthetist if it is deemed necessary to retain the IV cannula.

It is the responsibility of the Delivery Suite staff to thoroughly clean the pump and handset after use.

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Management of side effects of Remifentanil PCA (see Appendix D):

Low oxygen saturation:

- SaO₂ < 94% for more than 15 seconds **AND** respiratory rate more than 8 per minute.

Action:

- Remove PCA handset
- Administer oxygen 2 - 4L/min via nasal cannula.
- If SaO₂ improves to ≥ 94%, PCA may be restarted.

Respiratory depression:

- Respiratory rate less than 8 per minute.

Action:

- Remove PCA handset.
- Make every attempt to wake the patient up (shake and shout) if respiratory depression is associated with excessive sedation.
- Prop the patient up to a semi-upright position.
- Administer O₂ 15 L/min via non-rebreather mask.
- **Call the Anaesthetist** but do not leave the patient unattended.
- **Pull the EMERGENCY ALARM if SaO₂ falling below 90%.**
- If Respiratory Rate remains less than 8 give **Naloxone 400 micrograms IV**

Over sedation:

- Sedation score = P or U

Action:

- As for respiratory depression above.

If no response then give **Naloxone 400 micrograms IV**

- If sedation is refractory to the above measures, in addition to Remifentanil overdose, other causes to consider include hypoglycaemia, hypoxia, hypercarbia and cerebrovascular event.

Bradycardia and / or Hypotension:

- Bradycardia (maternal heart rate <50bpm) +/- hypotension (systolic <90 mmHg)

Action:

- Remove PCA handset.
- **Call the Anaesthetist** but do not leave the patient unattended.
- If heart rate fails to recover rapidly, treat with Atropine 600 micrograms IV.
- If hypotensive and heart rate > 50bpm, give 500 mL Hartmann's solution stat.
- Anaesthetist may give Ephedrine IV if the patient is hypotensive.
- Pull the **EMERGENCY ALARM** if patient is drowsy or unresponsive.

Troubleshooting for Anaesthetists:

If attempts to rouse the patient fail:

- Administer Naloxone up to 400 micrograms IV.
- Provide airway and respiratory support as clinically indicated.
- Ensure PCA Remifentanil use is suspended until patient is fully awake and appropriately responsive.

Subsequent management:

- Reduce the bolus dose: change the pump to use Program C (20mcg bolus).
- Ensure the patient does not use the PCA in between contractions.
- If the episode of respiratory depression recurs despite using only 20 micrograms per bolus stop the use of PCA and seek advice from the on call Consultant. Alternative analgesia will be required.

Clinical Audit Standards Derived from Guideline

As a part of continuous clinical monitoring, respiratory rate, oxygen saturations, heart rate, non-invasive blood pressure and sedation score, are to be documented for each patient (See Appendix C). Patients receiving this form of analgesia will be entered into the pre-existing anaesthetic database and abnormal physiological parameters and patients satisfaction will be audited.

Anonymised data will also be entered into the RemiPCA Safe Network (www.remipca.org). This is a network of hospitals which use the Remifentanil PCA in a standardised manner and contribute their outcome data to a central register. It allows the network provider to evaluate the collective data of all hospitals, perform overall quality control and develop best practice. Safety alerts can be rapidly generated and circulated to all network members if a critical incident occurs at a participating hospital. Individual hospitals can also generate reports.

Summary of development and consultation process undertaken before registration and dissemination

This document has been circulated to all Consultant Obstetric Anaesthetists and was approved by the Maternity Guidelines Committee on 3rd February 2017.

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Distribution list / dissemination method

Anaesthetists, Midwives, Obstetricians, display of quick reference guideline in the obstetric anaesthetic office, intranet.

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Remifentanil PCA for labour analgesia:

Consent: Unlicensed indication. Sedation, itching, nausea.

Remifentanil PCA for labour analgesia:

Consent: Unlicensed indication. Sedation, itching, nausea.

Appendix B

Respiratory depression, continuous SaO₂ monitoring, may require supplemental O₂. Incomplete analgesia, conversion to epidural PCA technique

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Explained Information leaflet read: Y / N

Verbal consent given: Y / N

Prerequisites:
Midwifery presence is mandatory at all times

No opiates for 4 hours previously

Dedicated 20Gu IV cannula

Anti-emetics & Ranitidine prescribed.

Naloxone, Ephedrine & Atropine available in the room

Oxygen, nasal cannula, face mask, self-inflating bag-valve-mask in room

Only Anaesthetists may prescribe and set up the PCA

Anaesthetist must be present at initiation and for the first five boluses

Initial bolus dose used: 40mcg / 30 mcg / 20 mcg

Comments:

Anaesthetist:

Signed:

Date:

Remifentanil PCA for labour analgesia:

Consent: Unlicensed

indication. Sedation, itching, nausea.

Respiratory depression, continuous SaO₂ monitoring, may require supplemental O₂.

Incomplete analgesia, conversion to epidural

PCA technique, timing and patient only administration explained Information leaflet read: Y / N

Verbal consent given: Y / N

Prerequisites:
Midwifery presence is mandatory at all times

No opiates for 4 hours previously

Dedicated 20Gu IV cannula

Anti-emetics & Ranitidine prescribed.

Naloxone, Ephedrine & Atropine available in the room

Oxygen, nasal cannula, face mask, self-inflating bag-valve-mask in room

Only Anaesthetists may prescribe and set up the PCA

Anaesthetist must be present at initiation and for the first five boluses

Initial bolus dose used: 40mcg / 30 mcg / 20 mcg

Comments:

Anaesthetist:

Signed:

Date:

Respiratory depression, continuous SaO₂ monitoring, may require supplemental O₂. Incomplete analgesia, conversion to epidural

PCA technique, timing and patient only administration explained Information leaflet read: Y / N

Verbal consent given: Y / N

Prerequisites:
Midwifery presence is mandatory at all times

No opiates for 4 hours previously

Dedicated 20Gu IV cannula
Anti-emetics & Ranitidine prescribed.

Naloxone, Ephedrine & Atropine available in the room

Oxygen, nasal cannula, face mask, self-inflating bag-valve-mask in room

Only Anaesthetists may prescribe and set up the PCA

Anaesthetist must be present at initiation and for the first five boluses

Initial bolus dose used: 40mcg / 30 mcg / 20 mcg

Comments:

Anaesthetist:

Signature: analgesia, conversion to epidural
Date: PCA
Remifentanil PCA for labour analgesia: technique and patient only administration explained
Information leaflet read: Y / N
Verbal consent given: Y / N
Prerequisites:
Midwifery presence is mandatory at all times
No opiates for 4 hours previously
Dedicated 20Gu IV cannula
Anti-emetics & Ranitidine prescribed.
, nausea.
Respiratory depression, continuous SaO₂ monitoring, may require supplemental O₂.
Incomplete analgesia, conversion to epidural

ministration explained
Information leaflet read: Y / N

Verbal consent given: Y / N

Prerequisites:

Midwifery presence is mandatory at all times

No opiates for 4 hours previously

Dedicated 20Gu IV cannula

Anti-emetics & Ranitidine prescribed.

Naloxone, Ephedrine & Atropine available in the room

Oxygen, nasal cannula, face mask, self-inflating bag-valve-mask in room

Only Anaesthetists may prescribe and set up the PCA

Anaesthetist must be present at initiation and for the first five boluses

Initial bolus dose used:
40mcg / 30 mcg / 20 mcg

Comments:

Anaesthetist:

Signed:

Date:

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Remifentanyl PCA Observation Chart

Midwifery presence is mandatory at all times

Record observations every 15 minutes for the first hour and then every 30 minutes

Pain score (at peak of contraction):

- 0** No pain
- 1** Mild pain
- 2** Moderate pain

Sedation Score:

- A** Alert
- V** Responds to voice
- P** Responds to pain
- U** Unconscious

	Baseline	Every 15 minutes for first hour			Every 30 minutes thereafter						
Actual time											
Heart Rate											
Blood Pressure											
O₂ Saturations											
Air / O₂ (L/min)											
Respiratory Rate											
Pain Score											
Sedation Score											
Successful presses											

Record observations every 15 minutes for the first hour
and then every 30 minutes

Midwifery presence is mandatory at all times

Remifentanyl PCA Observation Chart

Trust Guideline for the Use of Intravenous Patient Controlled Analgesia (PCA) Using Remifentanyl in Labour

Pain score (at peak of contraction):

Pain score (at peak of contraction):

- 0** No pain
- 1** Mild pain
- 2** Moderate pain

Sedation Score:

- A** Alert
- V** Responds to voice
- P** Responds to pain
- U** Unconscious

	Every 30 minutes thereafter													
A c t u a l t i m e														
H e a r t R a t e														
B l o o d P r e s s u r e														

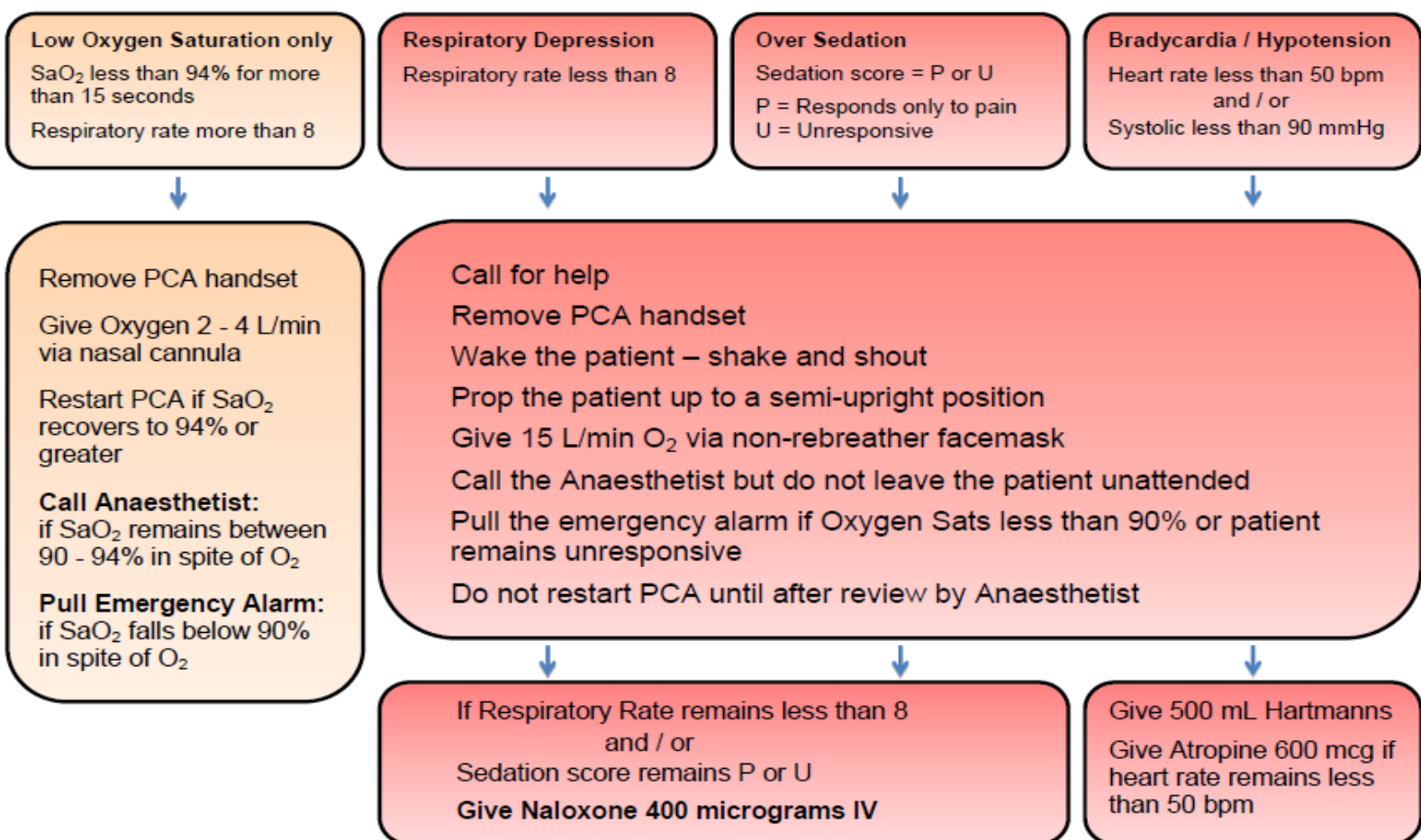
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e														
O ₂ Saturations														
Air / O ₂ (L / min)														
Respiratory Rate														
Pa														

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i n s c o r e														
S e d a t i o n S c o r e														
S u c c e s s f u l p r e s s e s														

Management of Side Effects of Remifentanil PCA



– Appropriate syringes & needles

Remain with the patient at all times

Stop PCA when vertex visible

– Every 15 minutes for 1st hour

– Every 30 minutes thereafter

TENS and Entonox may still be used

Anaesthetist Responsibilities:

Ensure staffing levels appropriate

Verbally consent patient

Record baseline Observations on chart

Set up pump

Explain to patient how to use PCA

– Anticipation: press at first sign of contraction

– **Only the patient may press PCA**

Remain with patient for first 5 boluses

Give IV Ondansetron & prescribe Ranitidine

Review regularly & support Midwifery team

Pump Set Up:

Mix 4mg Remifentanil in 100ml Saline:

≥ 50kg = 30mcg bolus (Program B)

< 50kg or IUD = 20mcg bolus (Program C)

Adjust dose depending on response

– Use Program A (40mcg) if analgesia inadequate

– Reduce dose if significant side effects occur

Use dedicated 20Gu cannula

– No bionector

– Opposite arm to NIBP

– Avoid using back of hand

Discontinuation:

Remove, do not flush the cannula

Call Anaesthetist if need to retain cannula

Trouble shooting:

Remove handset from patient

See flowchart over page

Dr Jeremy Corfe

29th January 2019