Guidelines for the Administration of Naloxone

Applicable to (please mark with an X)							
Group-wide		**LUHFT-wide**				**Liverpool Women's**	**x**
Aintree Hospital		**Broadgreen Hospital**		**LCL**		**Royal Liverpool Hospital**	

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Department/Division:	Anaesthetics, Gynaecology Division
Version:	1.1
Approving Committee or Group:	Gynaecology Divisional Governance
Date Approved:	05/08/2028
Date for Review: This document will be reviewed every 3 years or as and when changes or legislation which affects the document are introduced.	05/08/28
Target Audience:	Anaesthetics
Key Word/Tags:	Naloxone; opioid
Consulted with:	Consultant Anaesthetics Maternity Guidelines Group Members
Associated Documents:	Management of Complications of Neuraxial Block
Access to Information:	To access this document in another language or format please email ITS@liverpoolft.nhs.uk

What is new in this version?

Latest Version	Page	Changes Made	Date
1.1	**6**	**Naloxone in Obstetrics added**	**05/08/25**

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1.0 Introduction and Purpose

Naloxone is a specific antidote for opioid toxicity; it is a pure opioid antagonist with little or no agonist activity. Naloxone administration is potentially lifesaving in cases of severe opioid toxicity. Naloxone also has a role in the reversal of the adverse effects of opioids. All opioids can cause respiratory and CNS depression.

2.0 Recognition of Opioid Adverse Effects and Toxicity

- Patient is receiving opioids
- Respiratory rate is less than 8 breaths/minute
- Sedation score or asleep difficult to wake OR Conscious level (medical NEWS, AVPU) P or U
- Oxygen de-saturation may occur
- Small or pinpoint pupils (confirmatory sign only, may occur as a side effect without toxicity)

Other common side effects of opioids include dizziness, nausea, pruritus and urinary retention.

3.0 Prescribing Guidance

Naloxone should be prescribed on the electronic prescribing system.
The dosing regimen chosen (complete or partial reversal) should be based on:

- Severity of toxicity (i.e. presence of respiratory depression / respiratory arrest)
- Urgency of situation
- Patient Factors (previous opioid use, palliative diagnosis)
- Aim of treatment: complete reversal or partial reversal

Complete reversal carries a risk of recurrence of pain and/or an acute withdrawal syndrome, in patients with a history of chronic opioid use. This may warrant the use of lower doses (partial reversal) particularly where respiratory depression is less immediately life threatening.

A more controlled approach is required (partial reversal) in palliative care or where rebound pain is likely to be a significant issue. However, this must be carefully balanced against the risk of respiratory arrest and death without prompt administration of naloxone.

Naloxone is administered as an injection. An effect is seen within 2 minutes of intravenous (IV) injection; usually as an increase in the respiratory rate, a reduction in the level of sedation and a rise in blood pressure (if compromised). The effect lasts for 45 –60 minutes after IV administration. This is shorter than the duration of action of most opioids. Close monitoring and repeated injections may be necessary.

Repeat dosing may also be required where there has been a significant overdose with any opioid or to prevent relapse into respiratory depression following initial treatment of toxicity.

4.0 Monitoring

Patients who are being managed as suspected opioid toxicity, irrespective of the severity or presence of respiratory depression, should have regular observations (RR, sedation/AVPU score, BP): every 15 minutes for 2 hours, every 30 minutes for 4 hours, then 4 hourly thereafter, until increased frequency of observations is deemed unnecessary by clinician (this should be documented in the patients clinical notes and nursing staff caring for patient informed).

Naloxone administration may be appropriate in the absence of respiratory depression.

Sedation score
0 = awake & orientated
1 = asleep, easily woken
2 = asleep, difficult to wake

AVPU score
A = Alert
V = Responds to Voice
P = Responds to Pain
U = Unresponsive

Target response:

- RR > 8 breaths/min
- Conscious level: A or V

OR

- Sedation score < 2

5.0 Incident Reporting

Any unplanned administration of naloxone must be reported as an incident on the trust incident reporting system (Ulysses) so that the circumstances leading to the need for naloxone can be investigated.

6.0 Complete Reversal

With respiratory depression and significant urgency

First dose:	Naloxone 400 microgram IV bolus (undiluted)
Second dose:	Naloxone 800 microgram IV bolus (undiluted)
Third dose:	Naloxone 800 microgram IV bolus (undiluted)

Fourth dose:	Naloxone 2mg IV bolus (undiluted)

Observations (RR, sedation/AVPU scores, BP) every 15 minutes for 2 hours then every 30 minutes for 4 hours then 4 hourly thereafter.
Repeat doses may be required at 1 – 2 hour intervals.

Repeat 2mg doses up to a maximum total of 10mg and consider a continuous IV infusion.

Stop any current prescription for all routes of opioid.
TOXBASE® is the reference for the most up to date information for managing overdose (AED, admissions areas)

In severe respiratory depression or respiratory arrest:
initiate bag mask ventilation with oxygen 15 L/min while preparing the NALOXONE for administration.

****IMPORTANT****

- Stop any current prescription for opioids via all routes – check all prescriptions.
- Remove any patches.
- If no response is observed after 4mg of naloxone:
  - Review the diagnosis.
  - Attempt to confirm if treating a definite opioid overdose as another CNS depressant may have been administered and require additional treatment.
- Naloxone half-life is shorter than the duration of action of most opioids – close monitoring, repeated dosing or a continuous IV infusion may be needed.

PATIENTS REQUIRING A CONTINOUS INFUSION OF NALOXONE SHOULD BE REFFERED TO AN APPROPRIATE CLINICAL AREA FOR ONGOING MONITORING (GYNAE HDU/Critical Care)

7.0 Partial Reversal

Use only when situation not immediately life-threatening

- Palliative care
- Acute pain management
- Chronic opioid use (ongoing analgesic effect required)
- Conscious sedation

Suspend any current prescription for all routes of opioid

First dose:	Naloxone 100 microgram* IV bolus (diluted)
Second dose:	Naloxone 50 to 100 microgram IV bolus (diluted)
Third dose:	Naloxone 50 to 100 microgram IV bolus (diluted)
Fourth dose:	Naloxone 50 to 100 microgram IV bolus (diluted)

Repeat doses up to a maximum total of 400 microgram.

Observations (RR, sedation/AVPU scores, BP) every 15 minutes for 2 hours, then every 30 minutes for 4 hours, then 4 hourly thereafter

Repeat doses may be required at 1 – 2-hour intervals

****IMPORTANT****

- Suspend any current prescription for opioids via all routes – check all prescriptions, remove any patches.
- Naloxone half-life is shorter than the duration of action of most opioids – close monitoring, repeated dosing or a continuous infusion may be needed.
- Use naloxone with caution in a patient with long term opioid use. Close monitoring of observations and maintaining or restoring pain relief is essential.
- If no response is observed after 400microgram of naloxone:
  Review the diagnosis.
  Attempt to confirm if treating a definite opioid overdose, as another CNS depressant may have been administered.
  Review need for complete reversal.
- If patient continues to show signs/symptoms of opiate toxicity needing further boluses of naloxone, consider referral to an area for ongoing monitoring and naloxone infusion

PATIENTS REQUIRING A CONTINOUS INFUSION OF NALOXONE SHOULD BE REFFERED TO AN APPROPRIATE CLINICAL AREA FOR ONGOING MONITORING

8.0 Preparation & Administration of Naloxone

- The ampoules contain 400micrograms/ml of naloxone.
- Dilute 1ml of naloxone 400micrograms/ml with 7mls of normal saline to give 8mls of a 50micrograms/ml solution.
- Give 2mls (100micrograms) IV of this mixture. If no IV access is available - give IM.
- Titrate the dose to reverse respiratory depression without reversing analgesia.
- If no response after 2 minutes repeat to a maximum of 400micrograms (8mls).

9.0 Preparation for Infusion

- Add 2mg of naloxone to 500ml of normal Saline or Dextrose 5% (this gives a final concentration of 4micrograms/ml).
- Usual infusion rate is 25- 100ml/hr (100- 400micrograms/hr).
- Rate of infusion should be adjusted according to the response and can be increased up to 200ml/hr (800micrograms/hr).

10.0 Naloxone in Obstetrics

Naloxone may be used for the management of itching after neuraxial block with opiates. For management of this side effect, please see the guideline 'Management of neuraxial complications' which describes its use.

11.0 Roles and responsibilities

To follow the SOP and ensure:

- Recognise opiate overdose
- Treat effectively
- Document in notes / Ulysses if required

12.0 Training

Training is delivered via medication administration training as part of Anaesthetic training for Anaesthetists.

13.0 Equality, Diversity and Human Rights Statement

The Trust is committed to an environment that promotes equality and embraces diversity in its performance both as a service provider and employer. It will adhere to legal and performance requirements and will mainstream Equality, Diversity and Human Rights principles through its policies, procedures, service development and engagement processes. This document should be implemented with due regard to the commitment.

Appendix One: Document History and Version Control

Version	Date	Comments	Author/ Job Title
1.0	22/01/24	New SOP	Celia Whelan, Consultant Anaesthetist
1.1	05/08/25	Minor changes to SOP, move to 3 yearly review	Grainne Garvey, Consultant Anaesthetist