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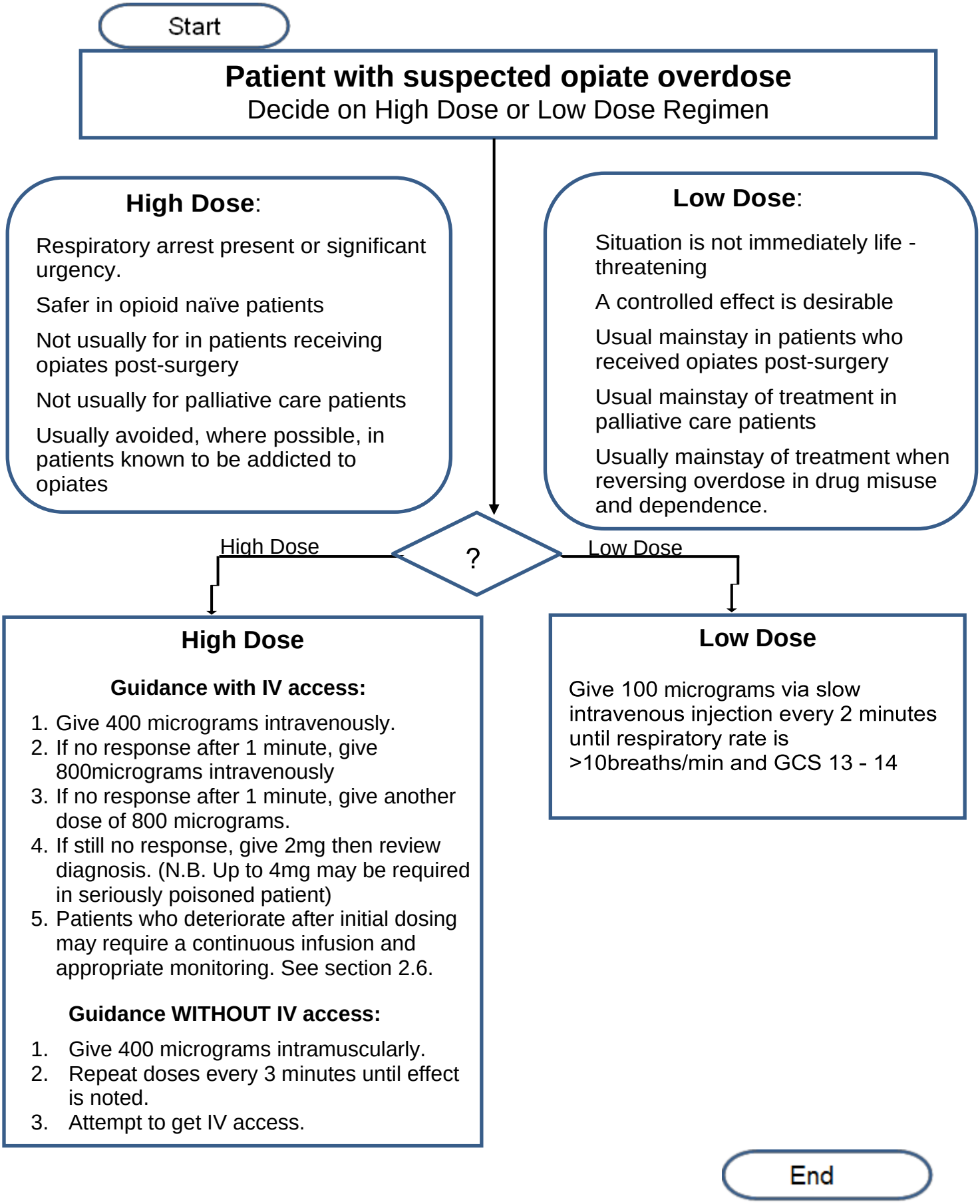
Royal Cornwall Hospitals NHS Trust

Use of Naloxone in Suspected Opiate Overdose in Adults Clinical Guideline

V3.0

March 2023

Summary


Start
Patient with suspected opiate overdose
Decide on High Dose or Low Dose Regimen
High Dose:
Respiratory arrest present or significant urgency.
Safer in opioid naïve patients
Not usually for in patients receiving opiates post-surgery
Not usually for palliative care patients
Usually avoided, where possible, in patients known to be addicted to opiates
Low Dose:
Situation is not immediately life - threatening
A controlled effect is desirable
Usual mainstay in patients who received opiates post-surgery
Usual mainstay of treatment in palliative care patients
Usually mainstay of treatment when reversing overdose in drug misuse and dependence.
High Dose
?
Low Dose
High Dose
Guidance with IV access:
1. Give 400 micrograms intravenously.
2. If no response after 1 minute, give 800micrograms intravenously
3. If no response after 1 minute, give another dose of 800 micrograms.
4. If still no response, give 2mg then review diagnosis. (N.B. Up to 4mg may be required in seriously poisoned patient)
5. Patients who deteriorate after initial dosing may require a continuous infusion and appropriate monitoring. See section 2.6.
Guidance WITHOUT IV access:
1. Give 400 micrograms intramuscularly.
2. Repeat doses every 3 minutes until effect is noted.
3. Attempt to get IV access.
Low Dose
Give 100 micrograms via slow intravenous injection every 2 minutes until respiratory rate is >10breaths/min and GCS 13 - 14
End

1. Aim/Purpose of this Guideline

1.1. This guideline aims to outline how to use naloxone to reverse opiate or suspected opiate toxicity safely, using appropriate dosing without precipitating undesirable adverse reactions such as acute withdrawal syndrome.

1.2. This version supersedes any previous versions of this document.

Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation

The Trust has a duty under the Data Protection Act 2018 and General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team

Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

2. The Guidance

2.1. The use of naloxone should only be considered if there is an immediate threat to life or a diagnosis of respiratory depression, regardless of the cause of opiate exposure.

2.2. Respiratory depression can be defined as:

- Respiratory rate <8 breaths/min (measured for a full minute)
- O_2 SATS <90% on air
- Decreased conscious level

2.3. The primary aim of treatment is to reverse the toxic effects of opiates such that patients are no longer at risk of respiratory arrest, airway loss, or other opioid-related complications. The primary aim of treatment should not be to restore a normal level of consciousness, and indeed in some circumstances restoring a normal level of consciousness is entirely inappropriate.

2.4. The rapidity of reversal depends on patient condition. Care must be taken in those who are opioid dependent, as rapid or complete reversal may induce a withdrawal state. This can cause patient harm, and make further management difficult.

2.5. **High Dose vs. Low Dose regimens – which to choose?**

2.5.1. **High Dose regimen:**

- Should only be used where there is respiratory arrest and significant urgency
- Is safer in opioid naïve patients
- Should not usually be used in palliative care patients or in patients receiving opiates post-surgery
- Should be avoided, where possible, in patients known to be addicted to opiates.

2.5.2. **Low Dose regimen:**

- Should be used where the situation is less immediately life threatening
- Should be used where a controlled effect is desirable
- Should be the mainstay of treatment in palliative care patients, patients who have received opiates post-surgery, and when reversing overdose in patients of drug misuse and dependence.

2.6. There are 2 main strategies when giving naloxone – 'higher initial dose regimens' and 'lower dose regimens'

2.6.1. **Higher initial dose regimens**

Where there is respiratory arrest and significant urgency where there is a need to achieve a pronounced and instant reversal:

Guidance with IV access:

- Give 400 micrograms intravenously
- If no response after 1 minute, give 800 micrograms intravenously.
- If no response after 1 minute, give another 800 micrograms intravenously
- If still no response, give 2mg then review diagnosis

(NB Up to 4mg may be required in seriously poisoned patient)

- Patients who deteriorate after initial dosing may require a continuous infusion

2.6.2. **Guidance without IV access:**

- Give 400 micrograms intramuscularly
- Repeat doses every 3 minutes until effect is noted

- Where possible, rotate injection sites
- Attempt to get IV access

2.6.3. **Lower initial dose regimens**

Where the situation is less immediately life threatening or where a more controlled effect is desirable.

Guidance:

- Give 100 micrograms via slow intravenous injection every 2 minutes until respiratory rate is >10 breaths/min and patient has a Glasgow Coma Score of 13-14

2.7. Continuous naloxone infusions

2.7.1. These may be required in patients who deteriorate after initial dosing. This is a result of naloxone's short effective half-life compared to the opiates that it may be reversing. Examples include reversing long acting opiates or when the magnitude of opiate overdose is sizeable.

Guidance:

- Make up an infusion of 2000 micrograms (2mg) naloxone in 500mL of 0.9% sodium chloride or 5% glucose.
- In patients who are fluid restricted, or need a higher doses, it is possible to use a solution of 10,000 micrograms (10mg) in 50mL of 0.9% sodium chloride or 5% glucose. Ideally this should go in a large peripheral vein or centrally to minimise irritation due to naloxone's low pH.
- Start the infusion at 60% of the dose required for resuscitation over the first hour (see table 1 or 2 below) and titrate to effect

2.7.2. **Table 1: Infusion rate, standard preparation (not fluid restricted)**

Resuscitation dose (micrograms)	**Initial dose over 1 hour (micrograms)**	**Initial Infusion rate using 2mg/500mL (ml/hr)**
100	60	15
200	120	30
300	180	45
400	240	60
500	300	75
600	360	90
700	420	105

Resuscitation dose (micrograms)	Initial dose over 1 hour (micrograms)	Initial Infusion rate using 2mg/500mL (ml/hr)
800	480	120
900	540	135
1000	600	150
1100	660	165
1200	720	180
1300	780	195
1400	840	210
1500	900	225
1600	960	240
1700	1020	255
1800	1080	270
1900	1140	285
2000	1200	300

2.7.3. **Table 2: Infusion rates, fluid restriction**

Resuscitation dose (micrograms)	Initial dose over 1 hour (micrograms)	Initial Infusion rate using 10mg/50mL (ml/hr)
100	60	0.3
200	120	0.6
300	180	0.9
400	240	1.2
500	300	1.5
600	360	1.8
700	420	2.1
800	480	2.4
900	540	2.7
1000	600	3.0
1100	660	3.3
1200	720	3.6

Resuscitation dose (micrograms)	Initial dose over 1 hour (micrograms)	Initial Infusion rate using 10mg/50mL (ml/hr)
1300	780	3.9
1400	840	4.2
1500	900	4.5
1600	960	4.8
1700	1020	5.1
1800	1080	5.4
1900	1140	5.7
2000	1200	6.0

2.8. **Continuous infusion monitoring**

- Naloxone infusions can be given on any ward.
- The patient must be managed in line of sight of a nurse or appropriately trained healthcare professional.
- The infusion should be adjusted and the patient regularly monitored to ensure they maintain a respiratory rate >10breaths/min and a GCS of 13-14 throughout.
- Specific cardiac monitoring is not necessary unless there is a individual clinical need
- Monitoring must continue for 1-2 hours after the infusion has stopped due to the short half-life of naloxone, in case the patient's GCS or respiratory rate drops. In these cases, provide rescue doses and restart the infusion.

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Compliance with the clinical guideline
Lead	Medication Safety Pharmacist
Tool	Incident reports, periodic clinical audit
Frequency	When incident reports are received Annually otherwise
Reporting arrangements	The completed report should be sent to the Medication safety Group for discussion and review. Medication safety group to advise if changes to guideline needed
Acting on recommendations and Lead(s)	The Medication safety group will report any necessary actions to the Medicines practice Committee
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within 3 months. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Inclusion and Human Rights Policy' or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Use Of Naloxone In Suspected Opiate Overdose In Adults Clinical Guideline V3.0
This document replaces (exact title of previous version):	The Use of Naloxone in Suspected Opiate Overdose in Adults Clinical Guideline V2.0
Date Issued/Approved:	24 February 2023
Date Valid From:	March 2023
Date Valid To:	March 2026
Directorate / Department responsible (author/owner):	Lorraine Moore, Lead pharmacist for Anaesthesia, Critical care and Theatres Rob Taylor, Emergency Department Nick Marshall, Anaesthetics
Contact details:	01872 25 2871
Brief summary of contents:	This guideline provides guidance on the appropriate dosing and administration of naloxone in adults
Suggested Keywords:	Naloxone, Opiate, Opioid, Reversal, Overdose
Target Audience:	RCHT: Yes CFT: No CIOS ICB: No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Medicines Practice Committee
General Manager confirming approval processes:	Richard Andrzejuk
Name of Governance Lead confirming approval by specialty and care group management meetings:	Kevin Wright
Links to key external standards:	None
Related Documents:	NHS/PSA/Re/2015/009

Information Category	Detailed Information
	NHA Patient safety Alert –Support to minimise the risk of distress and death from inappropriate doses of naloxone
Training Need Identified?	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Pharmacy

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
January 2016	V1.0	Initial version	Ian Nicholls, EPMA and Governance lead Pharmacist
September 2019	V2.0	Re-formatted guideline to fit new Trust template. No changes to previous information. Additonal guidance in section 2.5. Addition of necessary patient monitoring *in section 2.6.* Clarification the guideline is relevant to adults only.	Lorraine Moore, Lead Pharmacist for Critical Care and Theatres.
February 2023	V3.0	Minor punctuations changes. Addition of infusion to flow-chart. Addition of an infusion for fluid restriction. Clarification of where patients are managed.	Lorraine Moore, Lead Pharmacist for Anaesthesia, Critical Care and Theatres.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Use Of Naloxone In Suspected Opiate Overdose In Adults Clinical Guideline V3.0
Directorate and service area:	Pharmacy, Clinical Support
Is this a new or existing Policy?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Lorraine Moore, Lead Pharmacist for Anaesthesia, Critical Care and Theatres.
Contact details:	01872 25 2871

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	The aim of this guideline is to provide information to clinicians and nurses in all areas of the Trust dealing with adult patients on the safe and appropriate use of naloxone in a range of clinical circumstances.
2. Policy Objectives	Prevent harm to patients caused by incorrect use of naloxone
3. Policy Intended Outcomes	No patient harm
4. How will you measure each outcome?	By monitoring incident reports
5. Who is intended to benefit from the policy?	Patients

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Yes • Patients/ visitors: No • Local groups/ system partners: No • External organisations: No • Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:** RCHT critical care outreach team Emergency department clinicians Pain team Resuscitation group Medicines information service
6c. What was the outcome of the consultation?	Additions made as per version control table
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff or patient surveys:** No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	Guideline relevant to all adults.
Sex (male or female)	No	Opiate excess is not affected by gender
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	Opiate excess is not affected by gender
Race	No	Opiate excess is not affected by race/ethnicity
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	Opiate excess is not affected by disability

Protected Characteristic	(Yes or No)	Rationale
Religion or belief	No	Opiate excess is not affected by religion
Marriage and civil partnership	No	Opiate excess is not affected by marriage/civil partnership
Pregnancy and maternity	No	Naloxone is recommended for use in pregnancy or lactation where potential opiate excess is a possibility.
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	Opiate excess is not affected by sexual orientation

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Lorraine Moore, Lead Pharmacist for Anaesthesia, Critical Care and Theatres.

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis