GUIDELINES FOR THE USE OF NALOXONE INJECTION

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Guidelines for the use of naloxone injection in acute services

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Approved by:
Drugs and Therapeutics Committee
February 2018

Approved by:
Quality Committee

Document history

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<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Summary of amendments</th>
</tr>
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<tr>
<td>Feb 2016</td>
<td>1</td>
<td>New Guideline</td>
</tr>
<tr>
<td>Feb 2018</td>
<td>2</td>
<td>Routine review</td>
</tr>
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</table>

Membership of the policy development/review team

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DO NOT AMEND THIS DOCUMENT

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1.1 Introduction

Naloxone is a highly effective antidote for opioids and opiates and its use is potentially life-saving in many circumstances. It is used across a range of care settings where opioid and opiate use is common, and for a number of scenarios that range from management of drug misuse and dependence to the provision of palliative care. 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. Naloxone is given most often by the intravenous or intramuscular routes.

In 2014 NHSE published a patient safety alert drawing attention to the safety implications of inappropriate doses of the opioid antagonist naloxone. The alert highlighted the use of naloxone where it was not indicated or, in larger than recommended doses, can cause a rapid reversal of the physiological effects for pain control, leading to intense pain and distress and in increase in sympathetic nervous stimulation and cytokine release precipitating an acute withdrawal syndrome.

The focus of this guideline is the safe administration of naloxone injection in cases of opiate/opioid overdose.

2.0 Aims and objectives

2.1 This guidance is to inform clinical staff of the safe administration of naloxone injection.

2.2 To outline roles and responsibilities of all staff when administering naloxone injection.

3.0 Scope of the policy

3.1 This procedure applies to clinical staff in the Trust responsible for the prescribing and administration of naloxone injection.

3.2 Anyone can administer naloxone for the purpose of saving a life. In November 2005, naloxone was added to the list of injectable drugs in Article 7 of the Medicines Act.

4.0 Duties and responsibilities

4.1 Team or Ward manager: has overall responsibility for ensuring staff receive the necessary training and adhere to the procedures in this document. This includes regular monitoring of practice and ensuring any incidents are reported and managed appropriately. The most senior nurse on duty (Matron, Ward Manager or Duty Nurse) is responsible for managing the incident until the paramedic team take over.
4.2 The duty or ward doctor has responsibility for making clinical decisions and administering naloxone injection. The duty doctor should only insert a cannula if they are confident to do so.

4.3 In the absence of a doctor, nursing staff (who have received training) are responsible for administering naloxone injection (by the intramuscular or subcutaneous routes). A prescription is not required.

4.4 Clinical staff: are responsible for following these procedures and ensuring their knowledge and competencies are kept up to date and any incidents are reported promptly using the approved process.

5.0 General Principles

5.1 Prescribing, preparation and administration process – refer to the procedure for the safer use of injectable medicines.

5.2 Refer to the Cardiopulmonary resuscitation and the management of the deteriorating patient policy (see the trust intranet).

5.3 On finding a patient suspected of experiencing an overdose, summon help immediately by the following means:
   I. Press blue medical emergency button shout for help which will summon the emergency team.
      OR
   II. Pull any pinpoint alarm to summon assistance (you will hear the alarm if in a pinpoint area). If no alarm is heard you must go for help.
   III. If incident occurs in the grounds go for help (reception is always staffed) or to a ward if closer, unless the incident is in the central garden in which case the pinpoint alarms will sound.

5.4 The most senior nurse/shift coordinator must ensure that an identified person dials 9 - 999 to request an emergency 999 ambulance giving the following details:
   - Name of location and the site.
   - Name of the individual, & Date of Birth (if known)
   - Telephone number you are calling from.

6.0 Indication

6.1 Fundamentally the only indication for urgent and emergency use of naloxone is respiratory depression, regardless of the reason for the exposure to opioids or opiates. A diagnosis of respiratory depression should be sought before naloxone is considered.
6.2 The severity of respiratory depression significantly affects the way in which naloxone should be used. The indications for naloxone can be described as:

- The reversal of acute opioid or opiate toxicity with severe respiratory depression or arrest;
- The reversal of less severe respiratory depression\(^1\).

6.3 The severity of respiratory depression should be assessed. The Ambulance and Emergency Department guidance defines severe respiratory depression as follows: assisted ventilation where SpO2 < 90% (on high concentration oxygen for 30-60 seconds) and respiratory rate is half normal or three times normal\(^1\).

6.4 Emergency medicine advice suggests supplemental oxygen or bag-valve-mask ventilation where RR < 10/minute or SpO2 < 92% (on air)\(^1\).

6.5 Regardless, the severity of respiratory depression defines the acuteness of toxicity, subsequent management and whether or not naloxone is indicated\(^1\).

7.0 Dosage

7.1 Higher initial dose regimen

<table>
<thead>
<tr>
<th>Recommended naloxone dosing regimen (can be administered by nurses &amp; other trained staff in emergency situation)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BNF</strong>: an IM (or SC) dose: - 400 micrograms initially</td>
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<tr>
<td>Repeat every 2-3 minutes. Each dose is given in subsequent resuscitation cycles if the patient is not breathing normally</td>
</tr>
<tr>
<td>Continue until an effect is noted(^1), breathing is normal or the ambulance arrives(^5) or medical assistance is available(^6). Doses are injected in the deltoid region or anterolateral thigh(^4). Where practicable, the site of injection should be varied for repeated intramuscular doses(^1,6). Nurses may give this regimen by the intramuscular or subcutaneous route.</td>
</tr>
</tbody>
</table>
### 7.2 Recommended Naloxone dosing regimen

<table>
<thead>
<tr>
<th>Recommended naloxone dosing regimen – (only administered by doctors)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A BNF recommendation in medical setting:</strong></td>
</tr>
<tr>
<td>IM or SC injection)(^6,8) 400 micrograms</td>
</tr>
<tr>
<td>if no response after 1 minute,</td>
</tr>
<tr>
<td>give 800 micrograms</td>
</tr>
<tr>
<td>if still no response after another 1 minute,</td>
</tr>
<tr>
<td>repeat dose of 800 micrograms</td>
</tr>
<tr>
<td>if still no response</td>
</tr>
</tbody>
</table>

Give 2mg (4mg may be required in a seriously poisoned patient), then review diagnosis. Further doses may be required if respiratory function deteriorates\(^1,6\).
7.2.1 Administration of naloxone may be via the intravenous, intramuscular and subcutaneous routes\(^1\). IV has more rapid onset, however it should only be used by staff trained to administer IV. In practice, it may be difficult to find IV access.

7.2.2 Where acute toxicity and the subsequent need for naloxone is established, in most circumstances, a higher dose regimens will be safe and efficacious in reversing the effects of overdose in drug misuse and dependence. However the need for high initial dose treatment as well as its continuation needs to be balanced against the risks of acute withdrawal syndrome and sympathetic excess. The treatment risks need to be considered against the risk of death without naloxone\(^1\).

1.1.1 7.2.3 The intramuscular dose is 400 micrograms initially with further 400 micrograms doses given incrementally every two to three minutes until an effect is noted\(^1\) or the ambulance arrives\(^3\). Doses are injected in the deltoid region or anterolateral thigh\(^4\). Where practicable, the site of injection should be varied for repeated intramuscular doses\(^1,5\). Each dose is given in subsequent resuscitation cycles if the patient is not breathing normally. This is continued until consciousness is regained, breathing is normal or medical assistance is available\(^6\).

7.2.4 A BNF recommendation in medical setting: by intramuscular or subcutaneous injection\(^6,8\), 400 micrograms; if no response after 1 minute, give 800 micrograms, and if still no response after another 1 minute, repeat dose of 800 micrograms; if still no response, give 2 mg (4mg may be required in a seriously poisoned patient), then review diagnosis; further doses may be required if respiratory function deteriorates\(^1,6\).

7.3 Lower initial dose regimen (medical staff only)

7.3.1 Lower initial dose regimens are considered of value where the situation is less immediately life-threatening or where a more controlled effect is desirable, for example palliative care and chronic opioid use. These regimens aim to balance the need to reverse toxicity against the known risks of abrupt reversal. In addition to lower initial dose, they may be characterised by watch and wait periods with slow incremental dose titration to effect.

7.3.2 (In preparing injections, refer to procedure for the safer use of injectable medicines).

7.3.3 If no response is observed after a total of 10 mg of the drug has been administered, the depressive condition may be caused by a drug or disease process not responsive to naloxone\(^7\).

8.0 Ongoing emergency treatment

8.1 Naloxone has a short plasma half-life (1-2hours).
1.2 For both higher and lower initial dose regimens for acute toxicity, continuous titrated use of naloxone may be required and in some cases, a continuous infusion warranted. However such further treatment should be carried out by the emergency services.

9.0 Location of naloxone

9.1 Naloxone 400micrograms/mls mini-jets (5) are located in the emergency medicines bag on each ward. Alternatively, a box of naloxone 400microgram ampoules will be in each emergency bag. There is a spare bag in each emergency drug cupboard. The emergency drug cupboards are located in the ECT suite (in the clinic room) at Highgate Mental Health Centre and Dunkley ward at St Pancras Hospital. A second emergency bag should be obtained as a back-up from a ward or an emergency cupboard. The key for the emergency drug cupboard in the ECT suite is held by the site coordinators. The key for the emergency drug cupboard on Dunkley ward is held by the nurses on the ward.

9.2 Naloxone ampoules 400micrograms (one box of 10 ampoules) are located in each emergency drug cupboard at Highgate Mental Health Centre and St Pancras Hospital.

10.0 Risks and complications with naloxone injection

10.1 The risk of giving too much naloxone includes acute withdrawal from opioids. Vomiting, agitation, shivering, sweating, tremor and tachycardia may occur. Delirium and aggression are relatively common. Vomiting where it affects aspiration may be life-threatening. Acute withdrawal causing sympathetic excess with resistant pulmonary oedema and ventricular arrhythmia are potentially life-threatening. In drug misuse and dependence, life-threatening withdrawal reactions can occur in as many as 1% of cases of naloxone administration (particularly in cases of poly-drug misuse).

10.2 At an individual patient level, conservative regimens may introduce the risk of re-narcosis (given naloxone’s short half-life), particularly where individuals refuse further treatment and/or leave care settings against professional advice. Where possible and considered necessary, the short acting nature of naloxone should be made clear to individuals and the high risk of life-threatening sedation where the antidote wears off explained.

10.3 An effective naloxone dose can vary greatly depending on the opioid or opiate type and the amount ingested or injected. Where overdoses are particularly sizeable, huge doses of naloxone may be required. Where the overdoses are smaller, the required naloxone doses will be too.

11.0 Pregnancy and breastfeeding

11.1 Pregnancy: use only if the potential benefit outweighs risk.

11.2 Breast-feeding: not orally bioavailable.
12.0 Cautions

12.1 Cardiovascular disease or those receiving cardiotoxic medicines (serious adverse cardiovascular effects reported).

12.2 Maternal physical dependence on opioids may precipitate withdrawal in the newborn.

12.3 Pain, physical dependence on opioids (precipitates withdrawal)\(^6\).

13.0 Side effects

13.1 Common or very common: dizziness, headache, hypertension, hypotension, nausea, tachycardia, vomiting\(^6\).

13.2 Uncommon: arrhythmia, bradycardia, diarrhoea, dry mouth, hyperventilation, sweating, tremor\(^6\).

13.3 Rare: seizures\(^6\).

13.4 Very rare: anaphylaxis, cardiac arrest, erythema multiforme, hypersensitivity reactions, pulmonary oedema, ventricular fibrillation\(^6\).

14.0 Reporting opioid overdose incidents

14.1 Suspected opioid overdose incidents should be reported to the duty doctor immediately. Also see under General Principles, section 5.

14.2 Opioid overdose incidents should be reported via datix.

15.0 Dissemination and implementation arrangements

15.1 This document will be circulated to all managers who will be required to cascade the information to members of their teams. It will be available to all staff via the Trust intranet.

16.0 Training requirements

16.1 For training requirements please refer to the trust training policy and the learning and development guide on the Trust intranet at: http://cift-ap02/sorce/

16.2 People being trained in how to respond to opiate overdose, including using any available naloxone should after training be able to demonstrate an understanding of the following:-

- How to identify a suspected opiate overdose.
- When to call 999.
- Rescue breathing, cardiopulmonary resuscitation (CPR) and the recovery position.

9 Guidelines for the use of Naloxone Injection_PHA58_February 2018
• What naloxone is:
  o What it does
  o What it cannot do
  o Its short-acting nature
• Using naloxone:
  o When to administer naloxone
  o How to administer naloxone
  o What dose to give (not volume)
• The importance of staying with a casualty³.

17.0 Review of the policy

2 years. February 2020.

18.0 References

1. UK Medicines Information. Medicines Q&As. What naloxone doses should be used in adults to reverse urgently the effects of opioids or opiate. June 2015.

2. Patient Safety Alert: Stage 2 Resources. Support to minimise the risk of distress and death from in appropriate doses of naloxone. 26th October 2015.


4. Cardiopulmonary resuscitation and the management of the deteriorating patient policy


19.0 Associated documents

• Medicines management policy.
• Procedure for the safer use of injectable medicines.
• Cardiopulmonary resuscitation and the management of the deteriorating patient policy.
### Appendix 1: Individual Group and Responsibilities

<table>
<thead>
<tr>
<th>Individual group</th>
<th>Responsibility</th>
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</table>
| All clinical staff potentially involved in the management of opioid overdose: | Should familiarise themselves with this policy, and should be suitably trained and competent to carry out their professional duties.  
- Staff involved in managing opioid overdoses should have adequate immunisation against hepatitis B. |
| Modern Matrons                         | Modern matrons are responsible for:  
- implementing the guidance across their areas of responsibility.  
- checking with ward managers that staff have attended appropriate training.  
- assessing the competencies of nursing staff to implement the procedures and protocols referred to in the policy. |
| Ward Managers                          | Ward managers are responsible for:  
- the implementation of the policy in the teams they manage, and for the recognition and management of the potential risks of service users  
- ensuring that staff attend training on naloxone every ---- years. |
| Qualified Nurses:                      | Should be suitably trained and competent to assess and manage an opioid overdose.  
- Should be familiar with the risks associated with naloxone and the monitoring required.  
- Should be familiar with the practical use and location on the ward of naloxone, remedial pharmacological agents (oxygen) and monitoring equipment (e.g. pulse oximeters).  
- Assess and document in the notes the patients’ response to naloxone. Should be competent to use the equipment required for monitoring vital signs (e.g. BP machine/sphygmometer, pulse oximeter).  
- Should be trained and competent to use and maintain the techniques and equipment required to undertake cardiopulmonary resuscitation.  
- Should ensure that appropriate emergency equipment (e.g. crash bag) is available and accessible on the ward, and regularly checked.  
- Should ask nursing colleagues and doctors for advice when necessary.  
- Should attend recommended training. |
| Doctors          | Should be suitably trained and competent to assess and manage a potential opioid overdose.  
|                 | • Should be familiar with the risks associated with naloxone, and the monitoring required.  
|                 | • Should prescribe naloxone and document this and the diagnosis in the patients’ notes.  
|                 | • When requested by other staff to see and review a patient suspected to have had an opioid overdose, to attend as soon as possible.  
|                 | • Should be suitably trained and competent to use the techniques and equipment required to undertake cardiopulmonary resuscitation.  
|                 | • Should ask senior colleagues (i.e. the consultant) for advice when necessary. |
| Consultants     | Should be suitably trained and competent to assess and manage an opioid overdose.  
|                 | • Should be available for advice for junior staff regarding an opioid overdose.  
|                 | • Ensure the prescribers in their service adhere to the prescribing requirements in this policy.  
|                 | • Ensure appropriate actions are taken in the event of an adverse incident or suspected medicine reaction. |
| Pharmacy Staff | Ensure there are supplies of naloxone mini-jets stocked and available for the population of each in-patient ward and identified sites; naloxone ampoules in the emergency drug cupboards.  
|                 | • To provide advice regarding the use and administration of naloxone. |
## Appendix 2: Equality impact assessment tool

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1. Does the policy/guidance affect one group less or more favourably than another on the basis of:</td>
<td></td>
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<tr>
<td>Race</td>
<td>No</td>
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<tr>
<td>Ethnic origins (including gypsies and travellers)</td>
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<td>Nationality</td>
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<td></td>
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<tr>
<td>Gender</td>
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<td>Culture</td>
<td>No</td>
<td></td>
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<tr>
<td>Religion or belief</td>
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<td></td>
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<tr>
<td>Sexual orientation including lesbian, gay and bisexual people</td>
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<td></td>
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<tr>
<td>Age</td>
<td>No</td>
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</tr>
<tr>
<td>Disability - learning disabilities, physical disability, sensory impairment and mental health problems</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>2. Is there any evidence that some groups are affected differently?</td>
<td>No</td>
<td></td>
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<tr>
<td>3. If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?</td>
<td>N/A</td>
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<tr>
<td>4. Is the impact of the policy/guidance likely to be negative?</td>
<td>No</td>
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</tr>
<tr>
<td>5. If so can the impact be avoided?</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>6. What alternatives are there to achieving the policy/guidance without the impact?</td>
<td>N/A</td>
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</tr>
<tr>
<td>7. Can we reduce the impact by taking different action?</td>
<td>N/A</td>
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