

# Naloxone Hydrochloride for Inpatient Use:

Guidance for use in acute opioid overdose and opioid induced respiratory depression

## Urgent Action to be taken

- **Step One:** Stop the administration of the opioid
- **Step Two:** Consider administration of naloxone (please read the section on 'important safety information' and then follow the advice given below for the appropriate indication)

## Important safety information

- Doses usually used in acute opioid overdose may not be appropriate for the management of opioid induced respiratory depression and sedation in those patients receiving palliative care and/or chronic opioid use. This is due to potential acute withdrawal syndrome (AWS).
- Particular caution is required when administering naloxone in patients with pre-existing cardiovascular disease or those receiving cardiotoxic drugs as serious cardiovascular effects have been reported
- Too rapid reversal of the opioid effect can cause AWS. Hypertension, cardiac arrhythmias, pulmonary oedema and cardiac arrest have all been described.
- Although the preferred route of administration is intravenous due to its quicker onset of action, the clinical condition and competence of the person administering the medication, may dictate that it be given via a subcutaneous or intramuscular route. For this reason this guidance is based around intramuscular or subcutaneous injection as these will be the likely routes of administration within TEWV.

## Indications for use

**Please note:** The primary aim of treatment is to reverse toxic effects of opiates so that patients are not at risk of respiratory arrest, airway loss or opioid related complications. The aim is not always to restore a normal level of consciousness.

The four main indications for use are listed below. Please click on the relevant link to be taken directly to the guidance:

- [Emergency treatment of opioid overdose in adults](#)
- [Opioid-induced respiratory depression and sedation where full reversal is not desirable](#)
- [Opioid induced respiratory depression in palliative care](#) (where opioids have been established)
- Reversal of postoperative respiratory depression in adults caused by natural and synthetic opioids (**not included in this protocol**).

**The National Poisons Information Service (0844 892 0111) will provide specialist advice on management of opioid toxicity 24hrs a day.**

## Presentation

Naloxone hydrochloride 400 microgram per ml injection (1ml ampoules)

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Drug dosing and regimen			
Indication	Dose and regimen	Instructions for dilution	Method of Administration
<b>Emergency treatment of opioid overdose</b>	<p>By intravenous (preferred route), intramuscular or subcutaneous injection:</p> <ul style="list-style-type: none"> <li>• Initial dose 400micrograms</li> <li>• If no response after 1 minute, give 800 micrograms</li> <li>• If there is still no response after another 1 minute repeat dose of 800 micrograms</li> <li>• If still no response, give 2mg (4mg may be required in a seriously poisoned patient)</li> </ul> <p>Then review diagnosis. Further doses may be required if respiratory function deteriorates.</p> <p><b>For treatment of children please refer to the most recent version of the BNF for dosing advice.</b></p>	No dilution necessary when administering by intravenous or intramuscular injection.	Although the preferred route of administration is intravenous due to its quicker onset of action, the clinical condition and competence of the person administering the medication, may dictate that it be given via a subcutaneous or intramuscular route
<b>Reversal of opioid induced respiratory depression – full reversal not desirable</b>	100microgram of naloxone via intravenous (preferred route), intramuscular or subcutaneous injection at 2 minute intervals, according to response	Dilute 1ml of 400 micrograms/ml naloxone to 4mls using sodium chloride 0.9%. This gives 4mls of solution at a concentration of 100micrograms/ml.	After dilution, give 1ml boluses (100microgram) at 2 minute intervals until the patient is awake with a respiratory rate of 8 breaths /minute or greater. Continue observing sedation scores and respiratory rate every 15 minutes for 1 hour.
<b>Opioid induced respiratory depression in palliative care</b>	20 micrograms via <b>intravenous injection</b> every 2 minutes until satisfactory respiratory status.	Dilute 1ml of 400 micrograms/ml naloxone to 10mls with sodium chloride 0.9%. This gives 10mls of solution at a concentration of 40micrograms/ml.	After dilution, administer 0.5ml (20 micrograms naloxone) by <b>intravenous injection</b> , every 2 minutes until satisfactory respiratory status.

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### Monitoring & Significant Adverse Drug Reactions

- Monitor blood pressure, pulse and respiratory rate.
- Careful monitoring is required as long acting opioids require reversal by naloxone infusion.
- Reversal of buprenorphine toxicity may require large doses of naloxone.

### Other Information

Naloxone is much shorter acting than opioids therefore staff should be aware that symptoms may return.

Naloxone may reverse analgesia with a return of severe pain with hyperalgesia and if physically dependent, severe withdrawal symptoms and agitation.

### References

1. [British National Formulary](#) online accessed 15/10/18
2. SPC for Naloxone: <https://www.medicines.org.uk/emc/product/6344/smpc> – accessed 15/10/19
3. What naloxone doses should be used in adults to reverse urgently the effects of opioids or opiates? Medicines Q&A's, UKMI. [July 2017](#).

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