

Safer practice notice

12



Notice

25 May 2006

Ensuring safer practice with high dose ampoules of diamorphine and morphine

There have been a number of reports of deaths and harm due to the administration of high dose (30mg or greater) diamorphine or morphine injections to patients who had not previously received doses of opiates. This notice promotes safe practice with these medicines. It is not intended to prevent appropriate clinical use in patients who need them.

Risks

The major risks are:

- Packaging of different strengths of diamorphine and morphine ampoules look the same; the outer carton and ampoule labelling are poorly differentiated; and 5mg, 10mg, 15mg, 20mg and 30mg products have similar appearances.
- Higher strength ampoules of diamorphine and morphine (30mg, for example) stored alongside lower strength products (10mg, for example) in clinical areas in both primary and secondary care.
- Insufficient therapeutic training and understanding on the part of the healthcare staff of the risks and precautions when prescribing, dispensing and administering higher doses of diamorphine and morphine injections.

Actions for the NHS

- 1 Risk assess and have procedures for safely prescribing, labelling, supplying, storing, preparing and administering diamorphine and morphine injections.
- 2 Review therapeutic guidelines for the use of diamorphine and morphine injectable products for patients requiring acute care, including post-administration observation of patients who have not previously received doses of opiates.
- 3 Update information concerning the safe use of diamorphine and morphine injectable products as part of an ongoing programme of training for healthcare staff on medication practice.
- 4 Ensure that naloxone injection, an antidote to opiate-induced respiratory depression, is available in all clinical locations where diamorphine and morphine injections are stored or administered.

Immediate action

Action

Update

Information request

Ref: NPSA/2006/12

For response by:

- All NHS organisations

For action by:

- Clinical governance leads and risk managers
- Chief pharmacists and pharmaceutical advisers

The NPSA recommends NHS organisations inform:

- Medical directors
- Directors of nursing
- Medical staff
- Nursing staff
- General practitioners

- Community pharmacists
- Patient Advice and Liaison Services (England)
- Out-of-hours providers, walk in centres, minor injury units, community hospitals, local hospices
- Communication leads

The NPSA has informed:

- Department of Health and Welsh Assembly Government
- Chief executives of NHS organisations in England and Wales
- Chief executives/regional directors, pharmaceutical advisers and clinical

- governance leads of strategic health authorities (England) and regional offices (Wales)
- Advisory Council on the Misuse of Drugs
- Healthcare Commission
- Healthcare Inspectorate Wales
- Medicines and Healthcare products Regulatory Agency
- Market authorisation holders
- NHS Purchasing and Supplies Agency
- Welsh Health Supplies
- Monitor
- Royal colleges and societies
- Royal Association of Intermediate Care

- Association of Palliative Medicine of Great Britain and Ireland
- Macmillan Cancer Relief and Marie Curie Cancer Care
- Joint Royal Colleges Ambulance Liaison Committee
- NHS Direct
- Commission for Social Care Inspection
- Care Standards Inspectorate (Wales)
- Independent Healthcare Forum
- Community Health Councils (Wales)
- National Prescribing Centre
- Quality Improvement Leads in Scotland and Northern Ireland

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Action deadlines for the Safety Alert Broadcast System (SABS)

Deadline (action underway): 31 July 2006

Action plan to be agreed and actions started

Deadline (action complete): 31 October 2006

All actions to be completed

Further information about SABS can be found at:

www.info.doh.gov.uk/sar/cmopatie.nsf

Between 2000 and 2005, seven case reports were published on deaths due to the administration of high dose (30mg or greater) diamorphine or morphine to patients who had not previously received doses of opiates.

Between January and October 2005, the NPSA's National Reporting and Learning System received 16 reports of similar patient safety incidents, two of which resulted in deaths.

Many of these incidents involved diamorphine and morphine 30mg ampoules being selected in error, instead of lower strength ampoules, and resulted in overdoses being administered.

In other incidents, high (30mg or greater) doses of diamorphine and morphine were prescribed as first doses for patients who had not previously received doses of opiates. Doses of diamorphine and morphine are not therapeutically equivalent (diamorphine 30mg = morphine 45mg).¹

Overdose of these opiates can lead to respiratory depression, loss of consciousness and death if support procedures are not implemented.

Further information on the action points

1 Risk assess and have procedures in place for safely prescribing, labelling, supplying, storing, preparing and administering diamorphine and morphine injections.

- Risk assess the strengths of diamorphine and morphine that are stocked in all locations, including GPs' bags, emergency response vehicles and bags held by organisations providing primary care during the out-of-hours periods.² Lower strengths (5mg and 10mg, for example) are required for acute care, and higher strength products (20mg and 30mg, for example) are usually required to prepare medicines for administration through syringe drivers or parenteral infusions.
- Use separate storage locations such as cupboards, shelves, bags or boxes for low strength products used for bolus administration in acute care, and high strength products used to prepare infusions.
- Raise awareness of the similarities of packaging of different strengths of these injectable products.

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- Update multidisciplinary procedures for the safe prescribing, labelling, supplying, storing, preparing and administering of all diamorphine and morphine injections. Where possible, the use of a second person to provide an independent check to confirm the identity of the drug, strength, dose to be administered and expiry date of the diamorphine and morphine product is recommended to help minimise the risk of error.
 - While it is acknowledged that some practitioners work on their own, there are opportunities when supplies of diamorphine and morphine are administered or placed in cupboards and bags, for a check to be made by a second person. Consideration should be given to inviting patients and/or carers to carry out a second check if another healthcare professional is not available.
 - Ensure that diamorphine and morphine ampoules are adequately labelled and differentiated. Unpackaged ampoules should not be stored or transported and should always be placed within a well-labelled outer carton or box.
- 2 Review therapeutic guidelines for the use of diamorphine and morphine injectable products for patients requiring acute care, including post-administration observation of patients who have not previously received doses of opiates.**
- Information should be included in guidelines concerning which product strengths should be stocked and used to prepare the recommended doses. For example, diamorphine 5mg and 10mg ampoules could be used for both bolus administration and patients newly commenced on diamorphine infusions; diamorphine 30mg ampoules could be reserved for patients already receiving diamorphine infusions and who require higher daily doses.
 - Information should be included on procedures for post-administration observation of patients who have received their first dose of diamorphine and morphine injection. For example, patients should be observed for the first hour.
- 3 Update information concerning the safe use of diamorphine and morphine injectable products as part of an ongoing programme of training for healthcare staff on medication practice.**
- As part of training, emphasis should be given to appropriate starting doses and dose titration as well as safe systems for product selection, preparation, administration and monitoring.
- 4 Ensure that naloxone injection, an antidote to opiate-induced respiratory depression, is available in all clinical locations where diamorphine and morphine injections are stored or administered.**
- Supplies of naloxone 400 micrograms in 1ml are required in the same clinical storage locations where diamorphine and morphine injections are stored, including in GPs' bags and bags held by out-of-hours providers.

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Background information

Diamorphine injection is the drug of choice for cardiac pain and palliative care in the national out-of-hours formulary.² However, with the current shortage of diamorphine, guidance has been issued to the NHS about the most appropriate alternatives that are available.³

Ensuring urgent access to palliative care drugs

While it is important to highlight and to provide practical advice to healthcare professionals on how to minimise the risk of overdose with high dose diamorphine and morphine ampoules, it is just as important that healthcare professionals are not discouraged from either carrying, or having access to, controlled drugs (particularly during out-of-hours periods), or from seeking alternative solutions to the long-standing problem of securing proper access to medicines for palliative care patients. A range of suggestions for resolving this problem were set out in the Department of Health's *Securing Proper Access to Medicines in the Out-of-Hours Period*.²

Particular problems exist for the timely supply of medicines to palliative care patients in the community, whose condition can deteriorate or change rapidly. Many of these crises occur during out-of-hours periods and require urgent interventions with appropriate medicines. This makes it especially important that all clinicians have appropriate access to medicines of sufficient strengths (including controlled drugs) and a good understanding of which medicine can be used to best effect.

The National Institute for Health and Clinical Excellence (NICE) guidance⁴ on supportive and palliative care for adults with cancer and the End of Life Care Programme⁵ are appropriate resources to inform this process.

Improving the safety of the labelling and packaging of medicines

The Medicines and Healthcare products Regulatory Agency (MHRA) has agreed changes to the packaging of injectable opiate products which will ensure easier identification of the differing strengths of diamorphine and morphine. High strength products will be separately identified with additional warning statements which will make it easier for staff to tell them apart.

Local health communities should actively promote awareness of this issue, particularly during the transition period, and take necessary steps to minimise the risk of error. Options for separate storage locations together with supporting procedures for out-of-hours providers' bags, palliative care boxes and mobile emergency response vehicles should be explored. For more information see: www.mmnetwork.nhs.uk

Evaluation

To analyse the effect of the recommendations laid out in this safer practice notice, the NPSA will:

- undertake routine monitoring of patient safety incidents involving diamorphine or morphine products reported via the National Reporting and Learning System;
- monitor the introduction of diamorphine and morphine injectable products with improved labelling and packaging intended to help prevent selection errors by having regular contact with the NHS, manufacturers and the MHRA.

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References

- 1 More information about therapeutic equivalence can be obtained from local NHS Medicines Information Services. www.ukmi.nhs.uk
- 2 Department of Health. *Securing Proper Access to Medicines in the Out-of-Hours Period: Guidance for PCTs and Organised Providers*, 2005, London, Gateway 4107. www.mmnetwork.nhs.uk/ooh/ or via a link from www.dh.gov.uk/PolicyAndGuidance/MedicinesPharmacyAndIndustry/fs/en
- 3 Department of Health. *Guidance on use and supply of diamorphine*. 2004/0467. www.dh.gov.uk
- 4 National Institute for Health and Clinical Excellence. *Improving Supportive and Palliative Care for Adults with Cancer*, March 2004. www.nice.org.uk
- 5 End of Life Care Programme. <http://eolc.cbcl.co.uk/eolc>

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Further details

For further details about this safer practice notice, please contact:

Professor David Cousins
Head of Safe Medication Practice
National Patient Safety Agency
4-8 Maple Street
London
W1T 5HD

Tel: 020 7927 9500
Email: david.cousins@npsa.nhs.uk

For more information on the NPSA, visit www.npsa.nhs.uk

For more information about how you can improve patient safety, visit www.saferhealthcare.org.uk – a one stop for knowledge and innovation for safer healthcare.

 A safer practice notice strongly advises implementing particular recommendations or solutions.

This safer practice notice was written in the following context:

It represents the view of the National Patient Safety Agency, which was arrived at after consideration of the evidence available. It is anticipated that healthcare staff will take it into account when designing services and delivering patient care. This does not, however, override the individual responsibility of healthcare staff to make decisions appropriate to local circumstances and the needs of patients and to take appropriate professional advice where necessary.

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