NHS
Quality Improvement Scotland

Best Practice Statement ~ *June 2004*

Postoperative Pain Management

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Introduction

NHS Quality Improvement Scotland (NHS QIS) was set up by the Scottish Parliament in 2003 to take the lead in improving the quality of care and treatment delivered by NHSScotland. NHS QIS does this by setting standards and monitoring performance, and by providing NHSScotland with advice, guidance and support on effective clinical practice and service improvements.

Background to Best Practice Statements

While many examples of clinical guidelines exist there is a lack of reliable statements focusing specifically on nursing and midwifery practice.

The development of best practice statements reflects the current emphasis on delivering care that is patient-centred, cost-effective and fair, and will attempt to reduce existing variations in practice. The common practice that should follow their implementation will allow comparable standards of care for patients wherever they access services.

A series of best practice statements has been produced, designed to offer guidance on best practice relating to specific areas of practice and to encourage a consistent and cohesive approach to care.

Key Principles of Best Practice Statements

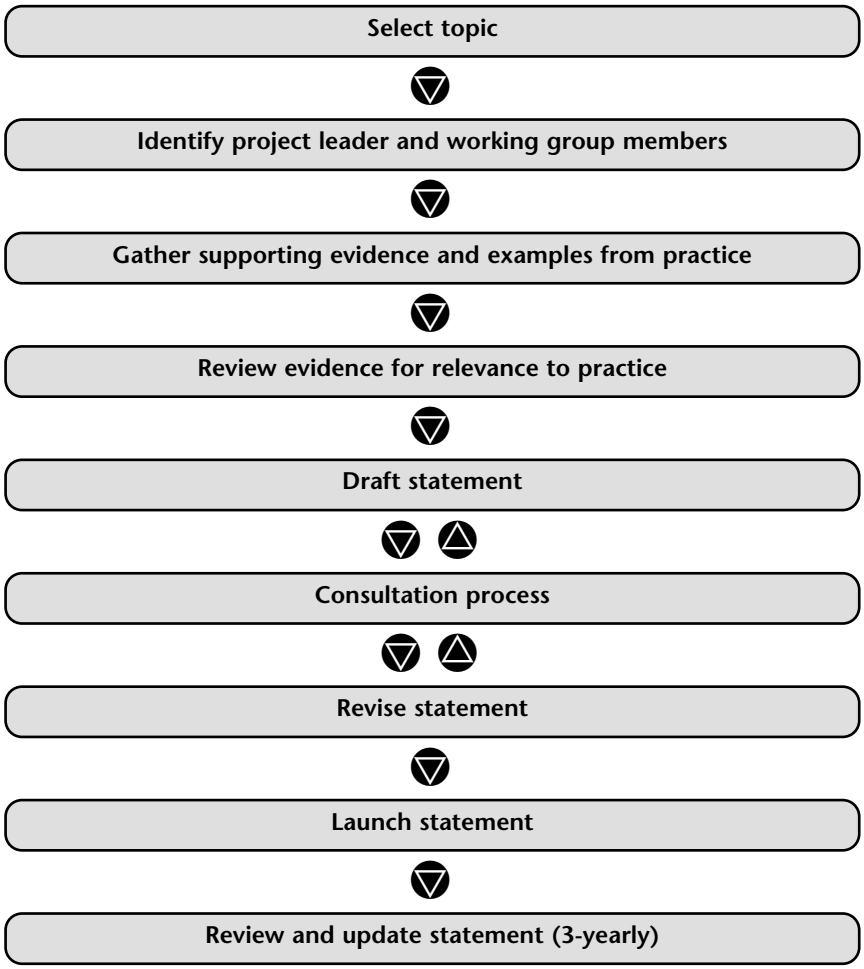
A best practice statement describes best and achievable practice in a specific area of care. The term 'best practice' reflects the commitment of NHS QIS to sharing local excellence on a national level. Best practice statements are underpinned by a number of shared principles below:

- Best practice statements are intended to guide practice and promote a consistent and cohesive approach to care.
- Best practice statements are primarily intended for use by registered nurses, midwives and the staff whom they are supported by, but they may also contribute to multidisciplinary working and be of guidance to other members of the healthcare team.
- Statements are derived from the best available evidence at the time they are produced, recognising that levels and types of evidence vary.
- Information is gathered from a broad range of sources in order to identify existing or previous initiatives at local and national level, incorporate work of a qualitative and quantitative nature and establish consensus.
- Statements are targeted at practitioners, using language that is accessible and meaningful.
- Consultation with relevant organisations and individuals is undertaken.
- Statements will be nationally reviewed and updated every 3 years.
- Responsibility for implementation of statements will rest at local level.
- Key sources of evidence and available resources are provided.

Key Stages in the Development of Best Practice Statements

A systematic process has been followed as outlined below.

The development process began in March 2003 and was led by a working group of clinical nurse specialists supported by a multidisciplinary reference group of clinical and academic staff representing NHS organisations across Scotland.



Best Practice Statement on Postoperative Pain Management

This best practice statement has been developed by a working group of clinical nurse specialists working in acute pain services across Scotland, with support from NHS QIS. A multidisciplinary reference group has advised the working group. The aim of the statement is to offer guidance to nursing and midwifery staff and their colleagues on best practice relating to postoperative pain management. This statement does not address specific drugs used for postoperative pain, nor does it suggest which drugs are most appropriate for postoperative pain management. It is not intended to be a prescriptive document, but to highlight best practice in postoperative pain management. All prescribers should refer to the British National Formulary (BNF) for information on doses, side-effects, drug interactions and more comprehensive information on a wider range of drugs.

All medicines should be administered according to the Nursing & Midwifery Council (NMC) guidelines for the administration of medicines (NMC, 2002).

Following the publication of the *Clinical Standards for Anaesthesia* (NHS QIS, 2003), postoperative pain management was identified as a priority by pain nurse specialists and their colleagues across Scotland. The statement refers to patients of all ages in surgical and day case units, and therefore incorporates paediatric and adult nursing services. Specific challenges and issues relating to the postoperative nursing care of children are presented in Section 11.

The importance of communication between patients and healthcare professionals is paramount to ensuring best practice. It is vital that patients are involved and informed in all aspects of their postoperative pain management. Patients are central to this statement and information provided to them or their carers should be appropriate to their level of understanding.

Use of Evidence in Best Practice Statements

The need to embrace evidence in its broadest sense has been acknowledged by NHS QIS in the development of best practice statements. Best practice statements represent a unique synthesis of research evidence, evidence complemented by audit, patient surveys and evidence derived from expert opinion, professional consensus and patient/public experience.

The process for developing these statements adopts a rigorous, transparent and consistent 'bottom-up' approach to articulating best practice that involves professionals and patients and is based on all types of available evidence.

The following stages describe the process of identifying and reviewing evidence for inclusion in statements:

1. Define question
2. Review evidence from a range of sources including published literature, grey literature and other relevant sources, eg patient groups, manufacturers, professional groups
3. Integrate evidence with patient-related factors, eg issues of access, equity and ethics
4. Develop recommendations
5. Evaluate process and impact of recommendations.

Format of Statement

The statement is divided into 11 sections covering:

1: Key Principles of Postoperative Pain Management
2: Patient Information
3: Postoperative Pain Assessment
4: Subcutaneous Opioid Analgesia
5: Patient-Controlled Analgesia
6: Postoperative Epidural Analgesia
7: Regional Methods of Pain Relief Using Local Anaesthetic
8: Postoperative Nausea and Vomiting
9: Patients with Previous Opioid Exposure
10: Step-Down Analgesia and Discharge Medication
11: Specific Challenges in Managing Postoperative Pain in Children

Each section contains a table corresponding to the what, why and how of best practice, ie summarises the statement, gives a reason for the statement and guidance on how to achieve the statement or how to demonstrate it is currently being achieved. Key points and key challenges relating to the management of postoperative pain are included in each section. Key points highlight the underpinning philosophy of the statement and/or explicit skill requirements to achieve best practice. Key challenges reflect existing examples of best practice and highlight areas that may require attention.

How Can the Statement be Used?

The best practice statement on postoperative pain management can be used in a variety of ways although primarily it is intended to serve as a guide to good practice and to promote a consistent and cohesive approach to care. The statement is intended to be realistic, but challenging and can be used:

- as a basis for developing and improving care;
- to stimulate learning among nursing teams;
- to promote effective interdisciplinary team working;
- to serve as a measure for quality in postoperative pain management; and
- to stimulate ideas and priorities for nursing research.

Who was Involved in Developing the Statement?

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Copies of all NHS QIS publications can also be downloaded from the website (www.nhshealthquality.org).

Section 1: Key Principles of Postoperative Pain Management

Key Points ~

1. *The provision of safe, effective pain management is an issue relating to the quality of healthcare that addresses the needs and expectations of patients (Audit Commission, 1997).*
2. *Education in postoperative pain management is necessary for all healthcare staff involved in the care of patients postoperatively to provide safe and effective care (Twycross, 2002).*
3. *While not all hospitals will have access to a designated acute pain service, wherever anaesthesia is used, a designated consultant anaesthetist should be responsible for acute pain management (Breivik, 2002; Royal College of Anaesthetists, 2003).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Registered nurses* and all other healthcare professionals involved in postoperative pain management have an up-to-date, evidence-based and appropriate understanding of postoperative pain management.	To ensure that all healthcare staff involved in the management of postoperative pain provide safe and effective care for patients.	In-house education programmes incorporate education on postoperative pain management. There is a record of attendance of healthcare staff at postoperative pain management education sessions**. There is documentation of the competencies attained by individual healthcare staff following education on specific aspects of postoperative pain management.

* *It is assumed all nursing staff, including clinical nurse specialists in acute pain management, will maintain individual professional knowledge and competence appropriate to the level at which they are practising (NMC Code of Professional Conduct, 2002).*

** *There are currently no minimum requirements for attendance at pain management education sessions. It is the consensus view of the working group that this should take place on an annual basis.*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Links are developed and maintained between the acute pain service and chronic pain services, palliative care, clinical psychology and drug dependency units, where available.	Collaborating with colleagues from other services can optimise the provision of effective pain management. A seamless system of patient referral will make the patient's journey more comfortable and improve pain management.	Criteria exist for referring patients with postoperative pain to specialist services.
An out-of-hours service is available for advice 24 hours a day.	Individuals can experience pain at any time.	A local out-of-hours service is available on a 24-hour basis. There is information on who to contact for acute pain advice out-of-hours.
The development of clinical guidelines and protocols for postoperative pain management is supported by the acute pain service, where available.	Guidelines and protocols promote safe practice in relation to specific aspects of pain management.	Local guidelines/protocols are available.

Key Challenges ~

1. *Ensuring a consultant anaesthetist session is designated for acute pain on a daily basis.*
2. *Ensuring sufficient staffing levels to provide prospective cover for all acute pain service staff.*
3. *Promoting the participation of acute pain services in a national audit of pain services.*
4. *Developing and implementing benchmarks for postoperative pain services.*

Section 2: Patient Information

Key Points ~

1. *Written information is an important resource for patients (Williamson, 2003).*
2. *Written and verbal communication can reduce postoperative anxiety and pain (Audit Commission, 1998; Waterman et al, 1999).*
3. *Written patient information should be easy to read and understandable (DOH, 2001; Royal College of Anaesthetists, 2003).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Patients have access to both written and verbal information regarding their postoperative pain management prior to admission for elective surgery. Patients undergoing urgent or emergency surgery receive verbal information, as appropriate.	Being prepared will help put the patient in control and enable them to discuss and decide on appropriate options for pain management.	A record is kept of information distributed to patients in the pre-admission period.
Information contains appropriate details of available pain management therapies.	To allow the patient as much choice as possible.	The information available is reviewed regularly and updated accordingly.
Information is available to all patient groups.	Patients who depend on alternative methods of communication should have access to information, eg patients who have a first language other than English have the information conveyed via an interpreter. Patients who are visually impaired should have the information conveyed via large print/Braille/audio cassette.	A range of information material is available to patients. Information is available in a format suitable for all patient groups.

Key Challenges ~

1. *Ensuring information is available to all patients in a format appropriate to their individual needs.*
2. *Involving patients in the development of information booklets (Lack, 2003).*

Section 3: Postoperative Pain Assessment

Key Points ~

1. *All patients have their pain assessed, recorded and treated. Where possible, patients actively participate in this process (NHS QIS, 2003).*
2. *Pain assessment is measured and documented with all other vital signs.*
3. *Pain is assessed at rest and also during activity, depending on patient (JCAHO, 2001).*
4. *Understanding the subjective nature of pain is essential to effective pain management.*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Registered nurses and midwives understand the subjective nature of pain. Registered nurses and midwives are aware of the range of pain assessment tools available and use appropriate tools for each patient.	To allow care to be planned and tailored to the individual needs of the patient.	Pain assessment tools are used to allow the patient to be involved in the assessment of their pain.
Following initial pain assessment, subsequent assessment is carried out with the same regularity as the observation of other vital signs. Pain should be assessed following nursing and other healthcare intervention(s).	Ongoing assessment of the individual's pain experience is necessary to assess the efficacy of treatment. Pain is dynamic in nature and will be affected by the patient's physical activity, health and psychological status. Previous or ongoing experience of pain will impact on the individual's current experience and tolerance level.	There is documented evidence of: • ongoing pain assessment and pain management interventions. • changes made to treatment and interventions on the basis of the individual's pain experience.
Any increase and/or change in the nature of pain are investigated further.	A sudden increase in pain or unexpected high levels of pain may indicate the development of a new condition or complication which will require further investigation.	Criteria exist for ongoing intervention or referral to additional or alternative services. There is documented evidence that any changes in pain experience, care delivery or treatment have been discussed with the patient. Patient information relating to pain state, care delivery or type of treatment is readily available.

Key Challenges ~

1. *Ensuring that the need for analgesia is reviewed regularly based on pain assessment.*
2. *Ensuring access to, and use of, a range of appropriate pain assessment tools in the clinical areas.*

Section 4: Subcutaneous Opioid Analgesia

Key Points ~

1. *Many patients fear needles and injections (Oates et al, 1994).*
2. *Patients have expressed a strong preference for the subcutaneous (SC) route of administration (Semple et al, 1997).*
3. *SC injections using a plastic cannula reduce the likelihood of needle-stick injuries associated with repeated intramuscular (IM) injections (MacIntyre & Ready, 1996).*
4. *Absorption profiles are similar between SC and IM routes of administration (Ronald et al, 1993; Cooper, 1996; Vijayan, 1997).*
5. *The use of a dedicated cannula for SC administration of opioid-only analgesia is strongly recommended.*
6. *The use of an opioid algorithm has been shown to be more effective than 'as required' analgesia (Harmer & Davies, 1998; Munro et al 1998).*
7. *Adjuvant analgesia may be of benefit.*
8. *Subcutaneous opioid analgesia is not suitable for all patients (see Appendix 1).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Registered nurses and midwives understand the benefits of administering analgesia via the SC route.	Patients prefer analgesia to be administered via the SC route rather than the IM route.	Availability of local guidelines on SC analgesia administration in all clinical areas. Registered nurses and midwives adhere to local guidelines on SC analgesia administration.
Registered nurses and midwives demonstrate competency in the use of local SC analgesia guidelines. All patients receiving SC opioid analgesia are assessed.	To ensure that patient safety is maximised. To ensure that patients receive regular analgesia. To ensure safe and effective analgesia.	Availability of locally developed nursing competencies. There is documented evidence of assessment of the patient's: pain; sedation score; respiratory status; postoperative nausea and vomiting; and cannula site.

Key Challenges ~

1. *Ensuring that all patients suitable for SC analgesia have SC analgesia prescribed and a SC cannula inserted.*
2. *Using a needle-less system of cannulation wherever possible.*

Section 5: Patient-Controlled Analgesia

Key Points ~

1. *Patient-controlled analgesia (PCA) refers to the administration of a drug(s), usually an opioid +/- anti-emetic, which is infused from a mechanical or electronic device via the operation of a patient-controlled handset to provide analgesia (Walder et al, 2001).*
2. *PCA usually refers to drug administration via the intravenous route (MacIntyre, 2001).*
3. *PCA is usually used for patients for whom opioid requirements are likely to be high, or where parenteral analgesia will be required for over 24 hours (Etches, 1999).*
4. *All staff, involved in the care of patients using PCA, should have education and training on all aspects of PCA(Etches, 1999; Taverner, 2003).*
5. *The use of opioids may be associated with sedation, a low respiratory rate, nausea and confusion (MacIntyre, 2001; Walder et al, 2001).*
6. *Adjuvant analgesia can have an opioid-sparing effect (Etches, 1999).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
The decision to provide PCA postoperatively is taken following discussion with the patient, where possible (Chumbley et al, 2003).	To involve the patient in the decision-making process.	There is documented evidence that discussion with the patient has taken place and an explanation of the need for PCA has been recorded.
The patient is given a verbal and written explanation of PCA and given the opportunity to ask questions regarding its use.	Explanation of PCA helps the patient derive maximum benefit.	If possible, a pre-operative demonstration of the PCA handset is provided and written information is available.
The patient is advised to report inadequate analgesia.	Inadequate analgesia may indicate a problem with the PCA. Additional/alternative analgesia may be needed.	There is documented evidence that the efficacy of PCA has been assessed using patient accounts of their pain.

Section 5: Patient-Controlled Analgesia (continued)

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Registered nurses and midwives understand the indications and contraindications of PCA and the associated patient observations and device management (Appendix 2).	To ensure the provision of safe and effective analgesia.	All staff responsible for the management of patients receiving PCA will have demonstrated competency in this area. There is documentation of the competencies of PCA following appropriate training. Guidelines containing advice on potential problems and interventions for adverse effects relating to PCA will be available in clinical areas.
Frequent and informed observation of patients using PCA systems is carried out by nursing staff. Registered nurses and midwives understand the potential for adverse effects from PCA (Appendix 2) and the interventions that may be required.	Frequent observation by nursing staff assesses the patient's ability to use the PCA device satisfactorily and monitors for adverse effects.	Observations are carried out in accordance with local guidelines and the needs of the individual patient (Appendix 2).
A designated single device and standard drug solution is recommended. The use of an anti-siphon valve/anti-reflux valve on extension sets is strongly recommended.	To reduce the potential for user error. These devices reduce the risk of drug solution siphoning to the patient and being transported up an intravenous fluid extension set.	Pain service personnel - where there is a designated acute pain service - will influence pharmaceutical policies and the purchasing of devices and extension sets.
Prior to the discontinuation of PCA an alternative form of analgesia is prescribed and administered, when appropriate.	The provision of step-down analgesia ensures patients do not have unnecessary pain.	Step-down analgesia is available prior to discontinuation of PCA. Guidelines for step-down analgesia are available.

Key Challenges ~

1. *Ensuring that all patients are provided with jargon-free, easily understood information materials regarding PCA.*
2. *Providing education for staff using PCA by acute pain staff or appropriately qualified personnel.*
3. *Providing mandatory device training for all device users*
4. *Developing local guidelines/policies including information regarding whom to contact for advice.*
5. *Reviewing PCA guidelines regularly to reflect new evidence and the results of audit.*
6. *Ensuring that the decision to discontinue PCA is made following individual assessment and not according to specific time frames.*

Section 6: Postoperative Epidural Analgesia

Key Points ~

1. *Epidural analgesia refers to the administration of a drug into the epidural space to provide analgesia (Pasero, 2003).*
2. *The use of a combination of local anaesthetic and opioids together may improve analgesia compared to either agent used alone (Rawal, 1999; Breivik, 2002).*
3. *Postoperative epidural analgesia may provide improved pain control for patients undergoing major abdominal surgery compared to intravenous patient-controlled analgesia (Paulsen et al, 2001; Steinberg et al, 2002; Flisberg et al, 2003).*
4. *All staff involved in the care of patients receiving epidural analgesia should have education in all aspects of epidural analgesia (Bibby, 2001; Breivik, 2002).*
5. *Epidural analgesia may be associated with adverse effects (Appendix 3) (Breivik, 2002).*
6. *Adjuvant analgesia may be of benefit with epidural analgesia (Jin & Chung, 2001; Breivik, 2002).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
The decision to provide epidural analgesia postoperatively is made by an anaesthetist with the patient's consent. The patient is given a verbal and written explanation of epidural analgesia (NHS QIS, 2003) and given the opportunity to ask questions regarding its use.	To increase the patient's understanding of epidural analgesia.	There is documented evidence that the patient has received an explanation of epidural analgesia.
The patient is advised to report pain/inadequate analgesia while receiving epidural analgesia.	Inadequate analgesia may indicate a problem with the epidural device. Additional/alternative analgesia may be needed.	Assessments of efficacy of analgesia will be undertaken, documented and acted upon.
Registered nurses and midwives understand the indications and contraindications of epidural analgesia and associated patient observations and device management (Appendix 3).	To ensure the provision of safe and effective analgesia.	All staff responsible for the management of patients receiving epidural analgesia will have demonstrated competency in this area. There is documentation of the competencies achieved following epidural analgesia training.

Section 6: Postoperative Epidural Analgesia (continued)

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Frequent and informed observation of patients receiving epidural analgesia is carried out by nursing staff. Registered nurses and midwives understand the potential for adverse effects from the epidural (Appendix 3) and the interventions that may be required.	Intervention for adverse effects will be prompt and appropriate as per local guidelines. To ensure safe administration of epidural analgesia.	Observations are carried out in accordance with local guidelines and the needs of the individual patient (Appendix 3). Guidelines containing advice on potential problems and adverse effects relating to epidural analgesia are made available in clinical areas. Documentation takes cognisance of current recommendations pertaining to infusion systems and medical devices.
A patent intravenous cannula is in situ throughout epidural analgesia administration.	To allow rapid action in the case of an adverse event.	All patients receiving epidural analgesia have intravenous cannula sited.
A designated single device, administration set and standard drug solution is strongly recommended.	To reduce the potential for user error.	Information on equipment is sought from pain service staff.
Prior to the discontinuation of epidural analgesia an alternative form of analgesia is prescribed and administered.	The provision of step-down analgesia ensures that patients do not experience unnecessary pain.	A prescription for step-down analgesia is available prior to discontinuation of epidural analgesia.
All patients receiving postoperative epidural analgesia have dose and timing of drug thromboembolism prophylaxis adjusted, as appropriate.	Drugs given for deep venous thrombosis prophylaxis may increase the risk of epidural haematoma at the time of epidural catheter insertion or removal.	There is a local protocol for deep venous thrombosis prophylaxis in the perioperative period in keeping with the SIGN guideline, Prophylaxis of Venous Thromboembolism (SIGN, 2002).

Key Challenges ~

1. *Ensuring that all patients are provided with jargon-free, easily understood information materials regarding epidural analgesia.*
2. *Providing competency-based education and training where an acute pain service exists.*
3. *Identifying appropriately qualified personnel who can provide education for staff looking after patients receiving epidural analgesia where there is no acute pain service.*
4. *Providing mandatory device training for device users.*
5. *Developing local guidelines that contain information about where help can be sourced. Reviewing guidelines regularly to ensure that they reflect new evidence and feedback from audit.*
6. *Ensuring that epidural analgesia lines are colour coded and do not include injection ports.*
7. *Ensuring that epidural analgesia is discontinued on an individual basis, and not according to specific time frames.*

Section 7: Regional Methods of Pain Relief Using Local Anaesthetic

Key Points ~

1. *Local anaesthetics are a group of compounds that produce reversible local analgesia (McQuay et al, 1988; Arner et al, 1990).*
2. *Nerve blocks with local anaesthetics include topical, local infiltration, nerve block, plexus block, regional block, wound infiltration and continuous neural blockade using catheters (Dahl et al, 1994; NHMRC, 1998).*
3. *Any continuous regional anaesthetic technique requires appropriate training and management for staff in the clinical areas.*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Registered nurses and midwives demonstrate an understanding of the drug used in infusions, dosages and care of the nerve block catheters.	To promptly identify any adverse effects of local anaesthetic agents or catheter/drug-related incidents.	Local guidelines are available at a clinical level. Regular audits are undertaken to ensure local guidelines are implemented.
Regional methods of analgesia are accompanied by appropriate documentation.	To ensure patient safety.	All documentation adheres to local policy.
Prior to the discontinuation of the regional method of analgesia, an alternative form of analgesia is prescribed and administered.	The provision of step-down analgesia ensures that patients do not have unnecessary pain.	A prescription for step-down analgesia is available prior to discontinuation of regional method of analgesia.

Key Challenges ~

1. *Providing patients and staff with appropriate information regarding local anaesthetic methods.*
2. *Developing local policies/guidelines on local anaesthetic nerve block catheters.*
3. *Providing in-service training for all staff involved in the care of patients receiving local anaesthetics.*
4. *Using a designated infusion device for local anaesthetic agents.*

Section 8: Postoperative Nausea and Vomiting

Key Points ~

1. *Postoperative nausea and vomiting (PONV) is a distressing and embarrassing experience and is of concern to the patient (Macario et al, 1999).*
2. *There have been considerable variations in reported rates of PONV (Kenny, 1994; Quinn et al, 1994; Koivuranta et al, 1997).*
3. *PONV can have serious consequences: unplanned hospitalisation; delayed discharge; wound dehiscence; oesophageal tear/rupture; aspiration; dehydration; metabolic disturbance; and increased pain (Gold et al, 1989; Fortier et al, 1998).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Registered nurses and midwives demonstrate an understanding of the multiple risk factors, complications and multi modal treatment of PONV.	There are many risk factors thought to contribute to PONV. Anti-emetic drugs act on different parts of the vomiting centre. In some cases a variety of anti-emetics may be required.	PONV is included within in-service education on pain management. Local guidelines for management of PONV are available at a clinical level.
Registered nurses and midwives assess PONV and record the findings and act, if necessary, on those findings.	The rate of PONV is variable and affected by many factors. Many patients expect to have nausea and do not wish to complain. If nausea is detected and treated early, vomiting may be prevented. A record of assessment may improve communication between staff as well as between staff and patients. To monitor the effect of any anti-emetic drugs administered.	A record of PONV assessment is kept on the observation chart. Administration of anti-emetic drugs and their effect are recorded.
Prompt treatment of PONV is based on initial assessment. Re-assessment is carried out to assess the effect of treatment.	PONV is distressing and can lead to complications (Key Point 3). One type of anti-emetic may be ineffective.	Guidelines for the treatment of established PONV are available in clinical areas.

Key Challenges ~

1. *Assessing and recording PONV in all postoperative patients.*
2. *Ensuring local practice guidelines are in place to treat established PONV.*

Section 9: Patients with Previous Opioid Exposure

Key Points ~

1. *Patients are exposed to opioids for a variety of reasons, eg acute pain, chronic pain, cancer pain, or substance abuse disorders.*
2. *Long-term exposure to opioids can lead to an increased tolerance of their analgesic effects (Doverty et al, 2001a; 2001b) and a decreased tolerance to pain (McCaffery & Pasero, 1999).*
3. *Increased levels of analgesia may be required to manage pain in patients with a history of long-term opioid exposure (Stacey et al, 1990).*
4. *Postoperative analgesia doses should be calculated carefully based on existing analgesia doses, if available, as standard postoperative protocols may not be appropriate, for example in chronic or cancer pain.*
5. *Patients with previous opioid exposure should be referred to an acute pain services, where available, who should link with palliative care/chronic pain or drug addiction agencies as appropriate for the individual patient.*
6. *Multi-modal analgesic methods are useful for patients previously exposed to opioids (Jage & Bey, 2000).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Registered nurses and midwives demonstrate an understanding that patients with previous opioid exposure may have higher analgesic requirements.	To ensure adequate analgesia for the patient.	Education sessions on pain management include the needs of patients with previous opioid exposure.
Patients with previous opioid exposure are referred to an acute pain service.	These patients may have specific analgesic requirements. Patients may be less tolerant to pain and the effects of opioid analgesia, therefore multi-modal methods and analgesics may be more effective.	Criteria exist for referral to an acute pain service.
Nurses liaise with other professionals in chronic and cancer pain, as well as specialists in addiction medicine, if available.	Due to the effects of previous opioid exposure this group of patients may have more complex needs.	There is documented evidence of referrals and the reason for referral.

Key Challenges ~

1. *Developing and maintaining strong communication links between all those involved in the individual's care.*
2. *Further research is required to strengthen the evidence base on how to manage postoperative pain in patients with a history of opioid exposure.*
3. *Challenging staff in relation to negative attitudes towards patients who have a history of substance abuse.*

Section 10: Step-Down Analgesia and Discharge Medication

Key Points ~

1. *Patients often experience inadequate pain control after discharge from day surgery or ambulatory surgery (Beauregard & Pomp, 1998; Rawal et al, 1997; Bain et al, 1999; McHugh & Thoms, 2002).*
2. *Adequate analgesia improves patients' pain control in the community after day surgery procedures (Marquardt & Razis, 1996).*
3. *There is a risk of increased pain if adequate step-down analgesia is not prescribed and dispensed.*
4. *Inadequate pain control after discharge or surgery causes distress for the patient and has consequences for acute and primary care settings, eg delayed discharge, unplanned hospitalisation and increased workload for GP and community services (Chung & Mezei, 1999; Coley et al, 2002; Mitchell, 2003).*

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Step-Down Analgesia: Registered nurses and midwives understand the principle of step-down analgesia.	To ensure that all patients have safe and adequate pain control whilst in hospital.	Guidelines on step-down analgesia in the clinical area are available. In-service education on step-down and discharge analgesia is provided.
Discharge Analgesia: Following surgery all patients are discharged with adequate analgesia appropriate to the level of pain they are likely to feel at home. This includes major as well as day care surgery.	To ensure that patients have safe and effective pain control at home.	Guidelines on discharge analgesia in the clinical area are available.
The patient is given verbal and written instructions on how to take their analgesia, together with information about possible side-effects.	To ensure patients understand the importance of pre-emptive analgesia. To prevent unnecessary distress in the patient as a result of side-effects or inadequate pain control.	There is documented evidence that written information is provided for patients on discharge.

Key Challenges ~

1. *Developing local policies/guidelines for step-down and discharge analgesia.*
2. *Ensuring that information and contact details are provided in written form, if further advice is required.*

Section 11: Specific Challenges in Managing Postoperative Pain in Children

The term 'children' is used throughout this section, but the term includes all ages from birth to 16 years of age.

In paediatric practice, all care should be family-centred with the involvement of parents/carers/siblings. Where the age or cognitive ability of the child dictates, the parent/carer will be the child's advocate.

Pain management in children requires the administration of appropriate doses of balanced analgesia, along with the use of non-pharmacological approaches involving the multidisciplinary team. The involvement of a play specialist is strongly recommended.

Patient Information

- Good pre-operative preparation of the child and family can help to reduce fear and anxiety.
- Parents require good information to allow them to understand their role in helping their child with pain (Simons et al, 2001).
- Child-friendly format of information can be available for all children, taking into account age and cognitive ability. These can be in photograph, picture or text format.

Postoperative Pain Assessment

Pain assessment in children includes:

- The use of a validated tool that is age and developmentally appropriate.
- The use of the tool should combine the child's self-report with the child's and the health professional's assessment (Woodgate & Kristjanson, 1995).
- Behavioural pain assessment tools should be used to assess pain in small children and infants.
- Tools are available for children with developmental delay (Hunt et al, 2001). When these tools are not available the parent/carer is the best interpreter of the child's pain.
- Guidelines/policies require to be available, allowing the health professional to take appropriate action to manage the child's pain.

- Following assessment and administration of analgesia, re-assessment is essential.
- A pain history along with documentation of the child's own words for pain are obtained on admission (RCN, 1999).

Postoperative Pain Service

Patient-Controlled Analgesia and Administration of Morphine

- Although it has been demonstrated that children as young as 5 years of age can effectively use patient-controlled analgesia (PCA) (Lehr & BeVier, 2003), each child requires to be assessed individually, prior to surgery. This is to ensure that they have the understanding, cognitive ability and motor skills required to use PCA effectively.
- Younger children, and those where the use of PCA would be inappropriate (physical handicap or developmental delay), will require a continuous intravenous infusion of opioid.
- In children, bolus administration, PCA or infusion of opioid requires the dose to be calculated on an individual weight basis.
- In paediatric practice, anti-emetics are not routinely added to the opioid infusion/PCA. Instead, regular appropriate paediatric doses of anti-emetics are prescribed and administered (Olutoye & Watcha, 2003).
- In some paediatric centres, younger children are managed with nurse-controlled analgesia (NCA). This will require competency-based staff education (Beesley, 2004).
- All children require close observation and monitoring by appropriately educated competent staff. Neonates and young infants are particularly susceptible to the sedationary/respiratory effects of opioids (Lawson, 1998).
- Protocols for monitoring children receiving opioids will be in place in all wards nursing children following major surgery (Lawson, 1998).
- Some children will benefit from a continuous background infusion alongside their bolus PCA. Each child requires to be assessed on an individual basis by the pain management team or the anaesthetist prior to and immediately post surgery (Yildiz et al, 2003).

Epidural Analgesia

- It is normal practice for epidural catheters to be sited in children after the induction of anaesthesia.
- Neonates and young infants are particularly susceptible to the side-effects of local anaesthetics. All children, however, receiving an epidural infusion, require to be appropriately observed and monitored according to hospital/area protocols.
- All nursing staff involved in the care of these children require to have undergone a paediatric competency-based training in the safe management of the child with an epidural catheter in situ for postoperative pain management.
- Audit of practice should be ongoing (Williams & Howard, 2003).

Regional Methods of Analgesia

- Topical local anaesthetic preparations to provide cutaneous anaesthesia prior to venepuncture or cannulation are available for all children over one month of age (Arrowsmith & Campbell, 2000). They are very effective in removing the pain of cannulation or venepuncture and their use is to be recommended at all times. They do not remove the anxiety associated with venepuncture/cannulation so distraction should be encouraged either by a play specialist or parent/carer.
- The administration of local anaesthetic blocks in children undergoing surgery is now common practice, allowing a reduction in immediate postoperative analgesia requirement. It is especially useful in day surgery and is to be recommended.

Subcutaneous Morphine

- Children in the postoperative period are more frequently managed by intravenous infusion/PCA/NCA than by intermittent/continuous infusion of subcutaneous opioid.
- Staff nursing children requiring the administration of a subcutaneous opioid should have education to increase their knowledge and awareness of situations where this route would be inadvisable/contraindicated, ie hypovolaemia or where there has been a significant fluid compartment shift, eg major abdominal surgery, burns (Wolf et al, 1995).

Patients with Previous Opioid Exposure

- Children should be referred to a specialist paediatric pain team.
- Neonates born to drug-dependent mothers require multidisciplinary management in their postoperative period.

Step-Down Analgesia and Discharge Medication

- Following day case surgery, the parent requires appropriate information concerning the effective administration of analgesia following discharge from hospital.
- All step-down and discharge analgesia in children should be titrated to the individual needs of the child. This will depend on the type of procedure/surgery they have undergone.
- The development of care pathways for children undergoing surgery can assist in ensuring that adequate appropriate analgesia is prescribed and administered by the use of multidisciplinary documentation (Johnson et al, 2000).
- The development of 'patient group directions' can allow nurses to supply and administer appropriate discharge analgesia.
- The development and use of step-down and discharge analgesia guidelines are to be recommended. Staff should be aware that these are only guidelines and do not replace individual titration of analgesia.
- Following day case surgery, the parent requires appropriate information concerning the effective administration of analgesia following discharge from hospital (Jonas, 2003; Kankkunen, 2003).

In order to monitor the effectiveness of analgesic techniques in children, regular audit of all aspects should be undertaken.

Appendix 1: Subcutaneous Opioid Analgesia

Indications

- Trauma / patients awaiting theatre / acute pain
- Postoperative patients (intermediate or minor surgery where patient-controlled analgesia (PCA) is not indicated)
- Confused patients
- Patients with poor venous access
- Any patient where intramuscular (IM) analgesia is not suitable (ie needle phobia)
- Any patient who is requiring frequent IM analgesia
- Patients with a coagulopathy.

Contraindications

- Patients who are shocked / hypotensive / dehydrated
- Patients with poor peripheral circulation
- Patients with oedema or poor skin condition
- Any patient allergic to opioids.

Observations

- Sedation level[1]
- Respiratory rate
- Oxygen saturation
- Pain assessment
- Nausea
- Blood pressure
- Pulse
- Cannula insertion site.

1. Sedation level is a better predictor of respiratory depression than respiratory rate.

Adverse Effects

- Increased sedation
- Respiratory depression
- Nausea
- Pruritis
- Urine retention
- Hallucinations / confusion
- Stinging at insertion site if opioid administered too quickly.

In the following patients, caution should be exercised, and dosage of drug may need to be reduced:

- Elderly patients
- Patients with renal impairment
- Patients with liver failure
- Head injury patients.

Appendix 2: Patient-Controlled Analgesia

Indications

- Requirement for parenteral analgesia
- Patients with a high opioid requirement
- Unpredictable opioid requirements.

Contraindications

- Patient / carer refusal
- Cognitive impairment
- Inability to operate the handset
- Untrained medical and nursing staff
- Extremes of age.

Observations

- Sedation level
- Respiration rate
- Oxygen saturation
- Blood pressure: invasive / non-invasive
- Heart rate / pulse
- Pain assessment
- Nausea
- Pruritis
- Inspection of infusion site
- Infusion device checks.

Adverse Effects

- Increased sedation
- Respiratory depression
- Nausea
- Pruritis
- Urine retention
- Hallucinations / confusion.

In the following patients, caution should be exercised, and dosage of drug may need to be reduced:

- Elderly patients
- Patients with renal impairment
- Patients with liver failure
- Head injury patients.

Appendix 3: Epidural Analgesia

Indications

- Major surgery
- High risk patients.

Contraindications

- Patient refusal
- Untrained staff
- Coagulopathy
- Local or systemic sepsis
- Hypovolaemia / dehydration
- Mechanical difficulty with insertion
- Neurological deficit.

Observations

Frequency should be dictated by local guidelines and the needs of the individual patients.

- Blood pressure: invasive / non-invasive
- Heart rate / pulse
- Sedation level
- Respiratory rate
- Oxygen saturation
- Pain assessment
- Assessment of sensory level
- Assessment of motor block
- Nausea
- Pruritis
- Inspection of epidural insertion site
- Infusion of device checks.

Appendix 3: Epidural Analgesia (continued)

Adverse Effects

- Hypotension
- Bradycardia
- Increased sedation
- Respiratory depression
- Extensive sensory block
- Extensive motor block
- Local anaesthetic toxicity
- Nausea
- Urine retention
- Pruritis
- Possible increased risk of pressure sores
- Hallucinations
- Epidural abscess or haematoma[2].

In the following patients, caution should be exercised, and dosage of drug may need to be reduced:

- Elderly patients
- Patients with renal impairment
- Patients with liver failure
- Head injury patients.

2. Indications of an abscess or haematoma include - increasing or unexplained leg weakness, severe back pain, unexplained increase in temperature.

Glossary of Terms

anaesthesia	Loss of feeling or sensation. This can be anaesthesia of a limited area of the body (local anaesthesia), or the whole body (general anaesthesia). Different drugs and techniques are required for each type of anaesthesia.
analgesia	Pain relief.
anti-emetic	A medicine that prevents or alleviates nausea and vomiting.
anti-reflux valve	A valve which prevents back flow of a drug.
aspiration	Inhalation of stomach contents into the lungs.
bradycardia	An abnormally slow heart rate.
cannula	See cannulation.
cannulation	Insertion of a special hollow tube (cannula) into a blood vessel. The tube contains a sharp pointed solid core which facilitates its insertion and is withdrawn when the cannula is in place.
chronic pain	Pain following an episode of tissue damage which persists past the time when healing is expected to be complete.
cognitive impairment	A reduced ability to think, learn or make decisions.
dehiscence	Where the stitched edges of a surgical wound become parted.
epidural	Administration of drugs via a catheter into the epidural space to provide analgesia.
guidelines	Systematically developed statements, which guide clinical practice.
hypotension	Abnormally low blood pressure.
intravenous	Medication entering the body by way of a vein.
local anaesthetic	Local anaesthetics are a group of compounds that produce reversible local analgesia to selected areas of the body.

motor block	The blockade of large motor fibres resulting in decreased mobility.
multi-modal analgesia	Pain relief provided by more than one drug. The drugs act in different ways. This reduces the amount of each individual drug required and enables better analgesia to be provided, with a reduction in the frequency of side-effects.
neonates	Infants in their first 4 weeks after birth.
nerve block	The use of local anaesthetic drugs to block the passage of pain impulses from the nerve.
neural blockade	Interruption of the progress of nerve impulses.
neurological deficit	Any abnormal neurological condition.
NHS QIS	See NHS Quality Improvement Scotland.
NHS Quality Improvement Scotland (NHS QIS)	NHS Quality Improvement Scotland is a statutory body, established as a Special Health Board in January 2003. Its role is to focus on improving the quality of patient care and the health of patients. It will have a particular emphasis on the quality of care and the patient journey for vulnerable groups. Website: www.nhshealthquality.org
Nursing and Midwifery Practice Development Unit (NMPDU)	NMPDU was set up in December 1999 in response to theWhite Paper 'Designed to Care' (1997). The overall aim of the Unit was to ensure that practice/role is taken Developmentforward across Scotland in a consistent and cohesive way, so that benefits gained from new practice in one area can be easily identified and shared within the profession. On 1 January 2003, NMPDU was merged with four other clinical effectiveness bodies to create NHS Quality Improvement Scotland. See NHS Quality Improvement Scotland.
opioid	Drugs used in the treatment of pain.
opioid sparing	Substances which complement the pain-relief effects of medication but which also reduce the quantities of opioids required.
paediatric	Relating to childhood.

paediatric	The general medicine of childhood. medicine
palliative care	Palliative care is the active total care of patients and their families by a multi-professional team when the patient's disease is no longer responsive to curative treatment.
patient-controlled analgesia	Where the patient controls a pump delivering pain relieving drugs.
peripheral circulation	The system, which circulates blood to the extremities including the skin.
postoperative	Occurring after a surgical procedure.
previous opioid administration	Patients who have had previous regular exposure of opioids.
pruritis	Where irritation of sensory nerve endings leads to localised or more general itching.
regional analgesia	Where a part of the body has its ability to sense pain temporarily removed through a series of localised injections of analgesic.
sedation score	A means of assessing the conscious level of a patient and how easy it is to wake them.
step-down analgesia	A reduced level of analgesia.
subcutaneous	Under the skin.
thromboprophylaxis	Treatment to prevent blood clots forming.
wound infiltration	Where drugs are injected into the wound.

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Our Commitment

Our work will be undertaken in line with the following values:

- **patient and public focus**
  - promoting a patient-focused NHS that is responsive to the views of the public

- **independence**
  - reaching our own conclusions and communicating what we find

- **partnership**
  - involving patients, carers and the public in all parts of our work
  - working with and supporting NHS staff in improving quality
  - collaborating with other organisations such as public bodies, voluntary organisations and manufacturers to avoid duplication of effort

- **evidence-based**
  - basing conclusions and recommendations on the best evidence available

- **openness and transparency**
  - promoting understanding of our work
  - explaining the rationale for our recommendations and conclusions
  - communicating in language and formats that are easily accessible

- **quality assurance**
  - aiming to focus our work on areas where significant improvements can be made
  - ensuring that our work is subject to internal and external quality assurance and evaluation

- **professionalism**
  - promoting excellence individually and as teams and ensuring value for money in the use of public resources (human and financial)

- **sensitivity**
  - recognising the needs, opinions and beliefs of individuals and organisations and respecting and encouraging diversity

This document can be viewed on the NHS Quality Improvement Scotland website. It is also available, on request, from NHS Quality Improvement Scotland in the following formats:

- Electronic
- Audio cassette
- Large print

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