

Clinical Standards ~ *July 2003*

Anaesthesia

Care Before, During and After Anaesthesia

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Contents

1. Introduction	2
2. Background on NHS Quality Improvement Scotland	3
3. Background on Clinical Standards - Basic Principles	6
4. Development of the Clinical Standards for Anaesthesia	8
5. Membership of the Anaesthesia Project Group	9
6. Overarching Principles	10
7. An Introduction to Anaesthesia	12
8. Evidence Base for the Clinical Standards for Anaesthesia	16
9. Clinical Standards for Anaesthesia	23
10. Glossary of Terms	48

1. Introduction

This document introduces NHS Quality Improvement Scotland's *Clinical Standards for Anaesthesia*. These standards were developed in partnership with the Scottish Board of the Royal College of Anaesthetists (RCA) and apply to specific elements of the service. They include sections on:

- Organisation of Anaesthesia Services
- Preoperative Care
- Intraoperative Care
- Postoperative Care

The standards will be used by NHS Quality Improvement Scotland to assess performance in these areas in Trusts¹ throughout Scotland where anaesthesia services are provided.

The initial sections of this document provide background information on NHS Quality Improvement Scotland and on the process used to develop the standards (Sections 2 and 3 respectively).

The development of the *Clinical Standards for Anaesthesia* is outlined in Section 4, and the membership of the Project Group undertaking this work is given in Section 5. The overarching principles guiding development of the standards are provided in Section 6.

Section 7 provides basic information about anaesthesia, and the evidence underpinning the standards is presented in Section 8.

Section 9 contains the *Clinical Standards for Anaesthesia*.

Finally, Section 10 provides a glossary of terms used in the standards.

¹ For simplicity, the term 'Trust' is used in this document to refer to all relevant NHS organisations, whilst acknowledging that Trusts are being dissolved. During 2003, the move to abolish Trusts in order to create a single health planning and delivery body in each Board area will accelerate (Two NHS Boards, NHS Borders and NHS Dumfries & Galloway, had already unified by April 2003). The term 'Trust' is retained temporarily in NHS QIS publications to cover this transition phase. Where unification has occurred, the term 'Trust' signifies an operating division of the local NHS Board.

2. Background on NHS Quality Improvement Scotland

NHS Quality Improvement Scotland was established as a Special Health Board on 1 January 2003 as a result of bringing together the Clinical Resource and Audit Group (CRAG), Clinical Standards Board for Scotland (CSBS), Health Technology Board for Scotland (HTBS), Nursing and Midwifery Practice Development Unit (NMPDU) and the Scottish Health Advisory Service (SHAS).

The purpose of NHS Quality Improvement Scotland is to improve the quality of healthcare in Scotland by setting standards and monitoring performance, and by providing NHSScotland with advice, guidance and support on effective clinical practice and service improvements.

A part of this remit is to develop and run a national system of quality assurance of clinical services. Working in partnership with healthcare professionals and members of the public, NHS Quality Improvement Scotland sets standards for clinical services, assesses performance throughout NHSScotland against these standards, and publishes the findings. The standards are based on the patient's journey as he or she moves through different parts of the health service. A wide range of diseases and services are at present being addressed, including infection control, vascular services and specialist palliative care.

Project Groups

For each service in the work programme, NHS Quality Improvement Scotland appoints a project group comprising appropriate healthcare professionals and members of the public to:

- oversee the development of, and consultation on, the standards;
- recommend an external peer review process; and
- report on its findings to the NHS Quality Improvement Scotland Board.

As part of their rolling programme, individual project groups ensure that the standards are regularly evaluated and revised so that they remain relevant and up to date (reflecting new procedures and treatments). They also ensure that targets of achievement are raised as performance improves.

Development of Standards

The way in which standards are developed is a key element of the quality assurance process. Groups working on behalf of NHS Quality Improvement Scotland are expected to:

- adopt an open and inclusive process involving a wide range of both members of the public and professional people through a variety of mechanisms;
- work within NHS Quality Improvement Scotland policies and procedures; and
- test standards through undertaking pilot reviews to ensure that they meet the principles of NHS Quality Improvement Scotland.

In addition to standards for specific services or conditions, generic clinical governance standards have been set which apply to all clinical services.

Review

The framework for the NHS Quality Improvement Scotland review process is as follows:

- once the standards have been finalised, each relevant Trust/service is asked to undertake a self-assessment of its service against the standards;
- a review team visits the Trust/service on behalf of NHS Quality Improvement Scotland to follow up this self-assessment exercise with an external peer review of performance in relation to the standards; and
- NHS Quality Improvement Scotland reports the findings for the Trust/service, based on the self-assessment exercise and on the external peer review.

Peer review teams are multidisciplinary, including both healthcare professionals and members of the public. All teams are led by an experienced clinician and are supported by staff from NHS Quality Improvement Scotland.

All the processes being developed are subject to review and evaluation, and this will help NHS Quality Improvement Scotland improve its quality assurance system.



Further Information

For further information about NHS Quality Improvement Scotland, or to obtain additional copies of these standards, please contact:

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Copies of all NHS Quality Improvement Scotland publications can also be downloaded from the website (**www.nhshealthquality.org**).

3. Background on Clinical Standards - Basic Principles

The standards set by NHS Quality Improvement Scotland are:

- focused on clinical issues and include non-clinical factors that impact on the quality of care;
- written in simple language;
- based on evidence (recognising that levels and types of evidence will vary);
- written to take into account other recognised standards and clinical guidelines;
- clear and measurable;
- achievable but stretching;
- developed by healthcare professionals and members of the public;
- consulted on widely;
- published on paper and electronically (on the Internet); and
- regularly reviewed and revised to make sure they remain relevant and up to date.


Some standards are common to all clinical services, others specific to particular conditions.

Format of Standards and Definition of Terminology

All standards set by NHS Quality Improvement Scotland follow the same format:

- each standard has a **title**, which summarises the area on which that standard focuses;
- this is followed by the **standard statement**, which explains the level of performance to be achieved;
- the **rationale** section provides the reasons why the standard is considered to be important; and
- the standard statement is expanded in the section headed **criteria**, which states exactly what must be achieved for the standard to be reached.

As already mentioned, NHS Quality Improvement Scotland aims to set standards that are **achievable but stretching**. This is reflected in the criteria. Most criteria are **essential**, in that it is expected that they will be met wherever a service is provided. Other criteria are **desirable**, in that



they are being met in some parts of the service and demonstrate levels of quality which other providers of a similar service should strive to achieve. Each project group is responsible for determining which criteria are essential and which are desirable.

The criteria are numbered for the sole reason of making the document easier to work with, particularly for the assessment process. The numbering of the criteria is not a reflection of priority. The distinction between 'essential' and 'desirable' is the only way in which criteria have been prioritised.

Generic Clinical Governance Standards

As mentioned earlier in this document, generic clinical governance standards have been developed which apply to clinical services generally.

Copies of the generic clinical governance standards are available on request from NHS Quality Improvement Scotland or can be downloaded from the website (www.nhshealthquality.org).

4. Development of the Clinical Standards for Anaesthesia

The *Clinical Standards for Anaesthesia* were produced as a result of collaboration between NHS Quality Improvement Scotland and the Scottish Board of the Royal College of Anaesthetists (RCA). The RCA is the professional and advisory body overseeing the education and qualifications of anaesthetists within the UK. The RCA reviews anaesthetic service provision as part of the visits it carries out to hospitals to assess the quality of training provided for doctors training to be anaesthetists.

In order to address this, initial discussions between representatives of NHS Quality Improvement Scotland and the Scottish Board of the RCA agreed the scope of the standards. They also agreed how the NHS Quality Improvement Scotland peer review process would relate to other review processes in the field of anaesthetics, including the training reviews carried out by the RCA. It was evident that some work was necessary to pull together the available guidelines and evidence base for anaesthesia, and to identify key indicators of anaesthesia quality.

A consultant anaesthetist was appointed to carry out preparatory work prior to the establishment of a project group. This included carrying out a review of existing guidelines and available evidence. Summaries of the literature reviewed were produced, which identified key areas of anaesthesia that could be used as a basis for setting standards. These documents were in due course presented to the Project Group and helped to shape and focus the discussions during Project Group meetings.

In consultation with the RCA, a project group was appointed, comprising healthcare professionals and members of the public, to draft the clinical standards for anaesthesia. The membership of the Project Group is given in Section 5. The experience of the Project Group members reflects the multidisciplinary teamworking required in the provision of an anaesthesia service. The Project Group first met in January 2002 to draft clinical standards for anaesthesia. Following publication of these draft standards, a period of public consultation was held, during which two open meetings were organised in Glasgow and Aberdeen in November and December 2002. Pilot visits were also carried out in March and April 2003 across two Trust sites to ensure that the standards were set at the right level and could be applied successfully in practice.

The Project Group considered all comments received during the consultation period and pilot peer review process and met again in April 2003 to revise the standards. Many of the points raised were incorporated into the final version of the standards.

The standards produced by the Group focus on key elements that have a direct impact on the quality of care a patient receives before, during and after anaesthesia.

5. Membership of the Anaesthesia Project Group

The membership of the Anaesthesia Project Group, chaired by Professor Gavin Kenny, Professor of Anaesthesia and Head of Department, University Department of Anaesthesia, Glasgow Royal Infirmary, is presented below:

Name	Title	NHS Board Area/Organisation
Miss Libby Campbell	Director of Nursing and Quality	Lothian
Ms Susan Chapman	Principal Pharmacist - Surgery	Forth Valley
Dr John Colvin	Consultant in Anaesthesia and Intensive Care Medicine	Tayside
Dr Malcolm Daniel	Consultant in Anaesthesia and Intensive Care/Clinical Advisor to NHS Quality Improvement Scotland	Greater Glasgow
Mrs Sue Kinsey	Lay Representative	Grampian
Dr Fiona Knox	Consultant Anaesthetist	Grampian
Mr Steve McIntosh	Lead Nurse - Anaesthesia	Tayside
Dr Jenifer Meek	Consultant Anaesthetist	Fife
Mrs Karen Murray	Divisional Director	Argyll & Clyde
Professor Ian Power	Professor of Anaesthesia, Critical Care & Pain Medicine	University of Edinburgh
Mr John Richards	Consultant Breast & Vascular Surgeon/Clinical Sub Dean	Lanarkshire
Mrs Linda Sharratt	Lay Representative	Dumfries & Galloway
Mr John Simmons	Portfolio Manager	Audit Scotland
Mr James Steers	Consultant Neurosurgeon	Lothian
Dr Paul Wilson	Consultant Anaesthetist	Ayrshire & Arran

Dr Rod Muir, Consultant in Public Health Medicine, Information and Statistics Division (ISD), also provided advice to the Project Group.

The NHS Quality Improvement Scotland Board member specifically working with the Anaesthesia Project Group is The Very Reverend Graham Forbes.

Support from NHS Quality Improvement Scotland was provided by Ms Jan Warner (Interim Director, Standards and Reviews), Mr Sean Doherty (Review Team Manager), Mrs Fiona Russell (Senior Project Officer) and Miss Josephine O'Sullivan (Project Administrator).

6. Overarching Principles

As mentioned in Section 2, NHS Quality Improvement Scotland uses generic standards of care that underpin all clinical services provided by NHSScotland.

There are also a number of key points that should be noted in order to interpret and apply the *Clinical Standards for Anaesthesia*, namely:

- The standards are evidence-based and have been developed in consultation with many people across Scotland. They represent what are considered to be key elements of care and treatment for patients undergoing anaesthesia to enable an operation or procedure to be performed.
- The need for multidisciplinary teamworking across disciplines is emphasised in the generic standards and reflected throughout the *Clinical Standards for Anaesthesia*.
- Anaesthetists are involved in the care of two out of every three patients admitted to hospital. The work of anaesthetists involves not only providing anaesthesia for patients having operations or procedures, but also the provision of care for patients admitted to intensive care units. Anaesthetists also work with patients with long-term debilitating pain (chronic pain). Within this phase of standard setting, the Project Group agreed to concentrate on the provision of anaesthesia care for patients having operations or procedures. The current standards do not focus on intensive care or chronic pain practice. These areas may be taken forward by NHS Quality Improvement Scotland in the future.
- Anaesthetists are involved with patients at many points in their journey of care through hospital and in different areas within a hospital. Anaesthetists provide:
 - preoperative assessment of patients either at the time of admission to hospital or at separate preoperative assessment clinics before hospital admission;
 - care at all elective and emergency procedures requiring an anaesthetic;
 - analgesia for women giving birth and anaesthesia at Caesarean section operations;
 - pain relief and anaesthesia of patients with major trauma in accident and emergency departments;
 - sedation or anaesthesia for some patients undergoing radiology or radiotherapy procedures;
 - anaesthesia for psychiatric patients having electroconvulsive therapy; and

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- organisation of the provision of pain relief to patients after an operation or procedure, through involvement in an acute pain service.
 - The standards have been developed to be applicable to all areas of anaesthetic practice. Standards applicable to only particular areas of anaesthesia subspecialty practice have not been developed.
 - The Anaesthesia Project Group recognised the special needs of children in hospital. Reference has been made in the relevant standards to documents detailing the additional requirements when providing care to children. In the future, NHS Quality Improvement Scotland will review the care of children in hospitals.
 - The RCA has made recommendations that trainee anaesthetists must always use anaesthetic machines with antihypoxia devices, and capnography on all occasions tracheal intubation is performed. The RCA Charter limits these recommendations to trainee anaesthetists. The Anaesthesia Project Group agreed these recommendations improved patient safety and **were equally applicable** to consultant and non-consultant career-grade anaesthetists.
 - The Anaesthesia Project Group focused entirely on care within an acute hospital setting. The term 'patients' rather than 'people' has been used to reflect the fact that the standards focus on the care of people in hospital.
 - The Project Group recognised the importance of control of healthcare associated infection (HAI) in all aspects of patient care. Standards were produced by the Clinical Standards Board for Scotland on *Infection Control* and *Cleaning Services*, and are being taken forward by NHS Quality Improvement Scotland. The *Clinical Standards for Anaesthesia* should be read in conjunction with these. These standards are also available on the NHS Quality Improvement Scotland website (www.nhshealthquality.org).

7. An Introduction to Anaesthesia

Anaesthesia is the branch of medicine that provides pain relief and cares for patients before, during and after an operation or other procedure (eg radiology procedures). In the UK, anaesthesia is provided by a medically qualified doctor. All anaesthesia care provided in the UK is either by a consultant anaesthetist, or under the supervision of a consultant anaesthetist, by a non-consultant career-grade anaesthetist or an anaesthetist in training.

Until the mid-1800s, surgery was only used as a last resort, and the few surgical operations performed were very basic. Apart from alcohol and opium, there was no other anaesthetic in use. The discovery of safe anaesthesia was an essential step in the development of modern surgery.

The first successful demonstration of anaesthesia, where the patient inhaled a vapour called ether, took place at the Massachusetts General Hospital, Boston, in 1846. News of the advance spread quickly across the Atlantic and, before the end of the year, this method of anaesthesia had been used successfully for operations in both Scotland and England. Following the introduction of ether, further inhalation agents were brought into use. James Young Simpson, Professor of Midwifery in Edinburgh, first used chloroform anaesthesia on himself and several friends in the dining room of his home in November 1847. He then successfully administered chloroform to a woman in childbirth. The provision of chloroform anaesthesia for pain relief during childbirth gained wider acceptance following its administration to Queen Victoria in 1853.

The practice of anaesthesia has developed considerably over the last 150 years because:

- anaesthetists' knowledge and understanding of how to care for patients having an anaesthetic and surgical or other procedure have improved considerably;
- better and safer anaesthetic drugs are available; and
- the development of monitoring devices, to aid close observation of patients both during and after the anaesthetic, has further increased patient safety.

What Do Anaesthetists Do?

The role of an anaesthetist is to:

- assess patients before their procedure(s);
- provide anaesthesia;

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- monitor and support organ functions during procedures; and
 - provide continuing care immediately after procedures, including provision of pain relief.

Preoperative Care

Preoperative care is provided before an anaesthetic. It is important for the anaesthetist to know as much as possible about the patient, as the anaesthetic and operation can affect the function of various organs. The anaesthetist is responsible not only for the anaesthetic, but also for the patient's care during an operation. The anaesthetist will want to know about the patient's general health, whether the patient has had an anaesthetic before and how it affected them, other medical conditions the patient may have, what drugs are being taken and if there are any known drug allergies. The anaesthetist will provide patients with information about the types of anaesthesia and postoperative pain relief available.

Why Do Anaesthetists Sometimes Delay Operations?

Anaesthetics are extremely safe within the UK because of the high level of knowledge and training of anaesthetists. There is, however, always a small risk with any procedure. If there is a problem with a patient's general health that increases the risk of complications, it may be better to delay the operation and correct the underlying problem if possible, rather than place the patient at increased risk. In general, it is important that a patient is in the best possible health before the anaesthetic and operation take place.

Intraoperative Care

Intraoperative care is provided from induction of, through to immediate recovery from, anaesthesia. The type of operation planned and general health of the patient affect the choice of type of anaesthesia. There are three basic types of anaesthesia:

1. General Anaesthesia requires anaesthetic drugs to be given either by injection into a vein, or as gases breathed into the lung. Although general anaesthesia is often referred to as 'going to sleep', the effect of these drugs on the brain is quite different from that of sleep. The brain usually processes sensations by sending electrical impulses between a series of nerve cells. When anaesthetic drugs are given, nerve cells are prevented from transmitting the electrical impulses between cells. General anaesthetic drugs act on nerve cells in the brain to produce unconsciousness.

2. Regional Anaesthesia involves the injection of local anaesthetic drugs around a group of nerves. The local anaesthetic stops the nerves conducting sensations, and prevents the sensations reaching the brain. After this type of anaesthetic has been given, the area of anaesthesia produced may be some distance from where the drug was injected.

The most common forms of regional anaesthesia are spinal and epidural anaesthesia, which involve injection of anaesthetic drugs at a particular area in the back to affect nerves close to the spinal cord. Spinal anaesthesia involves a single injection of local anaesthetic. Epidural anaesthesia requires a fine tube, called a catheter, to be left in place through which further injections or an infusion of anaesthetic drugs can be given. Drugs can also be given down the epidural catheter after the operation to provide continuing pain relief in the postoperative period.

3. Local Anaesthesia is the injection of local anaesthetic directly beneath the skin in the area that is to be made numb. The area of anaesthesia produced is where the drug has been injected.

During general and regional anaesthesia the anaesthetist remains with the patient at all times. The anaesthetist monitors how the patient is responding during both the anaesthetic and the operation. When a general anaesthetic is given, the dose administered will be carefully adjusted to keep the patient unconscious for the duration of the procedure.

The anaesthetist will also monitor, evaluate and regulate lung, heart and kidney function during the operation. The use of monitoring equipment assists in this careful process of observation and has further increased the safety of anaesthesia. The equipment available includes machines to measure heart rate, blood pressure, the amount of oxygen in the blood, and the amount of carbon dioxide breathed out from the lungs. The equipment used depends on the complexity of the operation. Complex operations need more detailed monitoring.

Postoperative Care

The anaesthetist's responsibilities extend into the period after an anaesthetic and include the provision of pain relief. Immediately after the anaesthetic, the patient is cared for in a recovery area. During this time, patients are monitored closely until they are fully conscious and able to return to the ward, or home if they have been a day-case admission.



The Anaesthesia Team

Anaesthetists are supported in their work by other members of the healthcare team.

Information is gathered to allow an assessment of fitness of the patient for both the anaesthesia and the operation. At preoperative anaesthesia assessment clinics, nurses may be involved as part of the assessment process. Preoperative tests can be carried out and the results collected before the anaesthetist sees the patient. Preoperative assessment is carried out by an anaesthetist. These steps help minimise the risk of operations being delayed. Preoperative anaesthesia assessment clinics provide an opportunity to give further information to the patient and increase understanding of the planned anaesthesia care.

In theatre, the anaesthetist is helped by an anaesthetic assistant, who may be a nurse or an operating department practitioner. The assistant helps in the organisation of care required by the patient.

In the immediate postoperative period, the patient is cared for in a recovery area, until they are fully conscious and stable and able to be transferred to another ward area or home if day-surgery is being carried out. During this time, trained recovery staff closely monitor the patient and provide assessment and provision of pain relief.

In most hospitals there is an acute pain service, the members of which provide postoperative pain management. The members of the acute pain service supervise the management of an individual patient's postoperative pain relief. The acute pain service also provides continuing education and support for the other ward-based staff who may be involved in the monitoring and provision of pain relief.

The standards of care for patients receiving an anaesthetic have improved significantly over recent years. The clinical standards that follow are designed to support the process of continued improvement in anaesthetic care.

8. Evidence Base for the Clinical Standards for Anaesthesia

The *Clinical Standards for Anaesthesia* reflect the patient's journey of care. The following references apply to four main areas in which standards have been developed:

- Organisation of Anaesthesia Services
- Preoperative Care
- Intraoperative Care
- Postoperative Care

Existing guidelines and evidence to support practice in these areas were reviewed by the clinical advisor. Summaries of the key areas were presented to the Anaesthesia Project Group, and formed the basis for setting the standards. The Royal College of Anaesthetists (RCA) and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) produce guidelines on issues affecting anaesthetists or anaesthesia. The databases of other guideline development organisations, such as the Scottish Intercollegiate Guideline Network (SIGN), and the other international anaesthesia organisations were searched for additional relevant guidelines. Further searching was carried out on electronic library databases using standard techniques. The annual reports of the Scottish Audit of Surgical Mortality (SASM) were also reviewed.

Each guideline and piece of evidence was considered for its validity, importance, and clinical applicability, based on the recommendations of previously published guides^{1,2}. A grade of recommendation was made for each guideline or piece of evidence according to current standards³, and the clinical importance of each recommendation⁴ was also noted.

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Postoperative Care

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9. Clinical Standards for Anaesthesia

STANDARD 1 - Organisation of Anaesthesia Services

STANDARD 2 - Preoperative Care

STANDARD 3 - Intraoperative Care

STANDARD 4 - Postoperative Care

STANDARD 1 ~ Organisation of Anaesthesia Services

Standard Statement	Rationale
<p>1.1 Induction of Staff All new members of the anaesthesia team undergo an induction process.</p> <p>1.2 Audit and Education There is a programme of audit and educational activity.</p> <p>1.3 Matching Anaesthetists' Skills to Patient Needs Each patient receives care from an anaesthetist of the appropriate training and grade for the intended procedure.</p>	<p>All new members of staff undergo an induction process to orientate them to the working and organisation of the department of anaesthesia and hospital⁶.</p> <p>A programme of continuing education and professional development should be provided for all clinical staff.</p> <p>The review of clinical practice through audit is a well-established means of promoting the quality of clinical care by identifying shortfalls in performance against standards and best practice.</p> <p>Routes into the audit cycle include: individual case reports of morbidity or mortality, critical incident reporting, reviews of clinical practice, and assessment of patients' attitudes about the anaesthetic service^{7,8}.</p> <p>All services provided in the NHS are under the supervision of a consultant⁹.</p> <p>The annual reports of the Scottish Audit of Surgical Mortality and the National Confidential Enquiry into Perioperative Deaths highlight the need for trainee anaesthetists to involve and discuss the management of complex cases with consultant anaesthetists^{5,10,11}.</p>

Criteria

Essential

1.1.1 A formal and documented induction process is compulsory for all members of the anaesthesia team, which covers the information recommended in the Association of Anaesthetists of Great Britain and Ireland *Risk Management* and Clinical Negligence and Other Risks Indemnity Scheme *Human Resources, Initial/Continuing Staff Competence* documents.

Essential

1.2.1 There is dedicated time for audit and education meetings.

1.2.2 There are regular anaesthesia morbidity and mortality reviews.

1.2.3 There is a system for reporting, analysing and acting on critical incidents.

Desirable

1.2.4 There is systematic multidisciplinary audit.

1.2.5 Patients' attitudes and comments about the anaesthetic service are included in the audit process.

Essential

1.3.1 There is a local protocol to define when non-consultant anaesthetists should request consultant advice and help.

1.3.2 There is an explicit mechanism to identify and contact the supervising consultant for each patient.

STANDARD 1 ~ Organisation of Anaesthesia Services (continued)

Standard Statement	Rationale
<p>1.4 Anaesthetic Assistance The presence of a trained and dedicated anaesthetic assistant for the anaesthetist is available at all times.</p>	<p>There is expert opinion that safe administration of anaesthesia cannot be carried out single-handedly^{12,13,14}.</p>
<p>1.5 Anaesthetic Record Sheet The hospital anaesthetic record contains the data listed in the minimum anaesthesia data set.</p>	<p>A minimum anaesthesia data set has been developed by the Royal College of Anaesthetists and Association of Anaesthetists of Great Britain and Ireland^{5,8}.</p> <p>An accurate anaesthetic record enables the patient to receive effective continuing care, enables the healthcare team to communicate effectively, allows another doctor or professional member of staff to assume care of the patient at any time, and enables the patient to be identified without risk or error^{5,8,10}.</p>
<p>1.6 Access to Emergency Theatre There is adequate daytime emergency theatre resource to accommodate the hospital's emergency and urgent workload.</p>	<p>The availability of daytime emergency theatre resource reduces the need to use out-of-hours services for anything other than the true emergency patient^{10,14}.</p>



Criteria
<p>Essential</p> <p>1.4.1 All nurses and operating department practitioners assisting the anaesthetist are trained to a level at least equivalent to the Scottish Vocational Qualification Level III in Operating Department Practice.</p> <p>1.4.2 There is a dedicated trained anaesthetic assistant present for all procedures requiring the presence of an anaesthetist.</p> <p>Essential</p> <p>1.5.1 The anaesthetic record provides space to record the data listed in the minimum data set.</p> <p>1.5.2 The supervising consultant anaesthetist is recorded on the anaesthetic record sheet.</p> <p>1.5.3 The anaesthetic record contains space to record the explanation of anaesthesia techniques and material risks as laid out in the Consent to Anaesthesia standard (2.2).</p> <p>Essential</p> <p>1.6.1 There is dedicated provision of adequate daytime theatre resource to accommodate the hospital's emergency and urgent workload.</p>

STANDARD 1 ~ Organisation of Anaesthesia Services (continued)

Standard Statement	Rationale
<p>1.7 Efficient Use of Anaesthetic Resources There is efficient use of anaesthetic staff and theatre resources.</p>	<p>The management of an anaesthesia service includes co-operation with surgical and theatre services to make best use of resources¹⁴.</p>
<p>1.8 Maintenance of Anaesthetic Equipment Anaesthetic and monitoring equipment undergo regular maintenance and replacement.</p>	<p>Regular maintenance of anaesthetic and monitoring equipment reduces the risk of equipment breakdown.</p> <p>The lifespan of a piece of equipment depends on its design, how often and how carefully it is used and maintained¹⁵.</p> <p>Technological advances may require premature replacement of equipment that is rendered obsolete.</p>
<p>1.9 Use of Anaesthetic Equipment All anaesthetic staff receive formal and documented instruction in the use of anaesthetic and monitoring equipment.</p>	<p>Instruction promotes correct use of anaesthetic and monitoring equipment¹⁵.</p>

Criteria

Essential

- 1.7.1 The anaesthesia service has a strategy to keep session cancellations to a minimum.
- 1.7.2 Advance notice of planned staff absences is provided, allowing theatre sessions to be covered or rescheduled.
- 1.7.3 Where appropriate, anaesthesia staff from unused surgical sessions are reallocated to sessions lacking an anaesthetist.

Desirable

- 1.7.4 A proportion of career-grade anaesthetists are contracted to provide some fixed flexible sessions, to cover for absences.

Essential

- 1.8.1 There is regular maintenance of anaesthetic and monitoring equipment.

Desirable

- 1.8.2 There is a planned equipment replacement programme that defines equipment lifespan and disposal procedures.

Essential

- 1.9.1 All anaesthetic staff receive formal and documented instruction on the use of equipment.
- 1.9.2 Instruction manuals for equipment are easily accessible and read by users.

STANDARD 1 ~ Organisation of Anaesthesia Services (continued)

Standard Statement	Rationale
<p>1.10 The Acute Pain Service Each hospital has a multidisciplinary acute pain service.</p>	<p>An acute pain service provides education of staff and patients, specialised methods of pain relief, guidance to improve traditional methods of pain relief, standardisation of pain assessment techniques and pain management protocols, and advice on acute pain problems.</p> <p>There is a consensus of expert opinion that multidisciplinary pain teams provide better pain relief and improved patient outcomes^{16,17,18}.</p>



Criteria
Essential
1.10.1 There is a multidisciplinary acute pain service.
1.10.2 There is a named consultant, with a designated sessional commitment, responsible for management of the acute pain service.
1.10.3 The acute pain service provides continuing education of hospital staff and patients.
1.10.4 There is cover for the acute pain service on a 24-hour basis.
Desirable
1.10.5 There is liaison between the acute and chronic pain services.
1.10.6 There is audit of the safety and efficacy of analgesic therapies to promote continuous quality improvement.

STANDARD 2 ~ Preoperative Care

Standard Statement	Rationale
<p>2.1 Preoperative Information All patients are provided with easily understood information on anaesthesia and perioperative care before admission to hospital.</p>	<p>Information helps patients make informed choices, which can reduce anxiety and encourage participation in recommended treatment^{5,7,19,20,21}.</p>
<p>2.2 Consent to Anaesthesia All patients have an entitlement to receive information regarding medical treatment, and a right to give or withhold consent to treatment.</p>	<p>The right to give or withhold consent is a basic principle of healthcare and a fundamental right^{19,22,23}.</p>
<p>2.3 Preoperative Anaesthetic Assessment All patients are assessed by an anaesthetist before an operation requiring the services of an anaesthetist.</p>	<p>The anaesthetist is uniquely qualified to assess anaesthetic risk, to contribute to the overall decision to proceed or defer anaesthesia and surgery, and to implement methods to reduce perioperative risk.</p> <p>In-patients are frequently admitted on the day of major surgery. The provision of a preoperative screening and assessment service improves efficiency and enhances patient care.</p> <p>This process is facilitated when nursing and other trained staff screen patients according to agreed protocols²⁴.</p>

Criteria

Essential

2.1.1 All patients undergoing elective procedures are provided with jargon-free, easily understood information materials (covering anaesthesia and postoperative pain relief) before admission to hospital.

2.1.2 Patients undergoing urgent or emergency surgery receive verbal information.

Desirable

2.1.3 There is audit of the effectiveness of preoperative information provided to patients.

Essential

2.2.1 The anaesthetic techniques to be used and material risks associated with the procedure are discussed with the patient and recorded on the anaesthetic record.

2.2.2 When a patient lacks the capacity to make some or all decisions for themselves because of mental disorder or inability to communicate because of physical disability, the principles outlined in the *Adults with Incapacity (Scotland) Act 2000* are followed.

Desirable

2.2.3 There is audit of documentation in the anaesthetic record of anaesthetic techniques and material risks which have been discussed with the patient.

Essential

2.3.1 All patients are assessed by an anaesthetist preoperatively.

2.3.2 Opportunity for preoperative assessment by the anaesthetist is provided in the patient care pathway.

2.3.3 Where there is nurse-led preoperative screening, this is guided by local protocol.

2.3.4 Where patients attend a dedicated preoperative anaesthetic assessment clinic, an anaesthetist is present.

Desirable

2.3.5 The anaesthetist who is to give the anaesthetic visits the patient before the operation.

2.3.6 Prior to undergoing a procedure that includes anaesthesia, the patient or the GP provides the anaesthetist with a written record of the patient's current medication.

STANDARD 2 ~ Preoperative Care (continued)

Standard Statement	Rationale
<p>2.4 Preoperative Fasting</p> <p>All patients are fasted from solids and fluids immediately prior to anaesthesia, according to a locally agreed protocol.</p>	<p>For safety reasons patients should not eat or drink immediately prior to anaesthesia to minimise the risk of regurgitation and aspiration. It is recognised, however, that prolonged fasting is uncomfortable for patients, and in some patients can result in dehydration. Fasting from fluids should therefore be minimised to what is appropriate.</p> <p>There is a consensus of expert opinion for a preoperative fasting period of:</p> <ul style="list-style-type: none"> • 6 hours for solid food, infant formula, or other milk. • 4 hours for breast milk. • 2 hours for clear non-particulate and non-carbonated fluids²⁵.

Criteria

Essential

2.4.1 There is a locally agreed hospital policy based on the American Society of Anesthesiologists' <i>Practice Guideline for Preoperative Fasting</i>
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2.4.2 The locally agreed policy takes account of the need for continuation of regular drug therapy, as appropriate.

STANDARD 3 ~ Intraoperative Care

Standard Statement	Rationale
<p>3.1 Preparation for Anaesthesia All patients receive care in a safe environment. The patient's identity and all anaesthetic equipment are checked before the procedure commences.</p>	<p>Checking anaesthetic and monitoring equipment minimises the risk of anaesthesia.</p> <p>Hypoxic guards or oxygen analysers with audible alarms prevent anaesthesia machines delivering hypoxic gas mixtures.</p> <p>It is the duty of both the surgeon and anaesthetist to confirm that the correct patient has been brought to the anaesthetic room^{5,14,26,27}.</p> <p>Where children are cared for, their needs are recognised²⁸.</p>
<p>3.2 Perioperative Monitoring All patients are monitored appropriately during anaesthesia.</p>	<p>The presence of an appropriately trained and experienced anaesthetist is the main determinant of patient safety during anaesthesia.</p> <p>Monitoring devices are essential to the safe conduct of anaesthesia^{14,29}.</p> <p>Evidence from randomised controlled trials demonstrates pulse oximetry improves detection of adverse incidents and leads to changes to therapy^{30,31}.</p> <p>Evidence from case series demonstrates use of other monitors speeds detection of adverse incidents³².</p>

Criteria

Essential

- 3.1.1 All anaesthetic equipment is checked before use according to the *Checklist for Anaesthetic Apparatus* recommendations of the Association of Anaesthetists of Great Britain and Ireland.
- 3.1.2 There is a record kept that anaesthetic machines are checked following servicing.
- 3.1.3 All anaesthetic machines have mechanisms to prevent delivery of hypoxic gas mixtures.
- 3.1.4 The anaesthetist confirms the identity of the patient and the consent to anaesthesia and surgery before inducing anaesthesia.
- 3.1.5 Where children are cared for, a system is in place to allow the presence of parents at induction of anaesthesia.

Essential

- 3.2.1 An appropriately trained and experienced anaesthetist is present continuously during anaesthesia.
- 3.2.2 Patients are monitored during induction and maintenance of anaesthesia to the level described by the Royal College of Anaesthetists and Association of Anaesthetists of Great Britain and Ireland.
- 3.2.3 There is a capnograph available in all locations where anaesthesia is provided.
- 3.2.4 When tracheal intubation is performed, a capnograph is used.

STANDARD 3 ~ Intraoperative Care (continued)

Standard Statement	Rationale
<p>3.3 Management of the Airway All locations where anaesthesia is provided have equipment to aid management of the patient's airway.</p>	<p>Securing and managing a patient's airway is an essential part of anaesthesia care.</p> <p>Difficulty in managing a patient's airway, although rare, is an avoidable cause of perioperative mortality and morbidity^{28,33,34}.</p>
<p>3.4 Anaesthetic Emergencies Adverse reactions and uncommon conditions occurring during anaesthesia are managed appropriately.</p>	<p>The risk associated with anaesthesia is small, but the outcome of adverse events can be life-threatening⁵⁸.</p> <p>There is a consensus of expert opinion that following established guidelines improves the management of anaesthetic emergencies.</p>
<p>3.5 Perioperative Blood Transfusion Anaesthetists are responsible for intraoperative blood transfusion. Blood transfusion is sometimes required for the safe performance of surgical procedures. The decision to give a patient a blood transfusion balances the risks of transfusing against not transfusing.</p>	<p>Expert opinion supports the use of best practice guidelines to define a transfusion threshold and to minimise the risk of procedural error in blood transfusion^{35,36}.</p> <p>The most common adverse event is incorrect administration of cross-matched blood.</p> <p>Management of massive blood loss requires prompt action and good communication between specialties and with haematology and blood transfusion laboratories³⁷.</p>

Criteria

Essential

- 3.3.1 Preoperative assessment routinely includes assessment of the airway.
- 3.3.2 In all locations where anaesthesia is provided, a suitable range of equipment, including a capnograph, is available to secure and maintain a patient's airway and oxygen delivery.
- 3.3.3 There is at least one portable storage unit with equipment for advanced difficult airway management within each theatre suite.

Essential

- 3.4.1 Guidelines or 'Anaesthesia Action Plans' for adverse reactions and uncommon conditions are displayed prominently in areas where they may need to be consulted.
- 3.4.2 The drugs and equipment required to follow these guidelines or 'Anaesthesia Action Plans' are available and checked regularly.

Desirable

- 3.4.3 Training sessions for management of anaesthetic emergencies are undertaken by relevant members of the anaesthesia team.

Essential

- 3.5.1 There is a local transfusion protocol, including transfusion thresholds, in keeping with the SIGN Guideline *Perioperative Blood Transfusion for Elective Surgery*.
- 3.5.2 The local protocol includes the recommendations from the British Committee for Standards in Haematology Guideline *The Administration of Blood and Blood Components and the Management of Transfused Patients*, to ensure blood and blood products to be given to a patient are checked before administration.
- 3.5.3 There is a local protocol to guide the management of massive blood loss.

Desirable

- 3.5.4 There is audit of perioperative blood transfusion and transfusion thresholds used.

STANDARD 3 ~ Intraoperative Care (continued)

Standard Statement	Rationale
<p>3.6 Thromboembolism Prophylaxis and Spinal and Epidural Anaesthesia All patients receive appropriate deep vein thrombosis prophylaxis according to a local protocol.</p> <p>All patients also receiving spinal or epidural anaesthesia have dose and timing of the drug prophylaxis adjusted as appropriate.</p> <p>3.7 Prevention of Hypothermia All patients undergoing surgery have appropriate measures implemented to prevent hypothermia.</p>	<p>Appropriate deep vein thrombosis prophylaxis reduces perioperative risk³⁸.</p> <p>Drugs given for deep vein thrombosis prophylaxis may increase the risk of intravertebral canal haematoma following spinal or epidural anaesthesia³⁸.</p> <p>Hypothermia results from anaesthesia-induced impairment of temperature control, cool theatre environment, and surgical factors that promote heat loss.</p> <p>Evidence from randomised controlled trials demonstrates that preventing hypothermia reduces the risks of perioperative cardiac complications³⁹, intraoperative blood loss⁴⁰ and postoperative wound infection⁴¹.</p>

Criteria**Essential**

- 3.6.1 There is a local protocol for deep vein thrombosis prophylaxis in the perioperative period in keeping with the SIGN Guideline *Prophylaxis of Venous Thromboembolism*.
- 3.6.2 Local protocols for deep vein thrombosis prophylaxis include timing of anticoagulant administration, to ensure safe spinal and epidural anaesthesia including insertion and removal of epidural catheters.

Essential

- 3.7.1 Appropriate equipment is available to minimise heat loss and provide active warming of the patient.
- 3.7.2 Patient temperature is routinely recorded in the recovery room.

Desirable

- 3.7.3 There is audit of patient deep body temperature on arrival in the recovery room.

STANDARD 4 ~ Postoperative Care

Standard Statement	Rationale
<p>4.1 Recovery Area There is provision of an appropriate recovery area for immediate postoperative care.</p>	<p>The purpose of the post-anaesthesia recovery area is to provide care until the patient can be safely discharged to a general ward or home in an awake and stable condition, or transferred to a high dependency or intensive care unit.</p> <p>There is a consensus of expert opinion that one-to-one patient care is required until the patient is fully conscious and able to maintain a clear airway.</p> <p>There is a consensus of expert opinion that recovery areas for children are separate or screened from those used by adults²⁸.</p> <p>Care provided during this time includes ensuring satisfactory cardio-respiratory function, and management of pain, and nausea and vomiting^{12,14,42}.</p>

Criteria

Essential

- 4.11 Whenever elective or emergency procedures are undertaken there is a staffed recovery facility available.
- 4.12 All patients are cared for on a one-to-one basis by qualified and trained staff until fully conscious and able to maintain a clear airway.
- 4.13 There is documentation of competencies of individual recovery staff following appropriate training.
- 4.14 The area is equipped with patient monitoring to the level described by the Royal College of Anaesthetists and Association of Anaesthetists of Great Britain and Ireland.
- 4.15 Where children are cared for, the recovery area for children is separate or screened from those used by adults.
- 4.16 Where children are cared for, a system is in place to allow the presence of parents immediately after recovery from anaesthesia.
- 4.17 There are local protocols for the management of pain, and postoperative nausea and vomiting.
- 4.18 There is an agreed protocol describing discharge criteria from the recovery area.

STANDARD 4 ~ Postoperative Care (continued)

Standard Statement	Rationale
<p>4.2 Management of Acute Pain All patients receive effective acute pain management.</p>	<p>Effective pain management is fundamental to quality of care.</p> <p>Pain is considered to be a vital sign and should be assessed frequently both at rest and during activity to ensure optimal analgesia¹⁸.</p> <p>Evidence from randomised controlled trials demonstrates multimodal drug analgesia improves the effectiveness of pain relief.</p> <p>Sedation scores are a better indicator of respiratory depression than respiratory rate¹⁶.</p>
<p>4.3 Postoperative Nausea and Vomiting All patients are assessed for postoperative nausea and vomiting, and these are treated promptly.</p>	<p>Postoperative nausea and vomiting are considered by many patients as more unpleasant than postoperative pain.</p> <p>The rate of postoperative nausea is variable and affected by many factors.</p> <p>Prophylactic medication may be of benefit when the incidence of postoperative nausea and vomiting is high¹⁵.</p>



Criteria
<p>Essential</p> <p>4.2.1 All patients have their pain assessed, recorded and treated. Where possible, patients actively participate in this process.</p> <p>4.2.2 There are local guidelines, which are in routine use, on drug therapy of acute pain.</p> <p>4.2.3 There is a local protocol, which is in routine use, to ensure appropriate monitoring of the patient, including sedation scoring.</p> <p>Desirable</p> <p>4.2.4 There is a vital signs chart in use which includes a record of pain score.</p>
<p>Essential</p> <p>4.3.1 All patients are assessed for postoperative nausea and vomiting.</p> <p>4.3.2 There is a local protocol, which is in routine use, for the prompt management of postoperative nausea and vomiting.</p>

STANDARD 4 ~ Postoperative Care (continued)

Standard Statement	Rationale
<p>4.4 High Dependency Unit Care All patients requiring high dependency care after a procedure are admitted to a high dependency unit (HDU).</p>	<p>The HDU is an area for patients who require more intensive observation, treatment and nursing than can be provided on a general ward.</p> <p>There is a consensus of expert opinion supported by the national mortality reports that there is a requirement for both the provision and use of HDU beds^{44,45}.</p> <p>Evidence from a cohort study found that failure to admit a patient to the appropriate level of care increased the risk of perioperative death⁴⁶.</p>

Criteria

Essential

4.4.1 A needs assessment has been undertaken, which has demonstrated that there are sufficient staffed and equipped surgical high dependency beds for the clinical activity of the hospital.
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10. Glossary of Terms

AAGBI	See Association of Anaesthetists of Great Britain and Ireland.
accreditation	A process, based on a system of external peer review using written standards, designed to assess the quality of an activity, service or organisation.
acute pain	Pain of recent onset and probable limited duration. For the purposes of this review, the pain following an operation or procedure.
acute pain service	This generally includes members of the medical and nursing staff, and may also include others, such as clinical pharmacists and physiotherapists. A formal acute pain service can offer education about acute pain management in general, the provision and standardisation of types and methods of pain relief, supervision of patients under the care of the acute pain service, and audit and research of acute pain management.
acute sector	Hospital-based health services which are provided on an in-patient or out-patient basis.
American Society for Anesthesiologists	This American body is an educational, research and scientific association of doctors organised to raise and maintain the standards of the medical practice of anaesthesia and improve patient care. Website address: www.asahq.org/homepageie.html
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.
anaesthetic record	A chart used to record the preoperative assessment and intraoperative care, including anaesthetic techniques used and the record of vital signs. It also records postoperative care instructions.
anaesthetic assistant	A trained member of staff, nurse or operating department practitioner, who helps the anaesthetist. This assistance is provided from the start of anaesthesia to the immediate recovery of the patient from anaesthesia.
anaesthetic assistant (dedicated)	A named assistant who is present for the entire anaesthetic, and whose priority at all times is to provide assistance for the anaesthetist.
anaesthetist	A medically qualified doctor who cares for a patient during a surgical procedure and administers either a general or regional anaesthetic. Anaesthetists also assess the state of a patient's health before a planned surgical procedure, and are often involved in caring for the patient post-surgery. Most specialists in intensive care and pain management are anaesthetists.
analgesia	Pain relief.
analgesic therapies	Drugs used for pain relief.
anticoagulant	An agent that prevents or slows down the clotting of blood.

assessment	The process of measuring patients' needs and/or the quality of an activity, service or organisation.
Association of Anaesthetists of Great Britain and Ireland (AAGBI)	The Association of Anaesthetists of Great Britain and Ireland was founded to promote the development and study of anaesthesia as a specialised branch of medicine. The Association publishes guidelines on a range of issues of concern to anaesthetists and related specialties. Website address: www.aagbi.org
audit	Systematic review of the procedures used for diagnosis, care, treatment and rehabilitation, examining how associated resources are used and investigating the effect care has on the outcome and quality of life for the patient.
BCSH	See British Committee for Standards in Haematology.
British Committee for Standards in Haematology (BCSH)	The British Committee for Standards in Haematology is a sub-committee of the British Society for Haematology. It was set up to produce guidelines in clinical and laboratory haematology to support and inform practising haematologists in their day-to-day work. Website address: www.blackwellpublishing.com/uk/society/bsh/
Caesarean section	An operation to deliver a baby.
capnograph	A device that measures the amount of carbon dioxide in a gas. This is the best way to confirm the breathing tube is correctly placed within the windpipe (trachea).
carbon dioxide	The product of metabolism. A waste gas breathed out via the lungs. The presence of carbon dioxide in gas breathed out following insertion of a breathing tube confirms the tube is in the windpipe (trachea).
cardio-respiratory function	Heart and lung function.
case series	A report on a series of patients with the outcome of interest.
chronic pain	A pain following an episode of tissue damage which persists past the time when healing is expected to be complete, usually 3 months.
clinical governance	A framework through which NHS organisations are accountable for both continuously improving the quality of their services, and safeguarding high standards of care, by creating an environment in which excellence in clinical care will flourish.
	Management of clinical risk at an organisational level is an important aspect of clinical governance. Clinical risk management recognises that risk can arise at many points in a patient's journey, and that aspects of how organisations are managed can systematically influence the degree of risk.

Clinical Negligence and Other Risks Indemnity Scheme (CNORIS)	New financial risk sharing arrangements for both clinical and non-clinical risks. Introduced from 1 April 2000 and outlined in MEL(1999)86, issued in December 1999. More detailed information on the Scheme's coverage and operation is set out in MEL(2000)18, which was issued in April 2000. Website address is: www.cnoris.com/
Clinical Standards Board for Scotland (CSBS)	The Clinical Standards Board for Scotland was a statutory body, established as a Special Health Board in April 1999. Its role was to "develop and run a system of quality control of clinical services designed to promote public confidence that the services provided by the NHS met nationally agreed standards, and to demonstrate that, within the resources available, the NHS was delivering the highest possible standards of care". On 1 January 2003, CSBS was merged, along with four other clinical effectiveness bodies, to form NHS Quality Improvement Scotland (NHS QIS). See NHS Quality Improvement Scotland.
CNORIS	See Clinical Negligence and Other Risks Indemnity Scheme.
cohort study	A study involving the identification of two groups (or cohorts) of patients, one of which received the exposure of interest, and one which did not, and following up the groups for the outcome of interest.
college	In the UK, the term college, when used relating to healthcare, as for example in "The Royal College of...", refers to organisations which usually combine an education role with promotion of professional standards.
criterion(s)/criteria(pl)	Provide the more detailed and practical information on how to achieve the standard, and relate to structure, process or outcome factors.
CSBS	See Clinical Standards Board for Scotland.
deep vein thrombosis	The formation of blood clots in the deep veins of the legs or pelvis.
desirable (criterion/criteria)	Good practice that is being achieved in some parts of the service and demonstrates levels of quality to which other providers of a similar service should strive.
diagnosis	Identification of an illness or health problem by means of its signs and symptoms. This involves ruling out other illnesses and causal factors for the symptoms.
elective (operation or procedure)	Operation at a time to suit both patient and surgeon (eg joint replacement).
electroconvulsive therapy	The medically supervised application of an electric shock to the brain for the treatment of depression.
emergency (operation or procedure)	An immediate life-saving operation or procedure.

essential (criterion/criteria)	A criterion that should be met wherever a service is provided.
evaluation	The study of the performance of a service (or element of treatment and care) with the aim of identifying successful and problem areas of activity.
evidence-based medicine	Evidence-based clinical practice is an approach to decision making in which the clinician uses the best evidence available, in consultation with the patient, to decide upon the option which suits that patient best.
fixed flexible session	A session worked by doctors that is scheduled for a particular time but not committed to a particular activity. This permits cover of clinical sessions in cases of absence.
general practitioner (GP)	Also known as a family doctor.
generic standards	Standards that apply to most, if not all, clinical services.
GP	See General Practitioner.
guidelines	Statements which help in deciding how to treat particular conditions.
haematology	The study of the physiology and pathology of the blood.
HDL	See Health Department Letter.
HDU	See high dependency unit.
Health Council	Each NHS Board area has a Health Council, an organisation whose aim is to promote public consultation and participation in health-related matters. Sometimes referred to as a Local Health Council.
Health Department Letter (HDL)	Health Department Letter (formerly known as Management Executive Letter - MEL), formal communications from the Scottish Executive Health Department to NHSScotland.
healthcare professional	A person qualified in a health discipline.
high dependency unit (HDU)	High dependency unit care is appropriate for: patients needing support for a single failing organ, but excluding those needing advanced respiratory support; patients who can benefit from more detailed observation than can be safely be provided on a general ward; patients no longer needing intensive care, but not yet well enough to be returned to a general ward; or postoperative patients who need close monitoring for longer than a few hours ie the period normally spent in the recovery area. This is also referred to as level 2 care. (Definition is taken from "Better Critical Care report of the Short-Life Working Group on ICU and HDU Issues" ⁷).
hypothermia	The condition of having a low body temperature.
hypoxic gas mixtures	A gas mixture with a low concentration of oxygen.

hypoxic guards	A device which prevents the anaesthetic machine delivering gas with a low concentration of oxygen. This can be either a mechanical device in the anaesthetic machine that prevents a low concentration of oxygen being given, or an oxygen analyser which sounds an alarm when a low concentration of oxygen is present. These devices are often used together.
ICP	See integrated care pathway.
induction programme	Learning activities designed to enable newly appointed staff to function effectively in their new job.
Information and Statistics Division (ISD)	The Information and Statistics Division is part of the Common Services Agency, NHSScotland. Health service activity, manpower and finance data are collected, validated, interpreted and disseminated by the division. This data is received from NHS Boards, NHS Trusts and general practices. Website address: www.show.scot.nhs.uk/isd/index.htm
infusion (of drugs)	The continuous, slow introduction of a drug into the body by a pump, in most cases into a vein. In epidural analgesia, the drug is given through an epidural catheter into the epidural space.
integrated care pathway (ICP)	An integrated care pathway is an explicit agreement by a local group, both multidisciplinary and multi-agency, of staff and workers to provide a comprehensive service to a clinical or care group on the basis of current views of good practice and any available evidence or guideline. It is important that the group agree on communication, record keeping and audit. There should be a mechanism to pick up when a patient has not received any care input specified by the pathway so that the omission can be remedied. The local group should be committed to continuous improvement of the integrated care pathway on the basis of new evidence of service developments or of problems in implementation.
intraoperative	At the time of the operation or procedure.
intravertebral canal haematoma	A blood clot in the space surrounding the spinal cord. This can be dangerous because it may compress and damage the cord.
intubation	The passage of a breathing tube into the windpipe (trachea).
ISD	See Information and Statistics Division.
Island NHS Board	There are 3 Island NHS Boards (Orkney, Shetland and the Western Isles). They have always had a combined strategic and operational role.
LHCC	See Local Health Care Co-operative.
Local Health Care Co-operative (LHCC)	In Scotland, Local Health Care Co-operatives are voluntary groupings of GPs and other local health care professionals intended to strengthen and support the primary health care team in delivering local care.

Managed Clinical Network (MCN)	A formally organised network of clinicians. The main function is to audit performance on the basis of standards and guidelines, with the aim of improving healthcare across a wide geographic area, or for specific conditions.
Management Executive Letter (MEL)	Formal communications from the Scottish Executive Health Department to NHSScotland, now known as Health Department Letters (HDLs).
massive blood loss	Loss of a volume of blood equal to the volume of blood in the body within a 24-hour period.
material risk	A material risk is one to which a reasonable person in the patient's position would be likely to attach significance.
MEL	See Management Executive Letter.
monitoring	The systematic process of collecting information on clinical and non-clinical performance. Monitoring may be intermittent or continuous. It may also be undertaken in relation to specific incidents of concern or to check key performance areas.
morbidity	A diseased condition or state. The incidence of a particular disease or group of diseases in a given population during a specified period of time.
mortality (rate)	The number of deaths in a given population during a specified period of time.
multidisciplinary	A multidisciplinary team is a group of people from different disciplines (both healthcare and non-healthcare) who work together to provide care for patients with a particular condition. The composition of multidisciplinary teams will vary according to many factors. These include: the specific condition, the scale of the service being provided, and geographical/socio-economic factors in the local area.
multimodal drug 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.
NHS	National Health Service.
NHS Board	NHS Boards are responsible for strategic planning, performance management and governance of each of Scotland's 15 local health systems. Most Boards areas contain one Acute and one Primary Care Trust, with operational and employment responsibilities, but since 2001 they have operated within a strategic framework drawn up by the NHS Board. By 2004 Trusts will have been abolished and replaced by operating divisions of the NHS Board (see also NHS Trust).
NHS priorities	The three national clinical priorities are mental health; coronary heart disease and stroke; and cancer.

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. NHS Quality Improvement Scotland has been created by the merger of five organisations: Clinical Standards Board for Scotland (CSBS); Health Technology Board for Scotland (HTBS); Scottish Health Advisory Service (SHAS); Nursing and Midwifery Practice Development Unit (NMPDU), and the Clinical Resources and Audit Group (CRAG). Website address: www.nhshealthquality.org
NHSScotland	The National Health Service in Scotland.
NHS Trust	A Trust is an NHS organisation responsible for providing a group of healthcare services for the local population. An Acute hospital Trust provides hospital services. A Primary Care Trust provides primary care/community health services. Mental health services (both hospital and community based) are usually provided by Primary Care Trusts. Since 2001 Trusts have operated within an overall framework drawn up by their NHS Board. Subject to legislation, Trusts will be dissolved by April 2004, becoming operating divisions of the NHS Board. The NHS Board will be the single employer for the local system. In 2 areas - Borders and Dumfries & Galloway - since April 2003 there have been no Trusts or operating divisions with the NHS Board fulfilling a dual strategic and operational role (like the 3 Island Boards). The term 'Trust' is retained in NHS QIS publications during the period of Trust abolition. Where unification has occurred, the term 'Trust' should be taken to signify an operating division of the local NHS Board. See also NHS Board.
non-consultant anaesthetist	An associate specialist or staff grade anaesthetist, or an anaesthetist in training.
non-consultant career-grade anaesthetist	An associate specialist, or staff grade anaesthetist.
operating department practitioners	Members of staff who have undergone training and gained the Scottish Vocational Qualification - Level 3.
out-of-hours	Between 5pm - 9am Monday to Friday and also weekends (not between 9am - 5pm Monday to Friday).
oxygen analyser	A device that measures the oxygen level in a gas. These devices sound an alarm if the oxygen concentration falls below a set level.

patient	A person who is receiving care or medical treatment. A person who is registered with a doctor, dentist, or other healthcare professional, and is treated by him/her when necessary. Sometimes referred to as a user.
patient care pathway	A plan of care that outlines key activities within specified times. The pathway follows the patient's journey of care.
patient journey	The pathway through the health services taken by the patient (the person who is receiving treatment), and as viewed by the patient.
PCT	Primary Care Trust. See Trust and Primary Care.
peer review	Review of a service by those with expertise and experience in that service, either as a provider, user or carer, but who are not involved in its provision in the area under review. In the NHS Quality Improvement Scotland approach, all members of a review team are equal.
perioperative	The period immediately before, during and after a surgical procedure.
physician	A specialist in medicine.
postoperative	Occurring after a surgical procedure.
postoperative nausea and vomiting	Feeling sick or being sick after an operation or procedure.
preoperative anaesthetic assessment	Includes assessment of the general medical fitness of the patient, review of current drug therapy, and assessment of any specific anaesthetic problems by the anaesthetist.
preoperative screening	Collection of information from the patient by trained staff. This provides the anaesthetist with the basic information on which an assessment of fitness for anaesthesia can be made.
primary care	The conventional first point of contact between a patient and the NHS. This is the component of care delivered to patients outside hospitals and is typically, though by no means exclusively, delivered through general practices. Primary care services are the most frequently used of all services provided by the NHS. Primary care encompasses a range of family health services provided by family doctors, dentists, pharmacists, optometrists and ophthalmic medical practitioners.
prophylactic medication	Drugs prescribed to prevent something happening.
protocol	A policy or strategy which defines appropriate action in specific circumstances. These may be national, or agreed locally to take into account local requirements.
pulse oximetry	A device that measures how much oxygen is in the blood stream, usually by means of a clip attached to the finger.
quality assurance (QA)	Improving performance and preventing problems through planned and systematic activities including documentation, training and review.

Quality Assurance Manual	Document outlining the methods and procedures to be used in setting standards and reviewing services.
radiology	The use of X-rays in the diagnosis, treatment and monitoring of disease.
radiotherapy	The use of radiation, usually X-rays or gamma rays, to kill tumour cells.
randomised control trial (RCT)	Seeks to measure and compare the outcomes of two or more clinical interventions. One intervention is regarded as the standard of comparison or control. Random allocation means that all participants have the same chance of being assigned to each of the study groups (Alejandro R Jadad).
rationale	Scientific/objective reason for taking specific action.
RCA	See Royal College of Anaesthetists.
referral	The process whereby a patient is transferred from one professional to another, usually for specialist advice and/or treatment.
respiratory depression	Usually defined as respiratory rate of less than eight breaths per minute. This can be caused by some of the drugs used during and after anaesthesia.
respiratory rate	The number of breaths taken in 1 minute.
Royal College of Anaesthetists (RCA)	The professional and advisory body overseeing education and qualifications of anaesthetists within the United Kingdom. Website address: www.rcoa.ac.uk
SASM	See Scottish Audit of Surgical Mortality.
Scottish Audit of Surgical Mortality (SASM)	The national audit of all patients who died in hospital under the care of a surgeon, whether an operation has taken place or not. Following collection of the data, an Annual Report is compiled providing commentaries on practice in all surgical and anaesthetic specialties, highlighting areas for potential improvement. Website address: www.show.scot.nhs.uk/sasm/
Scottish Executive Health Department (SEHD)	The Scottish Executive Health Department is responsible for health policy and the administration of NHSScotland. Website address: www.show.scot.nhs.uk/sehd/
Scottish Intercollegiate Guidelines Network (SIGN)	SIGN was established in 1993 by the Academy of Royal Colleges and Faculties in Scotland, to sponsor and support the development of evidence-based clinical guidelines for NHSScotland. Where a SIGN guideline exists for a specialty or service for which CSBS has set standards, or NHS QIS is taking forward standards, it will be referenced. For further information relating to SIGN guidelines or the methodology by which SIGN guidelines are developed, contact: SIGN Executive, Royal College of Physicians, 9 Queen Street, Edinburgh EH2 1JQ. Website address: www.sign.ac.uk/
secondary care	Care provided in an acute sector setting. See acute sector.

sedation score	A scoring system used to assess the conscious level of patient's and how easy it is to wake them.
SEHD	See Scottish Executive Health Department
self-assessment	Assessment of performance against standards by individual/clinical team/Trust providing the service to which the standards are related.
SIGN	See Scottish Intercollegiate Guidelines Network.
SIGN guideline	Scottish Intercollegiate Guidelines Network guideline. See also guidelines.
Special Health Board	The name is given to Health Boards with a national remit. These boards are focused on specific areas - eg, NHS Education for Scotland, or NHS Quality Improvement Scotland. Special Health Boards match regional NHS Boards in terms of administrative grading.
spinal anaesthesia	Spinal anaesthesia involves a single injection of local anaesthetic into the fluid around the nerves coming off the spinal cord.
standard statement	An overall statement of desired performance.
statutory	Enacted by statute; depending on statute for its authority as a statutory provision. Required by law.
surgical session	A period of operating theatre time for a designated surgical team. This is defined on the basis of a half-day session, morning or afternoon.
theatre suite	A number of operating theatres contained within a single area of the hospital.
thromboembolism	Movement of blood clots from the deep veins of the legs or pelvis, through the bloodstream to the arteries going to the lungs.
tracheal intubation	The passage of a breathing tube into the windpipe (trachea).
transfusion threshold	The haemoglobin value below which a blood transfusion will normally be of benefit, under stable conditions and in the absence of other clinical symptoms or signs of anaemia. Haemoglobin is the part of the red blood cells that carries oxygen around the body.
trauma	A wound or injury to the body occurring after an accident.
unified Board	See NHS Board.
urgent (operation or procedure)	Operation or procedure within 24 hours of presentation (eg for intestinal obstruction, major fractures).



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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