Chapter 2

Guidelines for the Provision of Anaesthesia Services (GPAS)

Guidelines for the Provision of Anaesthesia Services for Pre-operative Assessment and Preparation 2018
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The Chapter Development Group was convened according to the recruitment process outlined in the GPAS Chapter Development Process Document.

Acknowledgements
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Perioperative Medicine Programme
Middlesbrough, UK

GPAS Editorial Board
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Dr Andrew Hutchinson (co-opted member)
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Promoting equality and addressing health inequalities
The Royal College of Anaesthetists is committed to promoting equality and addressing health inequalities. Throughout the development of these guidelines we have:

- given due regard to the need to eliminate discrimination, harassment and victimisation, to advance equality of opportunity, and to foster good relations between people who share a relevant protected characteristic (as cited under the Equality Act 2010) and those who do not share it
- given regard to the need to reduce inequalities between patients in access to, and outcomes from healthcare services and to ensure services are provided in an integrated way where this might reduce health inequalities.
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GPAS guidelines in context
The Guidelines for the Provision of Anaesthetic Services (GPAS) documents should be viewed as ‘living documents’. The GPAS guideline development, implementation and review should be seen not as a linear process, but as a cycle of interdependent activities. These in turn are part of a range of activities to translate evidence into practice, set standards and promote clinical excellence in patient care.

Each of the GPAS chapters should be seen as independent but interlinked documents.

Each chapter will undergo yearly review, and will be continuously updated in the light of new evidence.

Guidelines alone will not result in better treatment and care for patients. Local and national implementation is crucial for changes in practice necessary for improvements in treatment and patient care.

Medico-legal implications of GPAS guidelines
GPAS guidelines are not intended to be construed or to serve as a standard of clinical care. Standards of care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. Adherence to guideline recommendations will not ensure successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement must be made by the appropriate healthcare professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan. This judgement should only be arrived at following discussion of the options with the patient, covering the diagnostic and treatment choices available. It is advised, however, that significant departures from the national guideline or any local guidelines derived from it should be fully documented in the patient’s case notes at the time the relevant decision is taken.

Declaration of interest
All chapter development group members, stakeholders and external peer reviewers were asked to declare any pecuniary or non-pecuniary conflict of interest, in line with the GPAS conflict of interest policy as described in the GPAS Chapter Development Process Document.

Declarations were made as follows:
- both co-authors were authors of the GPAS Pre-operative Assessment and Preparation Chapter 2014
- one of the lay members of the chapter development group held a position as member of the Royal College of Anaesthetists Council
- three members of the chapter development group held positions as board members of the Pre-operative Association
- four members of the chapter development group were involved in producing one of the items of evidence.

The nature of the involvement in all declarations made above was not determined as being a risk to the transparency or impartiality of the chapter development. Where a member was conflicted in relation to a particular piece of evidence, they were asked to declare this and then, if necessary, removed themselves from the discussion of that particular piece of evidence and any recommendation pertaining to it.

Aims and objectives
The objective for this chapter is to describe current best practice in pre-operative assessment and preparation for anaesthesia and surgery. This will be supported by evidence and national recommendations where available.

A comprehensive pre-operative assessment and preparation service is fundamental to high-quality, safe practice. The service is part of the responsibility of the anaesthetist as a peroperative physician. The goal of pre-assessment is to ensure an excellent patient- and family-centred experience with shared decision-making embedded throughout the process. Appropriate education and professional development for staff should be available. Training in pre-operative assessment and assessment of competence is essential in this specialist area. This service is an integral part of the anaesthetic pathway and should be fully funded.

There are two main components to pre-operative assessment and preparation. The first is based on the provision of a safe and appropriate anaesthesia. This is primarily a safety check and patient communication
process most often carried out on the day of surgery by the anaesthetist involved in the case. The second is the concept of the anaesthetist as the perioperative physician and it is in this capacity that the second component is undertaken. It is now broadly accepted that there is a need to assess the chance of harm and benefit afforded by any surgical or anaesthetic intervention and this information should be communicated to the patient. This should facilitate the shared decision-making process, which will lead to the selection of appropriate intra-operative and post-operative care that takes into account the patient’s personal preferences and values.

The aim is to ensure the patient is fully informed and ready for surgery. This will involve a health check and possibly optimisation of their health and current therapies. It involves planning with the patient their admission to hospital and discharge after surgery. This will help prevent cancellations on the day of surgery and lead to a better patient experience.

These guidelines apply to the care of all patients who require anaesthesia or sedation. For urgent or immediate emergency surgery, these guidelines may need to be modified, this should be documented in the patient’s record. Further information on pre-assessment for emergency surgery is contained in chapter 5: Guidance on the provision of emergency anaesthesia services. For expedited emergency surgery, these guidelines should not need to be modified.¹

**Scope**

Pre-operative care is the responsibility of a multi-professional team that should include: general practitioners, physicians, pre-operative nurses, anaesthetists, physicians’ assistants in anaesthesia (PA(A)s), surgeons, geriatricians, occupational therapists, dieticians, physiotherapists and pharmacists.

There are two main components of assessment and preparation:

- assessment should be standardised and consist of establishing a rapport with the patient, followed by the gathering of information to establish the patient’s medical, nursing and social needs in the perioperative period
- preparation includes optimisation, medicines rationalisation, giving essential information, shared decision-making and patient choice.

**Clinical question**

The key question covered by this guideline is:

- what are the key components of a quality pre-operative assessment and preparation service?

Areas included are:

- Levels of provision of service, including (but not restricted to) staffing, equipment, support services and facilities
- Areas of special requirement such as paediatrics, obstetrics, elderly care, obesity, and additional needs
- Training and education
- Research and audit
- Organisation and administration
- Patient information
- Quality improvement.

**Target population**

This chapter covers patients of all ages undergoing elective or emergency anaesthesia and all staff groups working within the pre-operative phase of anaesthetic practice including (but not restricted to) consultant anaesthetists, staff grade, associate specialist and specialty (SAS) doctors, trainee anaesthetists, Physicians Assistants’ in Anaesthesia (PA(A)) and nurses. Provision of pre-operative services provided by a specialty other than anaesthesia is not covered in this chapter.
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Target audience
The target audience for this chapter is anaesthetists with responsibilities for service delivery and healthcare managers.

The complete definition of the scope of this chapter is available in the scoping document.

Introduction
Pre-operative assessment and preparation is a process. It involves primary care, anaesthesia and other specialties. The general practitioner has a major role to play by ensuring that patients are ‘fit for referral’ and by initiating the shared decision-making process. Development of strong links with primary care can facilitate this.

Part of the process is an assessment to check it is safe to proceed with anaesthesia and surgery. It is also about both optimising and preparing the patient for anaesthesia and surgery. The anaesthetist plays a key role in coordinating this process with other medical specialties and healthcare professionals.

Shared decision-making should run throughout the patient journey; it is now viewed as an ethical imperative by the professional regulatory bodies, which expect clinicians to work in partnership with patients. Patients want to be more involved than they are currently in making decisions about their own health and healthcare, and there is compelling evidence that patients who are active participants in managing their health and healthcare have better outcomes than patients who are passive recipients of care. If the patient decides to proceed, he or she should be as fit as possible for surgery and anaesthesia. Pre-operative assessment and preparation allow risks to be clearly identified and mitigated, or managed in a planned and consistent way.

The pre-operative clinic and anaesthetist have important roles to play in ensuring that shared decision-making becomes a reality. This is defined as a process in which clinicians and patients work together to select tests, treatments, management or support packages, based on clinical evidence and the patient’s informed preferences. It involves the provision of evidence-based information about options, outcomes and uncertainties, together with decision support counselling and a system for recording and implementing patients’ informed preferences. The individual values of patients and their perspective on how healthcare interacts with their life are key to this.2

Following a recent legal decision regarding consent, discussions around the risks of a procedure and possible alternatives should be determined by the patient.3, 4

The chapter will cover sections on:
- Staffing requirements
- Equipment, services and facilities
- Areas of special requirement
- Training and education
- Organisation and administration
- Financial considerations
- Research, audit and quality improvement
- Implementation support
- Patient information.

Recommendations
The grade of evidence and the overall strength of each recommendation are tabulated in Appendix 1.
1 Staffing requirements

An appropriate level of staffing is essential to deliver a good quality service. Non-anaesthetist health professionals, for example, pharmacists, physiotherapists, occupational therapists, specialist nurses, stoma therapists, and PA(A) can add considerable value to the service. 5,6

1.1 All patients should be assessed before anaesthesia or sedation for surgery by an appropriately trained doctor, nurse or PA(A). 6,7

1.2 The WHO sign in should take place before induction of anaesthesia. 8

1.3 Anaesthetists need time to cover the following essential points in the more immediate pre-operative phase. The anaesthetic room is not usually an appropriate place for this except in an emergency.

Assessment

• Interview and medical case notes review to establish current diagnoses, current medicines and past medical and anaesthetic history. 8,9
• Examination, including airway assessment.
• Review of results of relevant investigations.
• The presence of any risk factors, including methicillin-resistant Staphylococcus aureus (MRSA) screening and risk of venous thromboembolism.
• The need for further tests to give the patient more information about their individual risk. This information also needs to be disseminated to the anaesthetist involved in the case as well as the extended perioperative team.

Preparation

• The patient’s understanding of and consent to the procedure and a share in the decision-making process.
• An explanation of the options for anaesthesia, an opportunity to ask questions, and agreement to the anaesthetic technique proposed.
• Pre-operative fasting, the proposed pain relief method, expected sequelae, and possible major risks (where appropriate).
• The prescription and ordering of any pre-operative medication including carbohydrate drinks.
• A plan for the perioperative management of anticoagulant drugs, diabetic drugs and other current medications.
• A process of medicines reconciliation by a pharmacist or pharmacy technician should be in place pre-operatively.
• The documentation of details of any discussion in the anaesthetic record.
• Information that may be reinforced by attendance at communal sessions such as ‘joint school’ for hip and knee surgery at which there may be input from an anaesthetist, orthopaedic surgeon, occupational therapist, physiotherapist, acute pain specialists, pharmacists and ward nurse.

1.4 The following time allocation (per week) is a guide to the minimum physician anaesthetist staffing that should be provided per 1,000 in-patients passing through a pre-operative preparation clinic:

- reviews and consultations 1 session (1.25 programmed activities)
- high risk clinics 1 session (1.25 programmed activities)
- clinical leadership for the service 1 session per 5,000 in-patients (1.25 programmed activities).

Clinical leadership is for audit, research, teaching, protocol development, IT development and primary care liaison. Backfill to cover staff who are on leave and secretarial support should also be provided. 11
1.5 Local protocols should determine the grade, experience and competency-based training of the nurse undertaking pre-operative assessments and accompanying the patient to the operating department. For 1,000 patients, the following minimum staffing is required:

- 0.6 registered nurses
- 0.3 healthcare assistants

This staffing to patient ratio is based on 80 per cent of patients as day cases and 20 per cent as in-patients assuming day case patients have a 30-minute nurse consultation and in-patients have 45 minutes. This is only a guide, as complex patients may be scheduled for minor surgery and fit patients may be scheduled for major surgery.

1.6 Perioperative time should be allocated for the work the anaesthetist undertakes on the day of surgery for both pre-operative and postoperative care. The times allocated might vary per patient but for most theatre lists it approximates to 1 hour per 4 hours spent in the operating theatre suite or 2 hours per 8 hours in the operating theatre suite.

1.7 There must be the ability to provide the patient with the appropriate chaperone, as per GMC guidance on intimate examinations and chaperones. When examining a patient, anaesthetists must be sensitive to what the patient may consider as intimate, which could include any examination where it is necessary to touch or even be close to the patient.

2 Equipment, services and facilities

2.1 There should be a reception desk and receptionist to meet and greet patients as they arrive in a pre-operative preparation clinic. They can ensure the patient’s attendance is registered and that the patient is directed to the appropriate member of staff or to a waiting area.

2.2 The patients’ waiting area should provide adequate seating for the number of patients attending a pre-operative preparation clinic. This may be an appropriate place to display patient information leaflets.

2.3 Consulting rooms need adequate furniture, such as a desk, chairs, examination couch and equipment such as computers, scales for measuring height and weight, blood pressure, pulse oximeter and electrocardiography machines.

2.4 There should be equipment and facilities for blood tests and urine analysis.

2.5 There should be facilities for the storage of patients’ paper notes in a secure environment to enable access to previous anaesthetic records and medical alerts.

2.6 Information from the patient’s pre-operative assessment should be readily available, ideally as part of an electronic patient record so that information is easy to transfer between locations and to enable data collection for later analysis.

3 Areas of special requirement

Children

Most paediatric anaesthesia is for minor surgery in previously fit and healthy children. A large proportion of this work is carried out in non-specialist hospitals. All anaesthetists with a CCT or equivalent should be competent to provide perioperative care for common surgical conditions in children aged 3 years and above. Anaesthesia may also be required for non-surgical procedures such as magnetic resonance imaging (MRI) or computed tomography (CT) scans. In an emergency situation, anaesthetists will often be part of the multidisciplinary team responsible for the initial resuscitation and stabilisation of the critically ill or injured child prior to transfer to a specialist centre.

Recommendations for children’s services, including the pre-operative phase of anaesthesia, are comprehensively described in GPAS chapter 10.
3.1 The particular needs of children should be considered at all stages of perioperative care. They should ideally attend a pre-operative clinic staffed by nurses experienced in pre-assessing children. Children may benefit from a visit to the locality to which they will be admitted, and familiarisation with the environment and personnel. There should be access to play specialists.

3.2 The child should be helped to understand events that are happening or will happen, with the use of age-specific and developmentally appropriate explanation and materials. There are specific issues around consent for children that need to be understood, including the particular requirements for children who are not under the care of their parents.

3.3 A parent or legal guardian should ideally be with the child up to the point of moving into the operating theatre.

3.4 Parents and carers should be enabled to remain as close to their child as possible during the process of anaesthesia and recovery. There should be a space available within close proximity to theatres where they can wait and be contacted.

3.5 Where sedative premedication is considered, this should be discussed with parents and carers.

3.6 Most children are fit and healthy, and straightforward surgery can be planned on a day-case basis. Routine blood testing is rarely necessary. There are exceptions to this such as sickle cell status.

3.7 Anaesthesia for children should be undertaken or supervised by senior anaesthetists who have undergone appropriate training. In the UK, all anaesthetists with a CCT or equivalent will have obtained higher paediatric anaesthetic training. There will be anaesthetists who have acquired more advanced competencies, thus allowing provision of a more extensive anaesthetic service, and those competencies should be maintained. Unless there is no requirement to anaesthetise children, it is expected that competence and confidence to anaesthetise children will need to be sustained through direct care, continuing professional development and/or refresher courses, and should be considered within annual appraisal and revalidation.

3.8 Each hospital should have a written definition of age thresholds and the types of procedure for elective and emergency work, including imaging, which can be provided locally. Complex children, eg ASA 3 with significant co-morbidity, should be discussed with the carers and referred to a tertiary centre if the local infrastructure cannot meet their needs.

3.9 Children should be separated from, and not managed directly alongside adults throughout the patient pathway including in waiting rooms, pre-assessment clinic rooms and theatre areas, including anaesthetic and recovery areas, as far as possible. These areas should be child-friendly.

3.10 Children undergoing surgery should be grouped into paediatric lists, or together at the start of mixed lists.

3.11 Pre-operative fasting should be minimised as much as possible, especially for infants and younger children.

3.12 All clinical staff working with children should have up to date certification in Safeguarding Level 2.

3.13 There should be a policy in place for pregnancy testing in the under 16s. This should adhere to Royal College of Paediatrics and Child Health guidance.

3.14 Information on the risks and the common side effects of anaesthesia in children should be discussed and offered in writing to children, parents and guardians.

3.15 Information on the long-term effects of anaesthesia, particularly for infants and young children should be made readily available to parents and guardians.

Obstetric patients

Recommendations for obstetric services, including the pre-operative phase of anaesthesia, are comprehensively described in GPAS chapter 9.
3.16 Pre-operative assessment, optimisation and shared decision-making in older patients with multiple comorbidities, frailty or cognitive impairment require a cross-specialty approach involving anaesthetists, surgeons, geriatricians, pharmacists and allied health professionals. Liaison with a clinical pharmacist to support older patients with polypharmacy in the peri-operative period will enable optimisation of medicines and improved management of the patients’ non-surgical co-morbidities during this time. The development of such teams requires time and resources. These should be recognised and provided.27,28,29,30

3.17 Patients with frailty are at increased risk of adverse postoperative outcome. Older patients undergoing intermediate and high-risk surgery should be assessed for frailty using an established tool or scoring system. Pathways of care providing proactive pre-operative interventions for frailty, involving therapy services, social services and geriatricians, should be developed.31,32,33,34 Older patients should have access to a consultant geriatrician. Opportunities for joint geriatric and surgical clinical governance should be considered.33,35

3.18 The risk of postoperative functional decline and complex discharge related issues should be considered.

3.19 There is a high prevalence of recognised and unrecognised cognitive impairment amongst older surgical patients. This has implications for shared decision-making, the consent process and perioperative management. Older patients should have pre-operative cognitive assessment using established screening or diagnostic tools.

3.20 Older patients should be assessed for risk of postoperative delirium, and pre-operative interventions undertaken to reduce the incidence, severity and duration of postoperative delirium. Hospitals should ensure guidelines are available for the prevention and management of postoperative delirium that are circulated pre-operatively to the relevant admitting teams.31

3.21 There should be established liaison with social services for patients who need such support to prevent delay in discharge.

Morbidly obese patients

3.22 Every hospital should nominate an anaesthetic lead for obesity.36

3.23 Operating lists should include the patients’ weight and body mass index (BMI), and the World Health Organization (WHO) Surgical safety checklist37 should include obesity related issues such as correct equipment and manual handling.36

3.24 Experienced anaesthetic and surgical staff should manage obese patients. Ideally, morbidly obese patients should be pre-assessed by a senior anaesthetist.36

3.25 Additional specialised equipment is necessary and should be available for every morbidly obese patient at all stages of the pathway. Advance warning of these elective patients should be given to the appropriate department in the hospital by the pre-operative assessment team.36

3.26 Patient dignity should be maintained by ensuring appropriate equipment and clothing is available and by staff attitudes to obesity.

Diabetic patients

3.27 Pre-operative assessment, optimisation, manipulation of patients’ normal drugs and shared decision-making in patients with diabetes requires a cross-specialty approach involving anaesthetists, surgeons, diabetologists and diabetes inpatient specialist nurses. The development of such teams requires time and resources. This should be recognised and provided.38

3.28 Patients with diabetes are at increased risk of adverse postoperative outcomes. Pathways of care providing proactive pre-operative interventions to promote day of surgery admission and day surgery should be developed.38

3.29 Patients with diabetes are at increased risk of concurrent morbidity. These conditions should be identified and optimised where and when possible.38
3.30 Patients with diabetes are at increased risk of drug errors and drug interactions. Pathways should ensure drug reconciliation, which is vital to these at-risk patients.\textsuperscript{38}

**Additional needs**

3.31 In patients with learning disabilities or special needs, there should be close co-operation with other specialists. A learning disability liaison nurse could be available to support patients and carers while attending the hospital for either out-patients, day surgery or as in-patients. If patients lack capacity and are unbefriended, then the involvement of an Independent Mental Capacity Advocate (IMCA) should be sought.\textsuperscript{39}

3.32 Some patients who are housebound and have difficulty in accessing primary or secondary care may benefit from a home visit for their pre-operative assessment and preparation. The same may apply to prisoners detained in HM Prison Service.

3.33 Translators or interpreters should be available for patients who do not speak or understand English and those who use sign language. Written information also needs to be available in different languages.

**4 Training and education**

The RCoA has established essential knowledge, skills, attitudes and workplace objectives needed in the area of pre-operative assessment in training to attain a Certificate of Completion Training (CCT) in anaesthesia. This is outlined in the RCoA CCT Curriculum, which was updated in July 2016.\textsuperscript{40} Pre-operative assessment is a core component of MSc, Postgraduate Certificate and Postgraduate Diploma courses in perioperative medicine. The Preoperative Association has produced competency standards on nursing skills for pre-operative assessment.

4.1 Training of anaesthetists includes attaining the competency to perform medical assessment of patients before anaesthesia for surgery or other procedures.\textsuperscript{40}

4.2 The pre-operative assessment service should enable multidisciplinary training for medical students, nurses, specialist doctors in training and allied health professionals. Educational materials are available to facilitate this.\textsuperscript{41} Training schools should give consideration to establishing specific modules in pre-operative assessment for senior trainees.

4.3 Pre-operative educational resources should be made available to general practitioners and primary care staff who are instrumental in ‘first contact’ patient consultations prior to secondary care referral. This facilitates robust cross-boundary working relationships and agreed ‘fitness for referral’ protocols, whilst minimising delays in the patient journey.

4.4 The anaesthetist should have the skills to hold a competent interview, assess and communicate the chance of benefit and harm, and facilitate shared decision-making.

**5 Organisation and administration**

Pre-operative assessment is an essential component of the surgical pathway and should be afforded suitable time and resource.

Optimum organisation is described in the Preoperative Preparation module of the NHS Institute for Innovation and Improvement’s ‘Productive Operating Theatre’ tool. This toolkit has been designed to help theatre teams to work together more effectively to improve the quality of patient experience, the safety and outcomes of surgical services, the effective use of theatre time and staff experience.\textsuperscript{42}

Organisation of pre-operative preparation is essential for enhancing the quality of care in a number of ways:

- if a patient is fully informed, they will be less stressed and may recover more quickly
- a health check is an opportunity to optimise medical health before anaesthesia and surgery
- planning admission and discharge individually ensures that patient and carers know what to expect, facilitating earlier postoperative care at home
- cancellations due to patient ill health or non-attendance are reduced
admission on the day of surgery and early discharge are more likely
the waiting list is validated.\textsuperscript{43}

**Timing of pre-operative assessment**

5.1 Most patients undergoing elective surgery should attend a pre-operative preparation clinic.\textsuperscript{6,7} Healthy patients having minor day-case surgery can in certain circumstances have telephone or electronic-based assessments.

5.2 In the case of emergency and urgent surgery, assessment should take place as early as possible.\textsuperscript{41}

5.3 Where possible, it is preferable for one-stop arrangements to be implemented so that patients can attend pre-operative assessment during the same hospital visit as their surgical outpatient assessment. Ideally, the frequency of high-risk clinics should allow for one-stop patient visits when appropriate.

5.4 If the patient has not been seen in a pre-operative clinic, for example those admitted for emergency surgery, they should undergo an equivalent assessment and preparation process with the findings documented, before their final anaesthetic assessment. Most expedited emergency surgery patients should be able have the same assessment and preparation as elective surgery patients.

5.5 Sufficient anaesthetic sessions should be provided to allow a review of the medical notes or consultations when required between senior anaesthetists and patients at increased risk of mortality and morbidity (>1 in 200 risk of dying within 30 days of surgery). There should also be resources for patients at greatest risk (>1 in 100 risk of dying within 30 days of surgery) to undergo more extensive testing and discussion that will help inform the consent process.

5.6 There should be sufficient time before an operation for the anaesthetist to conduct a satisfactory pre-operative assessment. If this does not happen, it is possible that surgery may be delayed or postponed. The provision of a good pre-operative assessment and preparation process should minimise this.

5.7 Following admission and prior to undergoing a procedure that requires general or regional anaesthesia, all patients should have a pre-operative visit by an anaesthetist or suitably trained assistant, ideally a person directly involved with the administration of the anaesthetic.\textsuperscript{6} This should be done to confirm earlier findings or, in the case of the emergency admission, initiate pre-operative anaesthetic assessment and care.

5.8 The WHO’s Surgical Safety Checklist should be used and is fully endorsed by the RCoA as the instrument for promoting team working and patient safety.\textsuperscript{11, 37}

**Liaison with internal and external colleagues**

5.9 The secondary care pre-operative service should liaise closely with primary care and commissioners to promote a ‘fitness for referral’ process.\textsuperscript{44}

5.10 Anaesthetic departments and their pre-operative assessment services should engage with local primary care providers to ensure (prior to surgical referral) that the patient has:

- engaged in shared decision-making from the outset
- gone through a ‘fitness for referral’ process, to identify and optimise conditions amenable to treatment, for example:
  - diabetes and patients at risk from undiagnosed diabetes
  - respiratory disease, eg asthma, chronic obstructive pulmonary disease, sleep disordered breathing
  - atrial fibrillation
  - heart disease
  - hypertension\textsuperscript{45}
  - anaemia (haemoglobin <120g/L), particularly for surgery where significant blood loss is predictable\textsuperscript{46}
  - acute or chronic pain.
been given appropriate lifestyle advice and support regarding smoking, alcohol, obesity, malnutrition, recreational drugs or inactivity. \textsuperscript{47,48,49}

been assessed for possible frailty and cognitive impairment with information included at the time of referral – both of these conditions are increasingly recognised as being associated with adverse outcomes following surgery.

General practitioners are well placed to initiate such processes and this has potential benefits in terms of reducing delays and avoidable cancellations as well as longer-term health benefits for patients.

5.11 Agreed internal referral pathways to other specialties should be in place for the minority of cases in which this may be required to expedite further investigation and patient optimisation. This should be done in close collaboration between the pre-operative assessment lead and nominated representatives from appropriate specialties, eg cardiology, diabetes, renal, respiratory and geriatric medicine.

5.12 High-risk patients should be discussed in regular specialty multidisciplinary team (MDT) meetings with anaesthetic representation. Such an arrangement facilitates robust team decision-making with regard to patient care while minimising delays in the surgical pathway. Clinical time should be agreed in job plans to reflect this commitment. There should be an anaesthetic MDT led by anaesthetists and including cardiologists, respiratory physicians, surgeons and haematologists to discuss high-risk surgical patients, do quick in-house referrals and make plans for pre-surgery optimisation and postoperative management.\textsuperscript{50}

5.13 The output from consultations with patients at increased risk of mortality or morbidity should be documented in the patient’s medical notes. In addition, mechanisms for clear communication of these consultations to patients, anaesthetists, surgeons, general practitioners and other healthcare workers should be in place.\textsuperscript{27}

**Leadership**

5.14 The secondary care clinic should be predominantly led by suitably trained nurses or other extended role practitioners using agreed protocols and with support from an anaesthetist.

5.15 There should be a nominated medical and nursing lead for pre-operative assessment.

5.16 An anaesthetic pre-operative assessment service should involve consultant anaesthetists and staff grade, associate specialist and specialty (SAS) doctors.\textsuperscript{6,7,51} Dedicated anaesthetic presence in the pre-operative assessment and preparation clinic is required for:

- the review of results and concerns identified by nursing staff
- consultations with patients identified by a triage process to allow optimal delivery of pre-operative assessment resources
- cardiopulmonary exercise testing or other functional assessment of fitness on high risk patients and a subsequent consultation on the chance of harm or benefit
- the training and support of nursing and other staff
- the maintenance of close two-way links with primary care clinicians facilitating agreed evidence-based ‘fitness for surgery’ protocols between primary and secondary care. This arrangement also encourages general practitioners to develop a broader knowledge of remediable perioperative risk factors which can be optimised before surgery
- developing links with clinical commissioning groups
- the establishment of internal protocols for patients such as those with diabetes, obese patients or those on anticoagulant therapy.

5.17 Each hospital should have agreed written policies, protocols or guidelines, following national guidelines where these are available, covering:

- the time allocated for the anaesthetist to undertake pre-operative care in both outpatient clinic and ward settings. Job plans should recognise an adequate number of programmed activities\textsuperscript{6,7}
- pre-operative tests and investigations\textsuperscript{52,53}
- pre-operative blood ordering for potential transfusion\textsuperscript{54}
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- management of anaemia including parenteral iron therapy to reduce the risk of allogenic blood transfusion
- management of diabetes and anticoagulant therapy, including newer anticoagulant drugs
- pre-operative fasting schedules and the administration of pre-operative carbohydrate drinks
- antacid prophylaxis
- latex and chlorhexidine allergies
- escalation of care in the event of perioperative complications to the intensive care unit
- continuation of regular medication
- locally agreed protocol for the administration of thromboprophylactic agents to patients undergoing surgery, including venous thromboembolism risk assessment, for identification of patients at low, moderate and high risk, and a recommended prophylactic method for each group (including timing of administration to patients undergoing regional anaesthesia)
- referral of patients from a nurse-led clinic to medical staff for further review
- pregnancy testing before surgery
- use of the WHO Surgical Safety Checklist
- management of acute pain in complex patients, eg opioid-tolerant patients
- peri-operative management of pacemakers including implantable cardioverter defibrillators.

5.18 Business planning by organisations and anaesthetic departments should ensure that the necessary resources, including enough time, are targeted towards pre-operative assessment. This should include administrative support at an appropriate level.

Risk assessment

5.19 There should be a process in place to identify patients with specific problems such as dementia (with risk of postoperative delirium) and poor nutritional status (with increased risk of morbidity).

5.20 Objective assessment of risk should be routine. Identification of higher risk should trigger advance planning specific to that case. Each hospital should have a system in place to identify high-risk surgical patients who require additional assessment. This should be based on:

- age
- comorbidity:
  - heart failure
  - ischaemic heart disease (myocardial infarction or angina)
  - stroke (cerebral vascular event or transient ischaemic attack)
  - peripheral arterial disease
  - renal impairment
  - dementia
  - frailty.
- type of surgery
- aerobic fitness.

5.21 Risk assessment should include assessing the risk of severe acute post-surgical pain and chronic post-surgical pain. These adverse outcomes are common and screening tools appropriate to an individual hospital case mix can be developed.

5.22 The information should include the intended pathway (day surgery or enhanced recovery) and methods of pain relief.

5.23 High risk surgical patients should have their expected risk of death estimated and documented prior to intervention, with due adjustments made in planning the urgency of care, seniority of staff involved and postoperative care.
5.24 High-risk surgical patients should have their predicted 30-day mortality recorded pre-operatively. The National Confidential Enquiry into Patient Outcome and Death report on high-risk surgery recommended the assessment and recording of 30-day predicted mortality for high-risk surgery (defined as a greater than 5 per cent risk). The national emergency laparotomy audit and the national hip fracture database both recommend the recording of predicted 30-day mortality. There are validated prediction scores for 30-day mortality after hip fracture, elective abdominal aortic aneurysm surgery and all types of surgery. There are also validated prediction scores for longer-term mortality after surgery for hip fracture and elective surgery for abdominal aortic aneurysm.

5.25 Predicted 30-day mortality, recorded pre-operatively and determined in a high-risk surgery pre-assessment clinic, could be used to plan postoperative high-dependency care for elective high-risk surgery.

Coordination and communication

5.26 Documentation and communication of information on pre-operative preparation are essential. Electronic systems should be considered to enable the capture and sharing of information, support risk identification and allow data to be collected and available for audit and research purposes.

5.27 Pre-operative care requires careful co-ordination and communication with individual surgeons, general practitioners, medical records, outpatient clinics and specialist services such as diabetes. The anaesthetic lead for the pre-operative preparation clinic should ensure adequate systems are in place, and be responsible for overseeing the adequacy of these processes.

5.28 Pre-operative assessment should take place as early as possible in the patient’s care pathway so that all essential resources and obstacles can be anticipated before the day of the operation, including discharge arrangements.

5.29 As a result of the assessment, the appropriate level of postoperative care can be determined and booked in a day-surgery facility, ward, high-dependency unit (level 2 care) or critical care unit (level 3 care), enabling both optimum care and efficient planning.

5.30 Patients should be admitted to a ward or alternative facility with sufficient time before the operating list on which they are scheduled. If an adequate pre-operative assessment has been performed, admission can be on the day of surgery but it remains essential that the anaesthetist who will be administering the anaesthetic is able to confirm the findings of the assessment and agree final details with the patient.

5.31 Discharge planning should be started as soon as the patient opts for surgery so that all essential resources and obstacles to discharge can be identified and dealt with, including liaison with social services. This will minimise late cancellation of operations and reduce the length of stay in hospital.

5.32 A pre-operative blood-ordering schedule should be agreed with the local transfusion service for each procedure and appropriate system in place to facilitate timely provision of blood products.

5.33 Anticipated difficulty with anaesthesia should be brought to the attention of the anaesthetist as early as possible before surgery. This includes planned admission to a critical care unit, the need for special skills, such as those of fibre optic intubation, obesity, complex pain problems or a known history of anaesthetic complications.

5.34 Operating lists should be made available to the anaesthetist before the list starts.

5.35 Operating lists should include details of the patient’s operation, date of birth, hospital identification number, any alerts and the ward in which they are located.

5.36 The whole operating team should agree to any change to a published operating list. This list should be rewritten or reprinted, including a date and time of the update. After a change in the theatre list a further team brief should take place.

5.37 Written guidelines should cover the policy for the collection of patients from the ward or admissions unit, as well as the handover by ward staff to a designated member of the operating department staff.

5.38 Eighty per cent of patients undergoing elective surgery can expect to follow a day surgery pathway. If inpatient care is necessary, an enhanced recovery pathway is now considered to provide optimum
care and the pre-operative service should ensure that patients are clear about their own responsibilities and expected length of stay.\(^{41}\)

5.39 There should be provision for carbohydrate drinks to take pre-operatively where appropriate.\(^{44}\)

5.40 A designated pharmacist should be available to provide advice and input into anaesthetic and pre-operative assessment. This level of input may range from ad hoc advice through to designated pre-operative assessment pharmacists, preferably with prescribing rights, who can undertake medicines reconciliation, produce peri-operative medication plans and provide specialist advice.

6 Financial considerations

6.1 Business planning by hospitals and anaesthetic departments should ensure that the necessary time and resources are directly targeted towards pre-operative preparation.\(^{58}\)

6.2 A well-designed pre-operative service should minimise patient delays through the journey to surgery, while allowing appropriate time for initiation of interventions likely to improve patient outcome. By optimising planning of patient care, with the right staff and resources available, cancellations can be reduced and the efficiency of operating lists improved.\(^{23}\)

7 Research, audit and quality improvement

7.1 The NHS Modernisation Agency outlined measurable key performance indicators in theatre management and pre-operative assessment. These are still applicable.\(^{74}\)

7.2 Regular audits of the following aspects of pre-operative care may include:

- the effectiveness of pre-operative information provided to patients
- pre-operative documentation of consultation by anaesthetists
- consent to anaesthesia
- the effectiveness of pre-operative assessment services
- pre-operative visiting (patient waiting time, proportion of one stop visits)
- pre-operative airway assessment
- pre-operative fasting in adults and children
- appropriate pre-operative medication
- thromboprophylaxis
- choice of technique: general, local or regional anaesthesia
- cancellation on day of surgery due to a failure in the pre-operative assessment process.

8 Implementation support

The Anaesthesia Clinical Services Accreditation (ACSA) scheme, run by the College, aims to provide support for departments of anaesthesia to implement the recommendations contained in the GPAS chapters. The scheme provides a set of standards, and asks departments of anaesthesia to benchmark themselves against these, using a self-assessment form available on the College website. Every standard in ACSA is based on recommendation(s) contained in the GPAS. The ACSA standards are reviewed annually and republished approximately four months following GPAS review and republication, to ensure that they reflect current GPAS recommendations. ACSA standards include links to the relevant GPAS recommendations, for departments to refer to while working through their gap analyses.

Departments of anaesthesia are given the opportunity to engage with the ACSA process for a fee. Once engaged, departments are provided with a ‘College Guide’, a member of the Quality Management of Service Group (QMSG – the College working group that oversees the process), or an experienced reviewer to assist them with identifying the actions required to meet the standards outlined in the document.
Departments must demonstrate adherence to all ‘priority one’ standards listed in the document to receive accreditation from the College. This is confirmed during a visit to the department by a core group of four ACSA reviewers (two clinical reviewers, a lay reviewer and an administrator), who submit a report back to the QMSG.

The QMSG has committed to building a ‘good practice library’, which will be used to collect and share documentation such as policies and checklists, as well as case studies of how departments have overcome barriers to implementation of the standards, or have implemented the standards in innovative ways.

One of the outcomes of the ACSA process is to test the standards, and by extension the GPAS recommendations, to ensure that they are able to be implemented by departments of anaesthesia and consider any difficulties that may result from implementation. The QMSG has committed to measuring and reporting feedback of this type from departments engaging in the scheme back to the Chapter Development Groups updating the guidance via the GPAS technical team.

9 Patient information

All patients (and relatives where relevant) should be fully informed about the planned procedure and be encouraged to be active participants in decisions about their care (shared decision-making).1,75

Information

9.1 Patients should be fully informed about the planned procedure and participate in a shared decision-making process. Consultation skills for shared-decision making should be used to prepare patients for anaesthesia and surgery. The patient should determine the information provided to obtain their consent for treatment. Patients should be informed of the increasing number of decision aids available at NHS Direct to help them with their choices.3,4,76

9.2 Information should be provided with enough time for the patient to consider and reflect on before anaesthesia and surgery take place.

9.3 Information can be provided in a range of formats, including written leaflets and on the internet. Details of websites that provide reliable, impartial and evidence-based information should be made available to patients when appropriate. Where possible formats should include large print, Braille and audio. Information should conform to the ‘Accessible Information’ standard set by the Department of Health for those with disabilities.77

9.4 All patients undergoing elective procedures should be provided with easily understood information materials covering their operation, anaesthesia and postoperative pain relief, before admission to hospital. Provision of this information should be documented in the patient’s notes.78

9.5 The anaesthetist should explain what the patient will experience before and after anaesthesia, and include any choices of anaesthetic technique and details of postoperative management.

9.6 The anaesthetist should invite and answer questions from the patient or, if appropriate, the patient’s relatives.

9.7 The anaesthetist should document in the patient’s case notes that all of the above have been properly performed.

Consent

9.8 The competent patient has a fundamental right, under common law, to give, or to withhold, consent to examination, investigation and treatment.79

9.9 No other person can consent to treatment on behalf of any adult. If a lasting power of attorney is in place, the attorney may be able to assent to treatment on behalf of the patient. There should be a local process and policy in place for patients who lack capacity that conforms to national guidance and the Mental Capacity Act.79
9.10 The scope of the authority that has been given by a patient should not be exceeded except in an emergency. In an emergency clinical situation in which it is not possible to find out a patient’s wishes, a patient must be treated without their consent, provided the treatment is immediately necessary to save their life or to prevent a serious deterioration of their condition. The treatment provided should be the least restrictive of the patient’s future choices.79

9.11 In the case of children under the age of 16 years, consent should be given by the parent or guardian. In England and Wales, a child who is deemed ‘Gillick-competent’ under the age of 16 years may give, but not withhold, consent.79

9.12 A recent judgement of the UK Supreme Court in the case of Montgomery v Lanarkshire Health Board clarifies some aspects of consent to medical treatment. Consent is a process and it should be viewed as an opportunity for a dialogue and not a one-way flow of information. The doctor must find out which risks are relevant to each ‘particular patient’ and tailor the consent process accordingly. The doctor must not, by fear of non-disclosure, ‘bombard the patient’ with technical information. This is more likely to promote confusion. The GMC states: ‘The test of materiality is whether a reasonable person in the patient’s position would be likely to attach significance to the risk, or the doctor should reasonably be aware that the particular patient would be likely to attach significance to it.’ 3,4,80

9.13 The patient must be made aware of alternative treatment options, or the option for no treatment at all. It is acceptable to recommend one of the alternatives but, as the GMC states: ‘The doctor may recommend a particular option which they believe to be best for the patient, but may not put any pressure onto the patient to accept their advice.’ 80

9.14 Where risks of adverse patient outcome with surgery are identified as being high, the pre-operative assessment consultation facilitates shared patient discussion, which may result in a well-informed individual opting for non-surgical management. Under such circumstances the decision-making process should be endorsed through close collaborative discussion with surgical colleagues – ideally a pre-operative MDT meeting.

Patients consenting to be subjects of research

9.15 A patient’s consent to participate in research projects should be obtained by those conducting the study and not by the anaesthetist providing care for the operation. Consent should be obtained on a separate signed document and approval should be sought from the anaesthetist who will be delivering the anaesthetic to the patient.79,81

Areas for future developments

Following the systematic review of the literature, the following areas for future research are suggested:

- proactive care of older people and high-risk surgery clinics either separate or combined
- cardiopulmonary exercise testing – its use and evidence.

Bibliography


Glossary

**Immediate Emergency Surgery** – immediate life, limb or organ-saving intervention; resuscitation simultaneous with intervention. Normally within minutes of decision to operate; (A) Life-saving (B) Other, eg limb or organ saving.¹

**Urgent Emergency Surgery** – intervention for acute onset or clinical deterioration of potentially life-threatening conditions, for those conditions that may threaten the survival of a limb or organ, for fixation of many fractures and for relief of pain or other distressing symptoms. Normally within hours of decision to operate.¹

**Expedited Emergency Surgery** – patient requiring early treatment where the condition is not an immediate threat to life, limb or organ survival. Normally within days of decision to operate.¹

**Elective surgery** – intervention planned or booked in advance of routine admission to hospital. Timing to suit patient, hospital and staff.¹
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65 National Hip Fracture Database (www.nhfd.co.uk).
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73 Pre-operative Assessment and Planning. NHS Institute for Innovation and Improvement, 2008 [bit.ly/1hp6nF].
76 Decision aids. NHSE [bit.ly/1UJ3a6g].
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80 Consent: patients and doctors making decisions together. GMC, 2008 [bit.ly/1vhnlp].
Appendix 1: Recommendations Grading

The grading system is outlined in the methodology section of this chapter. The grades for each of the recommendations in this chapter are detailed in the table below:

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<td>Strong</td>
</tr>
<tr>
<td>7.1</td>
<td>C</td>
<td>Strong</td>
</tr>
<tr>
<td>7.2</td>
<td>GPP</td>
<td>Strong</td>
</tr>
<tr>
<td>9.1</td>
<td>C, M</td>
<td>Strong</td>
</tr>
<tr>
<td>9.2</td>
<td>GPP</td>
<td>Strong</td>
</tr>
<tr>
<td>9.3</td>
<td>GPP</td>
<td>Strong</td>
</tr>
<tr>
<td>9.4</td>
<td>C</td>
<td>Strong</td>
</tr>
<tr>
<td>9.5</td>
<td>GPP</td>
<td>Strong</td>
</tr>
<tr>
<td>9.6</td>
<td>GPP</td>
<td>Strong</td>
</tr>
<tr>
<td>9.7</td>
<td>GPP</td>
<td>Strong</td>
</tr>
<tr>
<td>9.8</td>
<td>C</td>
<td>Strong</td>
</tr>
<tr>
<td>9.9</td>
<td>C</td>
<td>Strong</td>
</tr>
<tr>
<td>9.10</td>
<td>C</td>
<td>Strong</td>
</tr>
<tr>
<td>9.11</td>
<td>C</td>
<td>Strong</td>
</tr>
<tr>
<td>9.12</td>
<td>M</td>
<td>Strong</td>
</tr>
<tr>
<td>9.13</td>
<td>M</td>
<td>Strong</td>
</tr>
<tr>
<td>9.14</td>
<td>GPP</td>
<td>Strong</td>
</tr>
<tr>
<td>9.15</td>
<td>C</td>
<td>Strong</td>
</tr>
</tbody>
</table>

The completed recommendation grading forms are available on request.
About these guidelines

Methodology
The process by which this chapter has been developed has been documented within the GPAS Chapter Development Process Document.

The evidence included in this chapter is based on a systematic search of the literature (Embase, Ovid MEDLINE, CINAHL, Cochrane Library). Abstracts were independently screened by two investigators and reviewed against inclusion and exclusion criteria. Data were extracted by one investigator, in accordance with predefined criteria. The review objective was to determine the key components needed to ensure provision of high-quality anaesthetic services for the patient requiring surgery.

Pre-operative anaesthesia provision is defined as the care that is given from the time of considering a surgical treatment to the arrival in the anaesthetic room or operating theatre.

Search strategy
Searches were performed on Embase (1980 to 2015), Ovid MEDLINE (1946 to present), CINAHL and Cochrane Library; for the literature search strategy, outcomes, databases and criteria for inclusion and exclusion of evidence; please see GPAS Supporting Documents for the Pre-operative Anaesthesia Chapter Search Protocol. A hand search of the literature was also conducted by the authors using the reference lists of relevant original articles and review articles.

The original literature search was performed in January 2015. An updated search was performed in August 2016.

The authors and researcher independently reviewed the abstracts and titles of the studies found in the initial search. After agreement on the primary selection of papers, full-text versions were accessed and reviewed against the following predefined inclusion and exclusion criteria. The full-text papers were also reviewed by the Chapter Development Group for suitability; the final list of publications used can be found in the reference list.

Inclusion criteria
This review considered studies that included the following criteria:

- all ages of patient undergoing elective or emergency anaesthesia
- all staff groups working within the pre-operative phase of anaesthesia, including (but not restricted to) anaesthetists, nurses, physician’s assistant in anaesthesia, operating department practitioners, surgeons, pharmacists, general practitioners, physiotherapists, occupational therapists and dieticians.

Exclusion criteria

- Studies that investigated the provision of a pre-operative anaesthesia service provided by a speciality other than anaesthesia were excluded.
- Publications that duplicated data that had been reported in an earlier publication were also excluded.

Data extraction and analysis
Data were extracted by the authors using a pro-forma. The study characteristics data included: the journal and country of publication, the number of patients recruited into the study, the study design, patient characteristics, outcome data, the logic of the argument, author’s conclusions and reviewer’s comments.

The patient characteristics data extracted were: age, sex and type of surgery. The analysis considered studies that included any clinical outcome, including (but not restricted to) survival, length of stay in critical care or hospital, morbidity, adverse effects and complications.
The results of the original literature review can be seen below:

Preferred Reporting Systems for Systematic Review and Meta-analysis (PRISMA) flow chart

- Records identified through database searching (n = 115,659)
- Additional records identified through other sources (n = 86)
- Records after screening of titles (n = 887)
- Duplicates (n = 163)
- Abstracts screened (n = 724)
- Records excluded (n = 518)
- Full-text articles assessed for eligibility (n = 206)
- Full-text articles included in final document (n = 72)
The evidence that is included in this chapter has been graded according to an adapted version of the National Institute for Health and Care Excellence (NICE)’s ‘Hierarchy of evidence and recommendations grading scheme’, outlined below:

<table>
<thead>
<tr>
<th>Level</th>
<th>Type of evidence</th>
<th>Grade</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia</td>
<td>Evidence obtained from a single large/multicentre randomised controlled trial, a meta-analysis of randomised controlled trials or a systematic review with a low risk of bias</td>
<td>A</td>
<td>At least one randomised controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation (evidence level I) without extrapolation</td>
</tr>
<tr>
<td>Ib</td>
<td>Evidence obtained from meta-analyses, systematic reviews of RCTs or RCTs with a high risk of bias</td>
<td>B</td>
<td>Well-conducted clinical studies but no high-quality randomised clinical trials on the topic of recommendation (evidence levels Ib, II or III); or extrapolated from level Ia evidence</td>
</tr>
<tr>
<td>IIA</td>
<td>Evidence obtained from at least one well-designed controlled study without randomisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIB</td>
<td>Evidence obtained from at least one well-designed quasi-experimental study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIC</td>
<td>Evidence obtained from case control or cohort studies with a high risk of confounding bias</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities</td>
<td>C</td>
<td>Expert committee reports or opinions and/or clinical experiences of respected authorities (evidence level IV) or extrapolated from level I or II evidence. This grading indicates that directly applicable clinical studies of good quality are absent or not readily available.</td>
</tr>
<tr>
<td>UG</td>
<td>Legislative or statutory requirements</td>
<td>M</td>
<td>This grading indicates that implementation of this recommendation is a statutory requirement, or is required by a regulatory body (eg CQC, GMC)</td>
</tr>
<tr>
<td>GPP</td>
<td>Recommended good practice based on the clinical experience of the CDG.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Strengths and limitations of the body of evidence

Most of the published evidence on the pre-operative process is descriptive. There are publications describing aspects of this process based on expert opinion. The predominance of descriptive or qualitative studies is appropriate for assessing a process of care. The reported evidence on outcome is patient focused and the papers based on expert opinion demonstrate a consensus of opinion.

The limitations of the evidence are:

- there are few prospective RCTs
- most studies have a small number of patients
- most studies take place in a single centre
- there is no standardised definition of a high-risk patient
- older studies and studies from outside the UK may not reflect current practice.

Methods used to arrive at recommendations

Recommendations were initially drafted based on the evidence by the lead authors for the chapter. These were discussed with the chapter development group, and comments were received on both the content and the practicality of the recommendations. The level of evidence that was the basis for each recommendation was graded according to a grading system, and the recommendation was then graded taking into account the strength of the evidence and the clinical importance using a recommendations criteria form (see GPAS Chapter Development Process Document). Recommendations were worded using the following system of categorisation:

<table>
<thead>
<tr>
<th>Strength</th>
<th>Type of evidence</th>
<th>Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory</td>
<td>The evidence supporting the recommendation includes at least one with an ‘M’ grading</td>
<td>Wording should reflect the mandatory nature of the recommendation, i.e. ‘must’</td>
</tr>
<tr>
<td>Strong</td>
<td>Confidence that for the vast majority of people, the action is more likely to benefit the patient than cause harm</td>
<td>Wording should be clearly directive ‘should’ or ‘should not’</td>
</tr>
<tr>
<td>Weak</td>
<td>The action is more likely to benefit the patient than cause harm for most patients, but may include caveats on the quality or size of evidence base or patient preferences</td>
<td>Wording should include ‘should be considered’</td>
</tr>
<tr>
<td>Aspirational</td>
<td>While there is some evidence that implementation of the recommendation could improve patient care, either the evidence or the improvement is not proven or substantial</td>
<td>Wording should include ‘could’</td>
</tr>
<tr>
<td>Equipoise</td>
<td>There is no current evidence on this recommendation’s effect on patient care</td>
<td>Wording should include ‘there is no evidence of this recommendation’s effect on patient care’</td>
</tr>
</tbody>
</table>
Limitations and any potential bias of the guideline

- There is a wide variety of National Health Service (NHS) hospitals (size, population).
- The sustainability and acceptability of applying new findings has not been tested.

Consultation

The chapter has undergone several rounds of consultation. The multidisciplinary chapter development group (CDG) formed the first part of the consultation process. The authors and GPAS Editorial Board identified key stakeholder groups. Where stakeholders are represented by an association or other medical college, they were asked to nominate delegates to join the CDG. The Chapter Process Document explains the recruitment process for those CDG members who were not directly nominated. The CDG members were involved in drafting the recommendations, and were provided with an opportunity to comment on all subsequent drafts of the chapter.

The chapter underwent peer review. Peer reviewers were identified by the GPAS Editorial Board or Professional Standards Committee. Nominees were either anaesthetists of consultant grade or were nominated by a key stakeholder group. Nominees had not had any involvement in the development of GPAS to date and were asked to comment upon a late draft of the chapter.

Following peer review, the chapter was reviewed by the College’s Professional Standards Committee and the College’s Lay Committee. Comments from all groups were considered and incorporated into a consultation draft.

The consultation draft of this chapter was circulated for public consultation from 23rd November to 21st December 2015. As well as being made available on the College’s website and promoted via Twitter and the President’s newsletter to members, the draft was also circulated to all key stakeholder groups identified by the authors and the College. A list of organisations contacted by the College is available from the GPAS team at the College: GPAS@rcoa.ac.uk.

The Editorial Independence of GPAS

The development of GPAS is solely funded by the Royal College of Anaesthetists. However, only the GPAS technical team and the GPAS researcher are paid by the College for their work on GPAS. All funding decisions by the College are made by the CEO, in collaboration with the senior management team and College Council.

The authors of the chapters are all fellows of the Royal College of Anaesthetists. Members of College Council cannot act as chair of any chapter development group, as this individual has the deciding vote under the consensus method of decision making used in the chapters. Where College Council members have been involved in chapter development, this has been declared and recorded.

All persons involved in the development of GPAS are required to declare any pecuniary or non-pecuniary conflict of interest, in line with the GPAS conflict of interest policy as described in the GPAS Chapter Development Process Document. Any conflicts of interest are managed on a case-by-case basis to maintain the transparency and impartiality of the GPAS document. The conflicts, and the way they were managed, are outlined at the beginning of the chapter.

The role of PSC and the GPAS Editorial Board

The overall development of the entire GPAS document is overseen by the Professional Standards Committee (PSC) of the Royal College of Anaesthetists, which includes representatives from all grades of anaesthetist, clinical directors and stakeholder organisations including the Association of Anaesthetists of Great Britain and Ireland.

Responsibility for managing the scope of the document, and providing clinical oversight to the project technical team is delegated by the PSC to the GPAS Editorial Board, which includes individuals responsible for the various internal stakeholders (see above for membership). On the inclusion/exclusion of specific recommendations within each chapter, the Editorial Board can only provide advice to the authors. In the event of disagreement between the authors, the majority rules consensus method is used, with the lead author holding the deciding vote.
Both of these groups, along with the College’s Lay Committee review each chapter and provide comment prior to public consultation. The College Council is responsible for sign-off before final publication.

Updating these guidelines

This chapter will be updated for re-publication in January 2018.

Guidelines will be updated on an annual basis. The researcher will conduct the literature search again using the same search strategy, to uncover any new evidence and members of the public will be able to submit new evidence to the GPAS project team. Where new evidence is uncovered, the lead author will decide whether the recommendations that were originally made are still valid in light of this new evidence.

If new evidence contradicts or strengthens existing recommendations, the authors will decide whether or not to involve the remainder of the Chapter Development Group in revising the recommendations accordingly.

If new evidence agrees with existing recommendations, then a reference may be added but no further action is required.

If there is no new evidence then no action is required.

This chapter is due to be fully reviewed for publication in January 2021.

Every five years guidance will be submitted to a full review involving reconvening the Chapter Development Group (or appointment of a new, appropriately qualified Chapter Development Group), and the process described in the methodology section of this chapter begins again.