Chapter 1
Guidelines for the Provision of Anaesthesia Services (GPAS)
Introduction and Next Steps
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Authors
Dr Jeremy Langton (from September 2017)
GPAS Editor and Chair of the Editorial Board
Plymouth Hospitals NHS Trust

Professor Monty Mythen
Chair of the Perioperative Medicine Task and Finish Group
Royal College of Anaesthetists Council Member

Professor Jaideep Pandit
Chair, Safe Anaesthesia Liaison Group
Royal College of Anaesthetists Council Member

Dr Andrew Hutchinson
Co-opted member
Author, GPAS Emergency Anaesthesia Chapter

Dr William Harrop-Griffiths
Immediate Past Editor
Royal College of Anaesthetists Council Member

Dr David Selwyn
Chair, Royal College of Anaesthetists Clinical Directors Network
Co-Opted Royal College of Anaesthetists Council Member

Dr Simon Fletcher
Clinical Lead, Anaesthesia Clinical Services
Accreditation (ACSA)
Royal College of Anaesthetists Council Member

Chapter Development Technical Team
Dr Rachel Evley
Research Fellow
University of Nottingham

Ms Carly Melbourne
Royal College of Anaesthetists

Ms Emily Young
Royal College of Anaesthetists

Ms Polly Kwok
Royal College of Anaesthetists

Ms Ruth Nichols
Royal College of Anaesthetists

Ms Nicola Hancock
Royal College of Anaesthetists
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Declaration of interest
All editorial board members 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:

- Dr Langton was an Elected RCoA Council member until March 2018. He is the former Editor-in-Chief of the BJA Education. Dr Langton is Deputy Postgraduate Dean for Health Education England South West
- Dr Harrop-Griffiths is an Elected RCoA Council member; Chair, Clinical Quality and Research Board, RCoA; President, Triservice Anaesthesia Society; and Honorary Civilian Consultant Advisor in Anaesthesia to the Army
- Professor Mythen is a Professor at UCL, a Consultant at UCLH and an Elected RCoA Council member; he does occasional private medical practice and acts as an expert witness. He has received honoraria for speaking, or consultation and, or travel expenses from Baxter, B Braun, Covidien, Edwards Lifesciences, Fresenius-Kabi, Hospira, LidCo. He is the Smiths Medical Professor of Anaesthesia and Critical Care UCL, Director of the Discovery Lab at The Institute of Sport Exercise and Health; Director of the Bloomsbury Innovation Group Community Interest Company; Partner with equity of the spin-out Medical Defence Technologies LLC – (‘Gastrostim’ patented); Co-Inventor of ‘QUENCH’(patented); Director (with equity) of Clinical Fabric Solutions Ltd; Director (with equity) of Clinical Hydration Solutions Ltd, Director (with equity) of Oxygen Control Ltd; Director of Evidence Based Perioperative Medicine Community Interest Company. Professor Mythen’s institution has also received charitable donations and grants from Smiths Medical Endowment and Deltex Medical. Professor Mythen is also co-author of the GIFTASUP guidelines on peri-operative fluid management; Chair of the Board of The National Institute of Academic Anaesthesia; Editor in Chief of Peri-operative Medicine; on the Editorial Board of the BJA and the journal Critical Care; a member of the Improving Surgical Outcomes Group; expert advisor to the NICE IV fluids guideline (174) development group; Co-Director Xtreme Everest Oxygen Research Consortium; Co-Director of the Duke /UCL Morpheus Consortium
- Dr Fletcher is an Elected RCoA Council member; ACSA lead and Chair of Quality Management of Service Group, RCoA; and Deputy Chair, Clinical Quality and Research Board, RCoA
- Dr Selwyn is a co-opted member of RCoA Council and Member of the Clinical Directors Executive Board
- Professor Pandit is an Elected RCoA Council member, Deputy Scientific Officer at the Difficult Airway Society and Senior Editor of ‘Anaesthesia’
- Dr Hutchinson is an author of the emergency chapter in GPAS.

The nature of the involvement in all declarations made above was not determined as being a risk to the transparency or impartiality of the GPAS document. Where a member was conflicted in relation to a particular chapter, piece of evidence or recommendation, they were asked to declare this and remove themselves from the discussion pertaining to it.
Introduction and background to GPAS 2018

The Guidelines for the Provision of Anaesthetic Services (GPAS) form the basis of recommendations produced by the Royal College of Anaesthetists (the College) for anaesthetists with managerial responsibilities for service, and for other healthcare managers. It was first published in 1994 and entitled ‘Guidance for Purchasers’. It was revised under the current title in 1999, 2004 and 2009. Since 2012, it has been revised yearly, and published in electronic format only on the College website.

The 2016 edition of GPAS, for the first time, included three chapters developed using a rigorous, evidence-based process, which was accredited by the National Institute for Health and Care Excellence (NICE) in May 2016. These were the chapters describing services for effective delivery of pre-operative and postoperative care, as well as the chapter concerned with emergency anaesthesia care. The Editorial Board is very grateful to the authors and chapter development groups of these ‘pilot’ chapters for embracing this new methodology and for their invaluable feedback to allow for improvements in the process and its implementation in coming years.

The new process was rolled out to a further five chapters in the 2017 edition of GPAS. The 2018 edition includes five new chapters that have been developed using the College’s NICE-accredited process for chapter development. These are:

- Guidelines for the provision of anaesthetic services for day surgery
- Guidelines for the provision of services for anaesthetic care in the non-theatre environment
- Guidelines for the provision of neuroanaesthesia services
- Guidelines for the provision of anaesthetic services for trauma and orthopaedic surgery
- Guidelines for the provision of anaesthetic services for cardiac and thoracic surgery

By the publication of GPAS 2019, all of the chapters in GPAS will have been developed by the NICE-accredited process. As the NICE-accredited process takes approximately 18 months from start to finish, chapters that are scheduled to be developed using the NICE-accredited process for publication in the following year are not generally updated in this year’s document.

Chapters due to be developed using the NICE-accredited process for publication in 2019 are as follows:

- Guidelines for the provision of anaesthetic services for acute pain
- Guidelines for the provision of anaesthetic services for head and neck surgery
- Guidelines for the provision of vascular anaesthesia services

Chapter development groups have been convened for all of these chapters, and the literature searches have been carried out. If you are interested in peer reviewing any of these chapters or wish to be notified when they commence public consultation, please contact the GPAS project coordinator (GPAS@rcoa.ac.uk).

Medicolegal 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.

Scope of the GPAS document

All chapters included in this document, particularly those developed using the NICE-accredited process, include recommendations that describe the requirements for the provision of a high quality anaesthetic service for patients. In particular, each chapter contains recommendations on the staffing, equipment,
training and education, organisation and administration and patient information that are required, while highlighting financial considerations, areas for research, and audit and quality improvement projects.

When considered as a whole, the GPAS document includes the provision of anaesthetic services for the entire perioperative pathway, as well as the services provided by the recognised subspecialties of anaesthesia.

Under the NICE-accredited process, the scope of each chapter is agreed by the authors of that chapter, the GPAS Editorial Board and the College’s Professional Standards Committee (PSC).

**Target Audience**
The primary audience of the guidelines are clinical and non-clinical managers of anaesthetic services. Recommendations within this document are therefore written for local implementation.

**Exclusions**
The GPAS document does not contain recommendations that could only be implemented at a national level. If the authors of individual chapters, through the development of that chapter, identify any such recommendations, these are referred to the Editorial Board for discussion with PSC, but are not included in the GPAS document.

The general provision of critical care is outside of the scope of the GPAS document. Recommendations on the provision of critical care services can be found in *Guidelines for the Provision of Intensive Care Services: Edition 1 2015 – Intensive Care Society & Faculty of Intensive Care Medicine*.

The GPAS document does not include recommendations on the provision of anaesthetic services by other specialties. Where non-anaesthetists provide such services, they are advised to follow the guidance of their own College.

The scope of each chapter details any further exclusions.

**Clarification of common terminology in GPAS**

**Policies** – Whilst the GPAS document utilises the term ‘policies’, it should be noted that the term is used as an umbrella term to refer to some sort of process that is maintained, kept up-to-date (reviewed as a minimum every three years), can be used as a reference and is used during staff induction. This could be in the form of a policy document, practice document or even a piece of software that fulfils the function of the standard. The important criteria is that everyone knows the reference point exists and where to find it, and that the reference point is kept up to date in accordance with the hospital policies.

**Supervision** – many chapters in GPAS make general statements about consultants supervising other doctors. It is expected that trainees will be supervised in accordance with the College’s curriculum. Other non-consultant, non-trainee anaesthetists will be supervised in accordance with the College’s guidance, but local governance arrangements will determine the level of supervision required by an individual. This will vary according to their competence, and take into account patient age, comorbidity, and the location and complexity of the procedure or surgery. Some non-consultant, non-trainee anaesthetists will have the expertise and ability to take responsibility for patients themselves, without consultant supervision, under certain circumstances and these circumstances should be agreed at a local level on an individual basis.

**GPAS guidelines in context**
The GPAS document is updated on an annual basis, using any new evidence uncovered during the year. For chapters that have gone through the NICE-accredited process, this is likely to be through the annual literature search conducted by the GPAS research scientist.

The GPAS chapters 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 chapter is designed to be read as an independent document, but is cross-referenced and interlinked with the other chapters where appropriate.
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.

The Editorial Board welcomes comments about the practicality and cost-effectiveness of these guidelines at any time, particularly during the public consultation period. Equally, the Editorial Board understands that certain recommendations may be met in diverse ways at a local level, and therefore the aim is that the recommendations are general enough to be flexible while being specific enough to be practical and clear. It is understood that this is a fine balance, and any comments on this from stakeholder groups or members of the public on this point is encouraged and welcomed.

Promoting equality and addressing health inequalities

The Royal College of Anaesthetists is committed to promoting equality and addressing health inequalities. During the process of developing these guidelines, particularly those going through the NICE-accredited process, 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; and
- 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.

Methodology

The chapters of GPAS that have not gone through the NICE-accredited process were developed using evidence sourced by their authors, who were selected as subject matter experts by the Royal College of Anaesthetists. The authors update their chapters each year, based on feedback received by the College and any new evidence that has emerged since the time of the most recent review.

The manner by which each chapter following the NICE-accredited process has been developed has been documented within the GPAS Chapter Development Process Document. The main differences between the new and the previous process are:

- the NICE-accredited process includes systematic searches of the literature conducted by the GPAS researcher. Details of the search strategy are available in the search protocol for each chapter. Literature is reviewed and graded by the authors using predefined inclusion/exclusion criteria, data extraction criteria and grading system
- the NICE-accredited process requires the involvement of a multidisciplinary chapter development group in drafting the recommendations. CDG membership for each chapter includes: lay representation; individuals representing stakeholder organisations; subject matter experts, often associated with a relevant specialist society; and members of the target audience of the guideline, including all grades of anaesthetist and clinical directors. The group is responsible for commenting on the recommendations that have been drafted by the authors based on the evidence, and their own practical experience
- documents written using the NICE-accredited process includes grading of each recommendation by the authors taking into account the strength of the evidence and the clinical importance of the recommendation using predefined criteria
- the NICE-accredited process includes peer review of the chapter by at least two individuals chosen by the Editorial Board
- the NICE-accredited process utilises a pro-active stakeholder engagement methodology during public consultation, sending the chapters to those groups that may have an interest in commenting on the document.

Consultation

The general public are invited to comment on the chapters through the College’s website and publicised by the addition of news items on the front page, as well as the other official communication channels.
Comments are submitted to the GPAS project team and are collated and communicated to the chapter authors who decide, with the assistance of the CDG where applicable, which comments to incorporate and which to discard. The authors will respond to all comments through the GPAS project team and will provide rationale for their decision. The date range for the public consultation is included in every published chapter.

The Editorial Independence of GPAS

The development of GPAS is solely funded by the Royal College of Anaesthetists. However, only the GPAS technical team are paid by the College for their work on GPAS.

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 each chapter.

The role of PSC and the GPAS Editorial Board

The Professional Standards Committee (PSC) of the Royal College of Anaesthetists oversees the overall development of the document, including those chapters that are developed using both the previous and NICE-accredited methodologies. This Committee includes representatives from all grades of anaesthetist, clinical directors and stakeholder organisations including the Association of Anaesthetists of Great Britain and Ireland. It is likely that this role will be taken over by the newly founded Clinical Quality & Research Board during 2017.

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 and Council, review each chapter and provide comment prior to public consultation, and are responsible for sign-off before final publication. In the event of disagreement, consensus is reached using the majority rules consensus method, with the chair of PSC holding the deciding vote.

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 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 whilst working through their gap analyses.

Departments of Anaesthesia are given the opportunity to engage with the ACSA process for an appropriate 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 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 group of four ACSA reviewers (two clinical reviewers, a lay reviewer and an administrator), who submit a report back to QMSG.
The QMSG has committed to building a ‘good practice library’ (GPL), which will be used to collect and share documentation such as policies and checklists, as well as case studies of how departments that 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 CDGs updating the guidance via the GPAS technical team.

Areas for future development

It is the aim of the Editorial Board that the GPAS document cover all aspects of anaesthesia provided to patients by anaesthetists in the UK. A ‘gap analysis’ exercise will therefore take place following the publication of the document each year to ensure the appropriate level of detail is present in the chapters and plan further work accordingly.

Resuscitation chapter

In 2016, the GPAS Editorial Board agreed that the chapter ‘Guidance on the provision of anaesthesia services for resuscitation’ will not be re-developed using the NICE-accredited process. This chapter is based on the guidance produced by the Resuscitation Council (UK). Resuscitation Council (UK)’s guidance is itself developed through a NICE-accredited process, so any re-development of the GPAS chapter using the College’s NICE-accredited process would result in a large duplication of effort. The Guidance on the provision of anaesthesia services for resuscitation 2016 chapter will remain valid until the publication of GPAS 2019, when the GPAS Editorial Board will have assurance that any relevant recommendations and references to the Resuscitation Council (UK)’s guidance have been integrated elsewhere in GPAS.

Sedation chapter

In 2016, the GPAS Editorial Board agreed that the chapter ‘Guidance on the provision of sedation services’ will not be re-developed using the NICE-accredited process. Upon reviewing the scope of all GPAS chapters, the GPAS Editorial Board found that the scope of the sedation chapter was already covered in other chapters, largely the anaesthesia in the non-theatre environment chapter. The ‘Guidance on the provision of sedation services 2016’ chapter will remain valid until the publication of GPAS 2019, when the GPAS Editorial Board will have assurance that any relevant recommendations have been integrated elsewhere in GPAS.

Sedation by non-anaesthetists is not within the scope of GPAS. Where sedation services are not provided by the department of anaesthesia, professionals who provide such services are advised to follow the guidance of their own College and the Academy of Royal Medical Colleges’ publication Safe Sedation Practices for Healthcare Procedures 2013.

Further research

Each chapter in GPAS that has been developed using the NICE-accredited process outlines areas where the systematic literature search has highlighted a lack of evidence and where further research could be useful to support existing or new recommendations.

Sustainability

The authors of the GPAS chapters consider a wide range of evidence and issues when making their recommendations, which describe the requirements for the provision of a high quality anaesthetic service for patients. The issues considered do not pertain to environmental sustainability; however it is acknowledged that this is an important issue. The GPAS Editorial Board therefore recommends that anaesthetic departments aspire to implement the following suggestions.

Ethos and co-working – Departments should actively encourage sustainable practice amongst clinicians and support the aims of the Trust or Board’s Sustainable Development Management Plan.

Staffing, personnel and education – Anaesthesia departments should have a nominated lead responsible for sustainable anaesthesia and should actively follow advice and guidance from the appropriate national body.
Resource utilisation – For inhalational anaesthesia, low flow anaesthesia should be the default position.

Electrical energy use – Departments should actively encourage staff to minimise electrical energy use. Lights should be turned off when rooms and spaces are unused out of hours.

Anaesthesia machines should be placed in low power standby mode when not in use.

Anaesthetic departments should have in place practices to turn off Anaesthetic Gas Scavenging Systems (AGSS) out of hours and safely reactivated as part of the pre use checks prior to the start of the following operation list.

Waste management – The disposal of devices contaminated with drug residue and waste should follow local and national guidelines.

Staffing, personnel and education – Departments should have a number of meetings set aside to address the topic of sustainable anaesthesia within the academic calendar.

Resource utilisation – IT systems should be in place to record and compare trends in drug, inhalational anaesthetic agent and medical gas use.

Anaesthesia departments should support the work of Estates and Facilities departments in their targets for carbon reduction. This may include innovations such as:

- a) installation of energy saving set back processes to minimise energy use running theatre ventilation systems out of hours
- b) installing low energy lighting, including LEDs, in the clinical and administrative areas
- c) where appropriate, occupancy sensor activated lighting.

Waste management – Waste streams from the operating room should include; mixed recycling (paper, PET drinks bottles, drinks cans), non-contaminated domestic type waste, microwave or steam treated clinical waste, incinerated waste (including sharps and drug residues), anaesthetic room steel single use items.

Quality Improvement – Inherent within the local QI programme sufficient consideration should be given to the resource implication and the carbon impact of the QI venture.

Research – Departments throughout the country should work collaboratively with industry to define more accurately the carbon footprint of regional and inhalational general anaesthesia, drugs and disposables used in clinical practice. Results should be collated and shared and serve as the basis of future guidance.

Updating these guidelines

All chapters contained in this document will be updated for re-publication in January 2019.

The chapters that followed the NICE-accredited process for development will be updated on an annual basis using the following methodology.

1. 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.
2 If new evidence contradicts or strengthens existing recommendations, the authors decide whether or not to involve the remainder of the CDG in revising the recommendations accordingly.

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

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

Every five years guidance will be submitted to a full review involving reconvening the CDG (or appointment of a new, appropriately qualified CDG), and the process described in the methodology section of this chapter begins again. The review date on each chapter indicates the date that it is due for full review.