Chapter 12
Guidelines for the Provision of Anaesthesia Services for ENT, Oral Maxillofacial and Dental surgery

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Declarations of Interest

All Chapter Development Group (CDG) 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:

- One member was an author of one of the items of evidence
- Two 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 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.

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.

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 due 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.

GPAS guidelines in context

The guidelines for the provision of anaesthetic services (GPAS) documents should be viewed as 'living documents'. The GPAS guidelines 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. Guidelines on the general provision of anaesthetic services are detailed in the following chapters of GPAS:

- Chapter 2: Guidelines for the provision of anaesthesia services for preoperative assessment and preparation
- Chapter 3: Guidelines for the provision of anaesthesia services for intraoperative care
- Chapter 4: Guidelines for the provision of anaesthesia services for postoperative care

These guidelines apply to all patients who require anaesthesia or sedation, and are under the care of an anaesthetist. For urgent or immediate emergency interventions, this guidance may need to be modified as described in Chapter 5: Guidelines for the provision of emergency anaesthesia.

The rest of the chapters of GPAS apply only to the population groups and settings outlined in the 'Scope' section of these chapters. They outline guidance that is additional, different or particularly important to those population groups and settings included in the 'Scope'. Unless otherwise stated within the chapter, the recommendations outlined in GPAS Chapters 2–5 still apply.

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.

Aims and objectives

The objective of this chapter is to promote current best practice for service provision in head and neck anaesthesia. The guidance is intended for use by anaesthetists with responsibilities for service delivery and healthcare managers.

This guideline does not comprehensively describe clinical best practice in head and neck anaesthesia, but is primarily concerned with the requirements for the provision of a safe, effective, well-led service, which may be delivered by many different acceptable models. The guidance on provision of head and neck anaesthesia applies to all settings where this is undertaken, regardless of funding. All age groups are included within the guidance unless otherwise stated, reflecting the broad nature of this service.

A wide range of evidence has been rigorously reviewed during the production of this chapter, including recommendations from peer-reviewed publications and national guidance where available. However, both the authors and the CDG agreed that there is a paucity of Level 1 evidence relating to service provision in head and neck anaesthesia. In some cases, it has been necessary to include recommendations of good practice based on the clinical experience of the CDG. We hope that this document will act as a stimulus to future research.

The recommendations in this chapter will support the RCoA's Anaesthesia Clinical Services Accreditation (ACSA) process.

Scope

Target audience

All staff groups working in head and neck surgery, including (but not restricted to) consultant anaesthetists, specialty doctor and associate specialist (SAS) anaesthetists, anaesthetists in training, operating department practitioners (ODPs)/anaesthetic assistants and nurses.

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Target population

All ages of patients undergoing head and neck surgery.

Healthcare setting

All settings within the hospital in which head and neck surgery are provided.

Clinical management

- Key components for the provision of anaesthesia services for head and neck surgery
- Key components needed to ensure provision of high quality anaesthetic services for head and neck surgery
- Areas of provision considered:
  - Levels of provision of service, including (but not restricted to) staffing, equipment, support services and facilities
  - Areas of special requirement, including paediatric patients, pregnant patients, obese patients, robotic procedures, and dentistry
  - Training and education
  - Research and Audit
  - Organisation and administration
  - Patient Information

Exclusions

- Provision of head and neck anaesthesia services by a specialty other than anaesthesia.
- Clinical issues that will not be covered:
  - clinical guidelines specifying how healthcare professionals should care for patients
  - national level issues.

Glossary

Head and neck surgery - for the purpose of this document the term head and neck surgery will incorporate ENT, oral and maxillofacial, and dental surgery unless otherwise stated.

Clinical Lead - Specialty Doctor and Associate Specialist (SAS) doctors undertaking lead roles should be autonomously practicing doctors who have competence, experience and communication skills in the specialist area equivalent to consultant colleagues. They should usually have experience in teaching and education relevant to the role and they should participate in Quality Improvement and CPD activities. Individuals should be fully supported by their Clinical Director and be provided with adequate time and resources to allow them to effectively undertake the lead role.

Dedock- To remove the robot from the patient quickly.

STOP-BANG - Snoring, Tiredness, Observed apnea, high blood Pressure (STOP)-Body mass index (BMI), Age, Neck circumference, and Gender (BANG).

Introduction

Head and neck surgery includes a wide spectrum of surgical interventions, ranging from short day case procedures to long and complex operations.[1] The requirements for providing anaesthesia services for routine head and neck surgery, such as tonsillectomy, will be different to those required to provide anaesthesia for major or complex surgery. There should be recognition that routine head and neck surgery may include patients with complex and difficult airways due to disease or previous treatment.

Anaesthesia for surgery of the head and neck includes the disciplines of ear, nose and throat (ENT), oral and maxillofacial and dental surgery. A significant proportion of head and neck surgery is of a routine nature and much of the service is ideally provided for by a dedicated day case facility.

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In some instances, such as surgery on the base of skull and for craniofacial surgery, formal integration with a neurosurgical and plastic surgical service may be required. Owing to the broad scope of patients requiring anaesthesia for head and neck surgery, multidisciplinary team working is essential.

Conditions that require head and neck surgery affect patients of all ages, and a significant proportion are children. The treatment of neonates, young children with significant comorbidity and children with complex surgical conditions should take place in units with specialist paediatric facilities, unless immediate emergency care is required prior to transfer to a specialist paediatric facility.[2] Simple procedures such as teeth extraction, the removal of tonsils or adenoid tissue and the insertion of grommets can be carried out on children in a general hospital setting.

The indications for head and neck surgery vary widely, from minor infective and inflammatory disorders to extensive malignant disease. In the latter case, surgical excision and reconstruction, often using free tissue transfer, requires complex perioperative anaesthetic management.

It is common for head and neck surgery to encroach upon the airway or to require changing the airway during surgery. It is therefore essential that there is close liaison and good teamwork between theatre teams; surgeons, anaesthetists, anaesthetic assistants and scrub staff in all cases where a shared airway is planned and undertaken.[1]

All dental work requiring general anaesthesia is now performed in a hospital setting. Special Care dentistry often requires additional resources to provide appropriate perioperative care.

Recommendations

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

1 Staffing requirements

1.1 A clinical lead (see glossary) for head and neck anaesthesia should be appointed in each hospital providing anaesthetic services for head and neck surgery.[1,3]

1.2 One or more named senior anaesthetists with appropriate training and expertise, and with an interest in head and neck surgery should be responsible for directly or indirectly overseeing all complex and/or major head and neck procedures.[4] All other regular sessions should have either a named consultant or Specialty Doctor and Associate Specialist (SAS) doctor with appropriate skills assigned to them.[5]

1.3 A Royal College of Anaesthetists/Difficult Airway Society (RCoA/DAS) Airway Lead should be appointed in all hospitals providing anaesthetic services.[6]

1.4 Where scheduled procedures cannot be accommodated within normal list times, anaesthesia departments should make arrangements for anaesthetists to be relieved by a colleague.[7]

1.5 There should be an appropriately trained theatre team including an on call consultant anaesthetist, 24 hours a day to provide anaesthesia for emergency head and neck surgery in head and neck cancer centres and in hospitals with an Emergency Department.[8]

1.6 Consideration should be given to identifying anaesthetists with advanced airway experience to support colleagues providing care to patients with complex airway emergencies.

1.7 Patients who have had a recent tracheostomy or airway surgery returning to a general ward, should be cared for by adequate levels of nursing staff who are skilled in the care of the surgical airway and be aware of the specific risks involved.[3,9,18,21]

1.8 Many head and neck cancer patients have significant comorbidities that may require optimisation prior to surgery. There should be a lead anaesthetist for preoperative assessment who works closely with an appropriate preoperative assessment team.[10]

1.9 Where Light Amplification by Stimulated Emission of Radiation (LASER) surgery to the head and neck is performed staff must be appropriately trained in its safe use.[11,12] A LASER Protection Advisor (LPA) should be consulted or appointed according to devolved administration or local authority regulations, and a Local Safety Officer (LSO) and/or an Operational LASER Protection Supervisor (LPS) appointed according to local advice from the LPA.[13]

1.10 Nursing and theatre staff trained to manage patients with a tracheostomy should be available in recovery areas of hospitals.[14]

1.11 Recovery facilities should be staffed and have appropriate anaesthetic support until the patient meets the agreed discharge criteria.[30]

2 Equipment, Services and Facilities

Equipment

2.1 Many patients with intraoral malignancy, craniofacial disorders and traumatic facial injuries present with a predicted difficult intubation. There should be a full range of equipment relating to the management of the anticipated difficult airway available within the theatre suite. This should include equipment for videolaryngoscopy, fibreoptic intubation, High Flow Nasal Oxygen therapy (HFNO) and equipment to perform front of neck access (FONA).[15,16,17]

2.2 An adequate range of tracheostomy tubes, including adjustable flange tubes with inner tubes, should be stocked and standardised within the hospital.[18]

2.3 The use of LASERs during head and neck surgery is common. Where lasers are in use, the correct safeguards, in accordance with BS EN 60825, must be in place.[10] Theatre door screening and LASER warning systems must be provided. The appropriate wavelength specific protective eye goggles must be worn.[13,19]

2.4 When undertaking specialist techniques such as high frequency jet ventilation in laryngotracheal surgery, the appropriate equipment and training to safely undertake this should be available.

2.5 Preoperative nasendoscopy equipment should be available to aid the identification of the difficult airway and to enable advance planning for anticipated problems.[1,6]

2.7 When transferring patients requiring postoperative care in a critical care facility additional equipment should be available. This should include portable non-invasive and invasive monitoring, emergency transfer packs, portable ventilators, and Et CO_2 monitoring.[6,20]

2.8 Any clinical area caring for patients with a tracheostomy should provide the recommended bedside and the locally "immediately available" emergency equipment, as indicated in the UK National Tracheostomy Safety Project Guide.[21]

2.9 The use of bedhead signage to indicate which patients are **not** suitable for bag-mask ventilation and/or oral intubation in the event of emergencies is advised.[21]

2.10 Throat packs are no longer recommended for routine insertion but should their use be judged necessary; a protocol governing their use should exist.[22]

Support Services

2.11 Patients awaiting complex head and neck surgery (for benign or malignant pathology) or with significant comorbidities, should be seen in the preassessment clinic by an experienced anaesthetist who ideally will be involved in their perioperative pathway.[23]

2.12 Short and long term outcomes in head and neck cancer patients can be improved by certain lifestyle changes such as cessation of smoking, alcohol reduction and improved nutrition.[24] The preoperative assessment clinic should be used as an opportunity to implement these life style changes, with access to the appropriate support services (e.g. dietetics, smoking-cessation services) when required.

2.13 Access to radiological imaging should be available preoperatively to aid in the identification and management of the difficult airway.

2.14 Where major head and neck surgery is performed, there may be a regular requirement for elective level 2 and level 3 critical care facilities. This should be available in the same hospital for those trusts or boards providing complex reconstructive procedures.[4]

2.15 Where the postoperative destination is a level 2 critical care unit, patients should remain in the postoperative care unit until they meet discharge criteria including having regained a sufficient level of consciousness.

2.16 When fibreoptic scopes are used in head and neck surgery, the general principles for scope decontamination must be followed as outlined by the Department of Health.[25]

Facilities

2.17 Facilities should be available, or transfer arrangements should be in place, to allow for the overnight admission of patients who cannot be treated as day cases or those patients who require unanticipated admission to hospital.

2.18 Wherever possible, patients who have had airway related surgery should be cared for in the early postoperative period on a dedicated head and neck surgery ward with adequate levels of medical and nursing staff, who are familiar with the recognition and management of airway related problems.[3,9]

2.19 Patients presenting with impending airway obstruction may need emergency airway intervention and surgery. The ability to provide this service dictates that an appropriately staffed and equipped theatre be available 24 hours a day.

2.20 The location of the head and neck ward should ideally facilitate a rapid return to theatre should the need arise as postoperative airway complications can occur even following minor surgical procedures. Consideration should be given, when planning head and neck services, to the proximity between head and neck wards, theatre and critical care facilities.

3 Areas of Special Requirement

Children

Head and neck surgery is performed in a significant number of children. General recommendations for the provision of anaesthetic services for children and young people are described in GPAS Chapter 10: Guidance on the Provision of Paediatric Anaesthetic Services 2018.[2]

3.1 The treatment of neonates, young children with significant comorbidity and children with complex surgical conditions should be provided in specialist paediatric facilities, unless immediate emergency care is required prior to transfer to a specialist paediatric unit.

3.2 In an emergency situation involving a child requiring anaesthesia for an airway or head and neck procedure the most experienced available anaesthetist and surgeon would be expected to provide life saving care when transfer to a specialist facility is not feasible.

3.3 Simple procedures such as dental extractions, tonsillectomy and adenoidectomy, and the insertion of grommets are examples of surgery suitable to be performed in a general hospital setting.

Pregnant Patients

Recommendations for the provision of anaesthesia for non obstetric surgery in pregnant patients can be found in GPAS Chapter 5: Guidelines for the Provision of Emergency Anaesthesia 2017.[8]

3.4 Where possible surgery should be postponed until after delivery. If this is not possible, for example in cases of head and neck cancer, a multidisciplinary team approach is highly recommended typically involving anaesthetists, surgeons, oncologists, obstetricians, midwives and paediatricians and in cases of thyroid malignancy, endocrinologists.

Obstructive sleep apnoea

There is an inherent risk of increased morbidity and mortality related to anaesthesia and obstructive sleep apnoea (OSA). This risk may be increased in head and neck surgery. When providing head and neck anaesthesia services for adult patients with known (OSA)/or a STOP-BANG (see glossary) score ≥ 3 (intermediate to high risk for OSA the following may need to be considered.[26]

3.6 Sleep studies and a trial of continuous positive airway pressure (CPAP) are recommended or should be considered, where possible, prior to elective surgery, in order that appropriate services and planning may be allocated to them.[27]

3.7 Postoperative airway issues can occur even following minor surgical procedures and these should be anticipated and planned for.[28] There may be a need to consider elective postoperative care in an appropriate critical care unit or a specialist postoperative ward. [29,30]

Obesity

3.8 When providing head and neck anaesthesia services for morbidly obese patients (BMI >40 or above) a number of special requirements will need to be considered as set out in the Guidelines for the provision of intraoperative care (section 3.3-3.7) and Guidelines for the Provision of Postoperative Care (section 3.24-3.25).[30,31]

3.9 Obesity hypoventilation syndrome (Pickwickian syndrome) is associated with a higher risk of perioperative complications than OSA and should be given due consideration in obese patients with or without a STOP-BANG score ≥ 3.[32]

Transoral robotic surgery

Transoral Robotic procedures (TORS) are currently performed for oropharyngeal cancer and obstructive sleep apnoea. These may range from minor resection, for example tongue mucosectomy, to complex resection or salvage surgery following primary chemoradiotherapy.

3.10 All personnel involved with TORS should be appropriately trained, including knowledge of how to perform an emergency dedock procedure (see glossary).

3.11 Consideration should be given to anaesthetic equipment specific for TORS e.g. extra length anaesthetic circuit, patient eye protection, tracheal tube fixation, laser safety and dental protection.

Dentistry

3.12 General anaesthesia for dental procedures should be administered only by anaesthetists in a hospital setting as defined by the Department of Health report reviewing general anaesthesia and conscious sedation in primary dental care.[33]

3.13 Guidelines including those published by the Association of Paediatric Anaesthetists of Great Britain and Ireland for the management of children referred for dental extractions under general anaesthesia should be followed.[34] Further information on anaesthesia for community dentistry is available in GPAS chapter 7.

3.14 Anaesthetists providing sedation for dental procedures should follow the guidance on safe sedation published by the Academy of Medical Royal Colleges and Intercollegiate Advisory Committee on Sedation for Dentistry (IACSD).[35,36]

Special Care Dentistry

Special Care Dentistry (SCD) is the branch of dentistry that provides oral care services for people with physical, medical, developmental, or cognitive conditions which limit their ability to receive routine dental care.[37] General anaesthesia for dental procedures forms an important aspect of special care dentistry and a close working relationship is needed between the dentist, anaesthetist and the other multidisciplinary teams involved. This vulnerable group of patients require access, communication and perioperative care appropriate for their individual needs.[38]

3.17 A best interests meeting will be needed where an adult (16+ years old) lacks mental capacity to make significant decisions for themselves and needs others to make those decisions on their behalf.[39]

3.18 Establishing a successful SCD anaesthetic service in hospitals requires an understanding of specific perioperative challenges in this group as well as experience in the management of shared airways.[37]

4 Training and Education

4.1 Patients requiring head and neck procedures should be managed by anaesthetists who have had an appropriate level of training in this field, and who have acquired the relevant knowledge and skills needed to care for these patients.[40,41]

4.2 In order to maintain the necessary repertoire of skills, consultant anaesthetists and SAS doctors providing a head and neck service should have a regular commitment to the specialty, and adequate time should be made for them to participate in a range of relevant continuing medical education activities including simulation, human factors and team training.[6,42]

4.3 Head and neck surgery provides an excellent opportunity for the formal and systematic training of anaesthetists in the use of advanced methods for airway management and the shared airway, including videolaryngoscopy, fibreoptic intubation, jet and apnoeic oxygenation techniques. Where possible, additional equipment such as monitors, video recorders and airway simulators should be made available to facilitate this important aspect of anaesthetic education. Time to educate all anaesthetists in elective, emergency and advanced airway management techniques should be encouraged.

4.4 All hospitals providing care to tracheostomy patients should have trained staff (medical and nursing) available to care for these patients. Training should be regularly updated.[43]

4.5 Departments providing head and neck LASER surgery musthave staff trained in the safe use of LASERS and these staff should be available for all LASER cases.[11,12] Training should be regularly updated and opportunities made available for education in safe LASER use in the theatre complex. Staff involved in LASER surgery should be trained in how to reduce the risk of and manage a laser fire if one should occur.[44]

5 Organisation and Administration

5.1 All theatre staff should participate in the World Health Organisation (or an appropriate locally agreed) checklist process, with reference made to specific airway strategies for anticipated airway problems and to ensure that all necessary equipment is available.[9]

5.2 Airway management should be guided by local protocols,[9] including formal adoption of national guidelines e.g. Difficult Airway Society intubation, extubation, paediatric and obstetric guidelines.[15,45,46]

5.3 A multidisciplinary team (MDT) may be required including plastic, vascular or neurosurgical surgeons for complex head and neck surgery. Anaesthetists may be required to attend MDT meetings preoperatively and this should be included in their job plan if this forms a regular commitment.

5.4 Access to an emergency operating theatre staffed with appropriate personnel should be available for all cases requiring urgent surgical management e.g. obstructed airway or bleeding tonsil.

5.5 A clear referral pathway should exist in the event of patient requireing transfer to a regional centre.

5.6 There should be at least one three-session operating day per week as required, dedicated for complex head and neck surgery,[4] with provision made for adequate rest breaks.

6 Financial Considerations

Part of the methodology used in this chapter in making recommendations is a consideration of the financial impact for each of the recommendations. Very few of the literature sources from which these recommendations have been drawn have included financial analysis.

The vast majority of the recommendations are not new recommendations, but are a synthesis of already-existing recommendations. The current compliance rates with many of the recommendations are unknown, and so it is not possible to calculate the financial impact of the recommendations in this chapter being widely accepted into future practice.

6.1 Specialist airway equipment e.g. videolaryngoscopes, high frequency jet ventilators, transnasal high flow humidified oxygen delivery devices and portable ultrasound machines should be included in annual budget planning and procurement processes.[15]

7 Research, audit and quality improvement

7.1 In addition to routine audit and the reporting of critical incidents, any morbidity relating to airway management should be presented at departmental clinical governance meetings and documented for audit purposes.

7.2 Head and neck anaesthetists should actively engage and contribute to regional and national head and neck outcome databases and audit.[4,47]

8 Implementation Support

The Anaesthesia Clinical Services Accreditation (ACSA) scheme, run by the RCoA, 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 RCoA 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 while 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 RCoA 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 RCoA. 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 the ACSA Committee.

The ACSA Committee 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 ACSA Committee 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.

9 Patient Information

Recommendations on the provision of patient information and consent are comprehensively described in GPAS chapter 2.

9.1 As part of a difficult airway follow-up, patients should be informed in writing about any significant airway problem encountered and be advised to bring it to the attention of anaesthetists during any future preoperative assessment.

Areas for Future Development

Following the systematic review of the evidence, the following areas of research are suggested:

- Standardisation of airway equipment e.g. airway rescue trolleys
- National reporting systems
- DAS alert card[48]
- use of virtual preoperative assessment clinics for assessment of long-distance patients in tertiary centres

Abbreviations

ACSA	Anaesthesia Clinical Services Accreditation
BMI	Body mass index
CDG	Chapter Development Group
CPAP	Continuous positive airway pressure
DAS	Difficult Airway Society
ENT	Ear Nose and Throat
FONA	front of neck access
GPAS	Guidelines for the Provision of Anaesthetic Services
HFNO	High Flow Nasal Oxygen therapy
LASER	Light Amplification by Stimulated Emission of Radiation
LPA	Laser Protection Advisor
LPO	Local Safety Officer
LPS	Laser Protection Supervisor
MDT	Multidisciplinary Team
NICE	National Institute for Health and Care Excellence
OSA	Obstructive sleep apnoea
PA(A)	Physicians assistant (anaesthesia)
RCoA	Royal College of Anaesthetists
SCD	Special Care Dentistry
TORS	Transoral robotic surgery

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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:

Recommendation Number	Level of Evidence	Strength of Recommendation
1.1	C	strong
1.2	C	strong
1.3	B	strong
1.4	C	strong
1.5	C	strong
1.6	GPP	weak
1.7	C	strong
1.8	C	strong
1.9	C	mandatory
1.10	C	strong
1.11	C	strong
2.1	B	strong
2.2	C	strong
2.3	C	mandatory
2.5	GPP	strong
2.6	B	strong
2.7	B	strong
2.8	C	strong
2.9	C	strong
2.10	C	strong
2.11	C	weak
2.12	C	strong
2.13	GPP	strong
2.14	C	strong
2.15	GPP	strong
2.16	C	strong
2.17	GPP	strong
2.18	C	strong
2.19	GPP	strong
2.20	GPP	aspirational
3.1	C	strong
3.2	C	strong
3.3	C	strong
3.4	C	strong
3.5	B	strong
3.6	C	weak
3.7	C	strong

Recommendation Number	Level of Evidence	Strength of Recommendation
3.8	B	weak
3.9	GPP	strong
3.10	GPP	strong
3.11	C	strong
3.12	C	strong
3.13	C	strong
3.14	C	strong
3.15	m	mandatory
3.16	C	strong
4.1	C	strong
4.2	C	strong
4.3	GPP	strong
4.4	C	strong
4.5	M	mandatory
5.1	C	strong
5.2	C	strong
5.3	GPP	aspirational
5.4	GPP	strong
5.5	GPP	strong
5.6	C	strong
6.1	GPP	strong
7.1	GPP	strong
7.2	C	strong
9.1	GPP	strong

Chapter 12
Guidelines for the Provision of Anaesthesia Services for ENT, Oral Maxillofacial and Dental surgery

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. 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 head and neck surgery services for patients who have undergone surgery and/or interventions which involve anaesthesia.

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, criteria for inclusion and exclusion of evidence (for the full head and neck chapter search protocol please contact the RCoA). A hand search of the literature was also conducted by the authors using the reference lists of relevant original articles and review articles.

The literature search was performed in November 2017.

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 (CDG) for suitability. The final list of publications used can be found in the references.

Inclusion criteria

The literature review considered studies that included the following patient population with all of the inclusion criteria listed below:

- All patients undergoing elective or emergency anaesthesia
- All staff groups working within ENT, Oral Maxillofacial and Dental Surgery, under the responsibility of an Anaesthetic Clinical Director, including (but not restricted to) Consultant Anaesthetists, Trainee Anaesthetists, Nurses, Operating Department Practitioners, Surgeons, Pharmacists, General Practitioners, Radiologists and Radiographers

Exclusion criteria

The literature review used the following exclusion criteria:

- Provision of an ENT, Oral Maxillofacial and Dental service provided by a speciality other than anaesthesia

Data Extraction and Analysis

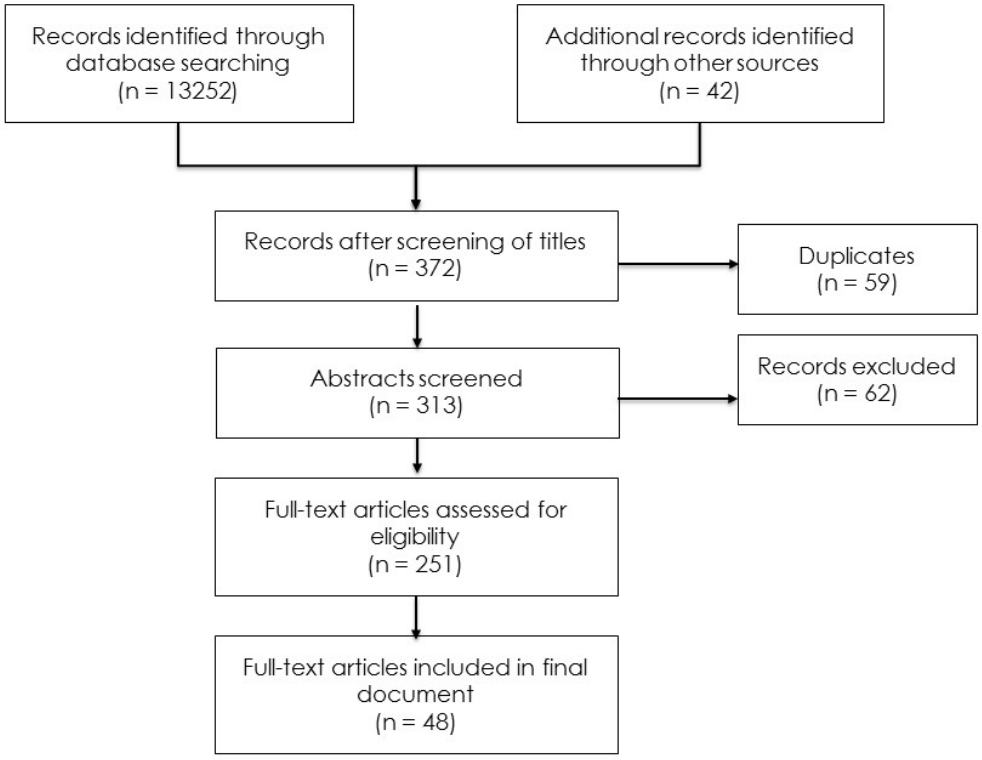
Data were extracted by the authors using a proforma. The study characteristics data included:

- 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
- reviewer's comments.

The patient characteristics data extracted were; age, gender and type of surgery. The analysis considers studies that included any clinical outcome, including (but not restricted to) survival, length of stay, critical care or hospital, morbidity, adverse effects and complications.

The results of the literature review can be seen below:

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



Chapter 12
Guidelines for the Provision of Anaesthesia Services for ENT, Oral Maxillofacial and Dental surgery

The evidence that is included in this chapter has been graded according to a grading system adapted from NICE and outlined below:

Level	Type of evidence	Grade	Evidence
Ia	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	**A**	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
Ib	Evidence obtained from meta-analyses, systematic reviews of RCTs or RCTs with a high risk of bias	**B**	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
IIa	Evidence obtained from at least one well-designed controlled study without randomisation		
IIb	Evidence obtained from at least one well-designed quasi-experimental study		
IIc	Evidence obtained from case control or cohort studies with a high risk of confounding bias		
III	Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies		
IV	Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities	**C**	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.
UG	Legislative or statutory requirements	**M**	This grading indicates that implementation of this recommendation is a statutory requirement, or is required by a regulatory body (eg CQC, GMC)
		GPP	Recommended good practice based on the clinical experience of the CDG.

Adapted from Eccles M, Mason J. How to develop cost-conscious guidelines. *Health Technology Assessment* 2001;5(16) and Mann T. Clinical guidelines: using clinical guidelines to improve patient care within the NHS. *Department of Health*, London 1996.

Strengths and limitations of body of evidence

Most of the published evidence on inpatient pain services is descriptive. There are publications describing aspects of this process based on expert opinion.

The limitations of the evidence are:

- the 'unmeasurables' (attitudes, behaviour, motivation, leadership, teamwork)
- few randomised controlled trials (RCTS); studies frequently use mixed populations of emergency and elective patients, or all emergency patients grouped together despite different underlying diagnoses
- papers often examine a single intervention within complex system or bundle
- papers are often examining small numbers and/or patients from a single centre
- poor use of outcome measures, frequently concentrating on easily measured short term outcomes which are not patient-centred
- generally, a paucity of long-term follow up
- there is no standard definition used of 'high risk'
- use of different risk-scoring systems
- decrease in outcome over time and geography when 'good papers' are used in quality Improvement programmes
- application of international studies in systems with either more or less resources than the UK into NHS practice
- older studies may no longer be applicable within the NHS
- very few studies included any analysis of financial implications
- evidence was mainly based on literature graded III and IV.

Methods used to arrive at recommendations

Recommendations were initially drafted based on the evidence by the authors for the chapter. These were discussed with the CDG, and comments were received both on 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:

Strength	Type of evidence	Wording
Mandatory	The evidence supporting the recommendation includes at least one with an 'M' grading	Wording should reflect the mandatory nature of the recommendation, ie 'must'
Strong	Confidence that for the vast majority of people, the action will do more good than harm (or more harm than good)	Wording should be clearly directive 'should' or 'should not'
Weak	The action will do more good than harm for most patients, but may include caveats on the quality or size of evidence base or patient preferences	Wording should include 'should be considered'
Aspirational	While there is some evidence that implementation of the recommendation could improve patient care, either the	Wording should include 'could'

	evidence or the improvement is not proven or substantial	
Equipoise	There is no current evidence on this recommendation's effect on patient care	Wording should include 'there is no evidence of this recommendation's effect on patient care'

Consultation

The chapter has undergone several rounds of consultation. The multidisciplinary 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 GPAS Chapter Development 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 authors or GPAS Editorial Board. 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 Clinical Quality and Research Board (CQRB) along with 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 3 December 2018 – 4 January 2019. 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 directly by the College for their work on GPAS, the GPAS Editors' employing organisation receives 2 PA backfill funding. 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 CDG, 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 the GPAS Editorial Board and CQRB

The overall development of the entire GPAS document is overseen by the CQRB of the Royal College of Anaesthetists, which includes representatives from all grades of anaesthetist, clinical directors and lay representation.

Responsibility for managing the scope of the document and providing clinical oversight to the project technical team is delegated by the CQRB 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 GPAS Editor 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 and are responsible for signoff before final publication. In the event of disagreement, consensus is reached using the majority rules consensus method, with the chair of CQRB holding the deciding vote.

Updating these guidelines

This chapter will be updated for republication in January 2020.

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 decide whether or not to involve the remainder of the CDG 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 2024.

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.

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