Royal College of Anaesthetists

Chapter 12

# Guidelines for the Provision of Anaesthesia Services (GPAS)

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

Consultation draft - November 2023

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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 guidelines for the provision of anaesthetic services (GPAS) conflict of interest policy as described in the GPAS chapter development process document.

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 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 GPAS documents should be viewed as 'living documents'. The development, implementation and review of the GPAS guidelines 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 *GPAS Chapter 2: Guidelines for the Provision of Anaesthesia Services for the Perioperative Care of Elective and Urgent Care Patients*.

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 *GPAS 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 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 by 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 Chapter Development Group (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, staff grade, associate specialist and specialty (SAS) anaesthetists, anaesthetists in training, operating department practitioners (ODPs)/anaesthetic assistants, and nurses.

### Target population

All ages of patients undergoing head and neck surgery.

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## Healthcare setting

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

## Clinical management

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 dental care
- 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.

## Introduction

Head and neck surgery includes a wide spectrum of surgical interventions, ranging from short daycase 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 by a dedicated daycase facility.

In some instances, such as surgery on the base of the skull and 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] Minor procedures such as dental extractions, 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, scrub staff and nurses providing post-operative care, in all cases where a shared airway is planned and undertaken.[1]

All dental work requiring general anaesthesia should be performed in a hospital setting. [3] 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.

### 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.[1,4]

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.[5] All other regular sessions should have a named autonomously practicing anaesthetist with appropriate skills assigned to them.[6]

1.3 A Royal College of Anaesthetists/Difficult Airway Society airway lead should be appointed in all hospitals providing anaesthetic services.[7]

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.[8]

1.5 There should be an appropriately trained theatre team including an on-call consultant anaesthetist 24/7 to provide anaesthesia for emergency head and neck surgery in head and neck cancer centres and in hospitals with an emergency department (ED).[9]

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.[4,10,16,23,11]

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.[12]

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.[13,14] A LASER protection advisor (LPA) should be consulted or appointed according to devolved

administration or local authority regulations, and a local safety officer and/or an operational LASER protection supervisor (LPS) appointed according to local advice from the LPA.[15]

1.10 Nursing and theatre staff trained to manage patients with a tracheostomy should be available in recovery areas of hospitals.[16,11]

1.11 Recovery facilities should be staffed and have appropriate anaesthetic support until the patient meets the agreed discharge criteria.[35]

## 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.

2.2 The following equipment should also be available; videolaryngoscopy, tracheal intubation, high-flow nasal oxygen therapy (HFNO), and equipment to perform emergency front of neck access (eFONA).[17,18,19]

2.3 Devices suitable to administer total intravenous anaesthesia (TIVA) should be available where shared airway cases are undertaken and are essential when tubeless field techniques are employed ie jet ventilation and transnasal humidified rapid-insufflation ventilatory exchange (THRIVE).[20]

2.4 An adequate range of tracheostomy tubes, including adjustable flange tubes with inner tubes, should be stocked and standardised within the hospital.[11,16]

2.5 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.[13] LASER proof blinds or barriers should be used to cover theatre door windows and LASER warning systems must be provided. The appropriate wavelength specific protective eye goggles must be worn.[15,21]

2.6 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.

2.7 Nasendoscopy equipment should be available at all times to aid the identification of the difficult airway and to enable advance planning for anticipated problems.[1,7]

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 end tidal $CO_2$ monitoring.[7,22]

2.8 Any clinical area caring for patients with a tracheostomy should provide the recommended bedside equipment and the locally 'immediately available' emergency equipment, as indicated in the UK National Tracheostomy Safety Project Guide.[11,23]

2.9 The use of bedhead signage to indicate which patients are not suitable for facially applied bag-mask ventilation and/or oral intubation in the event of emergencies is advised.[23]

2.10 Throat packs are no longer recommended for routine insertion, but should their use be judged necessary a protocol governing their use and removal should exist.[24]

## 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. This should take place at the earliest possible opportunity in order to maximise time available for optimisation and shared decision making.[25]

2.12 Short- and long-term outcomes in head and neck cancer patients can be improved by using the teachable moment to trigger positive lifestyle changes. [26] The preoperative assessment clinic should be used as an opportunity to: [27]

- assess and discuss perioperative risk and plan clinical care accordingly
- screen for and optimise comorbidities such as anaemia, aiabetes and frailty
- support patients to make changes around smoking cessation, alcohol reduction, nutrition and exercise with access to the appropriate support services (e.g. dietetics, smoking cessation services)

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.[5]

2.15 When 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, as outlined by the Department of Health (or equivalent in the devolved nations), must be followed.[28]

## 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 and for those patients who require unanticipated admission to hospital.

2.18 Wherever possible, patients who have undergone 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.[4,10]

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 24/7.

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

## 3 Areas of special requirement

### Children

Head and neck surgery is performed on a significant number of children. General recommendations for the provision of anaesthetic services for children and young people are described in chapter 10.[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 chapter 5.[9]

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 score $\geq$ 3 (intermediate to high risk for OSA) the following recommendations may need to be considered.[29,30]

3.5 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.[31]

3.6 Postoperative airway issues can occur even following minor surgical procedures, and these should be anticipated and planned for.[32,33] There may be a need to consider elective postoperative care in an appropriate critical care unit or a specialist postoperative ward. [34,35]

## Obesity

3.7 When providing head and neck anaesthesia services for morbidly obese patients (BMI ≥40), a number of special requirements will need to be considered as set out in GPAS chapter 3 (12.43-12.53)[35]

3.8 Obesity hypoventilation syndrome (Pickwickian syndrome) is associated with a higher risk of perioperative complications than OSA, and this should be given due consideration in obese patients with or without a STOP-Bang score ≥3.[36]

## Transoral robotic surgery

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

3.9 All personnel involved with TORS should be appropriately trained, including knowledge of how to perform an emergency dedock procedure (see glossary). An emergency dedock should be regularly rehearsed by the whole theare team, and discussed as part of the briefing prior to TORS.

3.10 Consideration should be given to anaesthetic equipment specific for TORS, for example extra length anaesthetic circuit, patient eye protection, tracheal-tube fixation, LASER safety and dental protection.

## Dentistry

3.11 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.[3]

3.12 Guidelines, for example those published by the Association of Paediatric Anaesthetists of Great Britain and Ireland, should be followed for the management of children referred for dental extractions under general anaesthesia.[37] Further information on anaesthesia for community dentistry is available in chapter 7.

3.13 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).[38,39]

## Special care dentistry

Special care dentistry (SCD) is a specialist field of dentistry that provides oral care services for vulnerable adults with physical, medical, developmental, or cognitive conditions which limit their ability to receive routine dental care.[40] General anaesthesia for dental procedures forms an important aspect of SCD, and a close working relationship is needed between the dental team, the anaesthetist and the other multidisciplinary teams involved. Patients in this vulnerable group require appropriate access, communication and perioperative care appropriate to their individual needs.[41]

3.14 Informed consent may not be possible for adults who lack the mental capacity to make decisions for themselves; such patients should not be asked to sign a consent form if they do not have the legal capacity to do so. Standard operating procedures must be compliant with the Mental Capacity Act 2005.[42] A high level of integrity should be maintained, and good documentation is essential.

3.15 A 'best interests' meeting will be needed where an adult (over 16 years old) lacks mental capacity to make significant decisions for themselves and needs others to make those decisions on their behalf.[42]

3.16 Establishing a successful SCD anaesthetic service in hospitals requires suitably trained staff with an understanding of specific perioperative challenges in this group and with experience in the management of shared airways.[40]

## 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.[43,44]

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 available for them to participate in a range of relevant continuing medical education activities, including simulation, human factors and team training.[7,45,46]

4.3 Where possible, equipment such as monitors, video recorders and airway simulators should be made available to facilitate anaesthetic education. Time to educate all anaesthetists in elective, emergency and advanced airway management techniques should be encouraged.

4.4 The provision of formal and systematic training should be considered and head and neck surgery provides an excellent opportunity for training anaesthetists in the use of advanced methods for airway management and the shared airway, including videolaryngoscopy, flexible bronchoscopic, and jet and apnoeic oxygenation techniques.

4.5 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.[11,47]

4.6 Departments providing head and neck LASER surgery must have staff trained in the safe use of LASERS and these staff should be available for all LASER cases.[13,14] 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.[48]

## 5 Organisation and administration

5.1 All theatre staff should participate in the World Health Organization checklist process (or an appropriate locally agreed process), with reference made to specific airway strategies for anticipated airway problems and to ensure that all necessary equipment is available.[10]

5.2 Airway management should be guided by local protocols,[10] including formal adoption of national guidelines such as Difficult Airway Society awake tracheal intubation, extubation, paediatric and obstetric guidelines. These protocols should be reviewed and amended when an increased risk of infectivity during aerosol generating procedures is identified to ensure the safety of patients as well as their healthcare providers. [17,49,50,51, 52]

5.3 A multidisciplinary team (MDT) may be required, and this may include 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 it 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, for example obstructed airway or bleeding tonsil.

5.5 A clear referral pathway should exist for the eventuality of patients requiring transfer to a regional centre.

5.6 There should be at least one three-session operating day per week as required, dedicated to complex head and neck surgery,[5] 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. It is impossible to make an overall assessment of the financial impact of these recommendations with the currently available information.

6.1 Aiirway management equipment, for example 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.[17]

## 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.[5,53]

### Patient information

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

7.3 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.

### Implementation support

The Anaesthesia Clinical Services Accreditation (ACSA) scheme, run by the RCoA, provides a set of standards based on the recommendations contained in the GPAS chapters. As part of the scheme, departments of anaesthesia  self-assess against the standards and undertake quality improvement projects to close the gap. Support is provided by the RCoA in the form of the good practice library, which shares documents and ideas from other departments on how to meet the standards. Further advice can be obtained from the ACSA team and department's assigned College guide.

The ACSA standards are regularly reviewed on at least a three yearly basis to ensure that they reflect current GPAS recommendations and good practice. This feedback process works both ways and the ACSA scheme regularly provides CDGs with comments on the GPAS recommendations, based on departments' experience of implementing the recommendations.

Further information about the ACSA scheme can be found here: www.rcoa.ac.uk/safety-standards-quality/anaesthesia-clinical-services-accreditation

## Areas for future development

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

- national reporting systems
- the DAS alert card[54]
- use of virtual preoperative assessment clinics for assessment of long-distance patients in tertiary centres
- provision of a robust preoperative pathway with a view to optimising patients' physiology prior to undertaking major head and neck surgery, and an enhanced recovery pathway to reduce complications and length of stay.

## Glossary

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

**Clinical airway lead** – This role may be undertaken by any senior clinician, SAS or consultant grade who has competence, experience and communication skills in the specialist area. They should usually have experience in teaching and education relevant to the role, and they should participate in quality improvement and CPD (continuous professional development) 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 apnoea, high blood Pressure (STOP); BMI, Age, Neck circumference, and Gender (Bang).

## Abbreviations

| | |
|---|---|
| AAs | Anaesthesia Associates |
| ACSA | Anaesthesia Clinical Services Accreditation |
| BMI | Body mass index |
| CDG | Chapter Development Group |
| CPAP | Continuous positive airway pressure |
| DAS | Difficult Airway Society |
| EFONA | Emergency front of neck access |
| ENT | Ear, nose and throat |
| 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 |
| LSO | Local safety officer |
| LPS | LASER protection supervisor |
| MDT | Multidisciplinary team |
| NICE | National Institute for Health and Care Excellence |

| | |
|---|---|
| OSA | Obstructive sleep apnoea |
| RCoA | Royal College of Anaesthetists |
| SCD | Special care dentistry |
| THRIVE | Transnasal humidified rapid-insufflation ventilatory exchange |
| TORS | Transoral robotic surgery |

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