

Guidelines for the Provision of Ophthalmic Anaesthesia Services

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DRAFT

Chapter 13

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Aims and objectives

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

This guideline does not comprehensively describe clinical best practice in ophthalmic 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 ophthalmic 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 ophthalmic 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 process.

Scope

Research question

The key question covered by this guideline is:

- 'What are the key components, within the perioperative period of care, for the provision of anaesthesia services in ophthalmic surgery and/or interventions?'

Areas of provision considered:

- levels of provision of service, including (but not restricted to) staffing, equipment, support services and facilities
- areas of special requirement, such as paediatric, resuscitation, obstetrics, care of the pregnant patient, frailty, vulnerable adults and children, dementia patients, satellite sites and eye casualties in the Emergency Department (ED)
- training and education
- research and audit
- organisation and administration
- patient information.

Target population

All ages of patients undergoing elective or emergency anaesthesia for ophthalmic surgery or intervention.

Anaesthetic departments caring for patients in the above group.

Healthcare setting

All settings within the hospital or other healthcare facility in which ophthalmic anaesthetic services are provided.

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Exclusions

- neonates
- clinical guidelines specifying how healthcare professionals should care for patients
- national level issues.

Introduction

The discipline of ophthalmic surgery encompasses the following areas: intraocular surgery, extraocular surgery, oculoplastic surgery, nasolacrimal surgery and orbital surgery. Ophthalmic surgery is undertaken in a wide variety of different settings, including multispecialty general hospitals, isolated units and large, single specialty centres. All environments require appropriate staffing levels, skill mix and facilities. The ophthalmic anaesthetist has a key role in the organisation and management of the preoperative assessment of patients; the administration of local anaesthesia, sedation or general anaesthesia; the monitoring, prevention and management of adverse events; and efficient service delivery.

Anaesthesia for ophthalmic surgery is a specialised area of anaesthetic practice¹, providing care for a wide range of patients, from neonates to the very elderly.¹ In addition, the quality of anaesthetic provision can have a direct impact on surgical outcome. Close team working with surgical colleagues is therefore essential.

Ophthalmic surgery is often required for ocular manifestations of systemic disease, and patients exhibit a high incidence of comorbidity and uncommon medical conditions. Ophthalmic preoperative assessment clinics are essential in optimising and preparing these patients for surgery.

The majority of ophthalmic procedures are now performed as day cases, and the use of local anaesthesia is widespread. However, not all patients are suitable for this approach and general anaesthesia or local anaesthesia with sedation should be available as an option. All techniques have specific risks and benefits. Decisions regarding the type of anaesthesia should be made individually for each patient and each procedure.

Recommendations

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

1 Staffing Requirements

1.1 Appropriate staffing levels and skill mix should be provided in all units: multispecialty general hospitals, isolated units and large single specialty centres delivering ophthalmic anaesthesia. For most operating sessions this should include surgeon, anaesthetist, two theatre trained scrub practitioners, one trained nurse or operating department practitioner to assist with local anaesthesia/patient monitoring, and one theatre support worker/runner.^{2,3}

1.2 Dedicated, skilled assistance for the anaesthetist should be available in every situation where anaesthesia or sedation is employed.^{4,5}

1.3 Each department or facility that provides ophthalmic anaesthesia services should have a clinical lead (see glossary) with nominated responsibility for ophthalmic anaesthesia.²

1.4 There should be an identified group of senior anaesthetists who manage and deliver a comprehensive ophthalmic anaesthesia service, including the use of orbital regional anaesthetic techniques.²

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- 1.5 Many ophthalmic patients have significant comorbidities that may require optimisation and co-ordination prior to surgery. There should be a lead anaesthetist (with an appropriate number of programmed activities in their job plan and appropriate secretarial support) for preoperative assessment, who works closely with an appropriately trained preoperative assessment team.^{6,7}
- 1.6 All ophthalmic surgery should be carried out in a facility that is appropriately staffed and equipped for resuscitation.^{2,8}
- 1.7 Staff should be trained in basic life support and there should be immediate access to a medical team with advanced life support capabilities.⁸
- 1.8 In isolated units, where no anaesthetist or medical emergency team is immediately available, there should be at least one person with advanced life-support training or equivalent.^{2,9} A clear and agreed pathway should be in place for isolated units to enable the patient to receive appropriate advanced medical care, including intensive care, in the event of it being required. Patients should be assessed pre-operatively to ensure that they can be expected to be suitable for surgery in such an isolated unit.²
- 1.9 If no anaesthetist is present in theatre, an appropriately trained anaesthetic nurse, ophthalmic theatre nurse or operating department practitioner (ODP) should be present to monitor the patient during establishment of local anaesthesia and throughout the operative procedure. This should be their sole responsibility.²
- 1.10 Wherever possible, anaesthesia in remote ophthalmic surgical sites should be delivered by appropriately experienced consultant anaesthetists. Where a trainee or non-consultant grade is required to provide anaesthetic services at a remote site, the recommendations of the Royal College of Anaesthetists should be followed.¹⁰
- 1.11 If inpatients are cared for in isolated/single specialty units, there should be medical cover and nursing care appropriate to the medical needs of the patients.¹¹
- 1.12 Where inter hospital or intra hospital transfer is necessary, patients should always be accompanied by appropriately trained staff.¹²
- 1.13 All members of clinical staff working within the recovery area should be certified immediate life support providers and mandatory training should be provided.^{7,13}
- 1.14 For children, staff should hold an equivalent paediatric life-support qualification.^{7,13}

Anaesthesia Associates

The RCoA and Association of Anaesthetists have acknowledged that development of Anaesthesia Associates (AAs) enhanced roles is taking place, and stated that they would only consider supporting role enhancement, including the performance of regional blocks, when statutory regulation is in place.¹⁴ Therefore, where such role enhancement exists, responsibility currently lies with the local institution.¹⁵

- 1.15 It is the responsibility of those leading departments of anaesthesia, together with their constituent consultants to ensure that AAs work under the immediate supervision of a consultant anaesthetist at all times.¹⁵
- 1.16 Only individuals who appear on the voluntary register, currently administered by the Royal College of Anaesthetists, should be employed in AA roles.¹⁵
- 1.17 Where an AA is primarily responsible for the provision of anaesthesia, a named anaesthetic consultant should have overall responsibility for the care of the patient during anaesthesia.¹⁵

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1.18 There should be a dedicated trained assistant, i.e. an ODP or equivalent, in every theatre in which anaesthesia care is being delivered by AAs.¹⁵

1.19 Clinical governance is the responsibility of individual institutions, and for AAs, this should follow the same principles that apply to medically qualified anaesthetists, ensuring:¹⁵

- training that is appropriately focused and resourced
- supervision and support in keeping with practitioners' needs and practice responsibilities
- practice-centred audit and review processes.

2 Equipment, services and facilities

General recommendations for equipment, services and facilities are described in [GPAS chapter 2: Guidelines for the provision of anaesthesia services for the perioperative care of elective and urgent care patients](#).

2.1 In areas where ophthalmic surgery is performed, resuscitation equipment and drugs should be immediately available. These should include a standardised resuscitation trolley and defibrillator. The manufacturer's instructions must be followed regarding use, storage, servicing and expiry of equipment and drugs.⁸

2.2 Where paediatric ophthalmic surgery is performed, appropriate paediatric anaesthetic equipment and monitoring should be available. This should be checked regularly.¹⁶

2.3 Anaesthetists should be trained in the use of, and be familiar with, all equipment they use regularly. The anaesthetist has a primary responsibility to check such equipment before use.¹⁷

2.4 Where lasers are in use for ophthalmic surgery, the correct safeguards must be in place.^{18,19}

Services

2.5 Patients having ophthalmic surgery should undergo preoperative preparation, where there is the opportunity to assess medical fitness and impart information about the procedure.⁷

2.6 Patients who require general anaesthesia or intravenous sedation should undergo preoperative anaesthetic assessment.⁷

2.7 As part of preoperative preparation, the plan for the perioperative management of any existing medications, such as anticoagulant drugs and diabetic treatment, should be agreed, taking into account the relative risks of stopping any medication in the light of the patient's medical condition and the anaesthetic technique required. Advice should be sought from the multiprofessional team (e.g. medical colleagues, clinical pharmacists, specialist nurses) as required, in particular for complex patients.^{7,20}

2.8 The majority of ophthalmic surgery is done as day case procedures under local anaesthesia.²¹ Preoperative assessment should identify those patients who are not suitable for this approach and who might require general anaesthesia or intravenous sedation.^{2,22}

Facilities

2.9 Where ophthalmic surgery is performed as a day case procedure, the facilities should conform to best practice guidance. Day surgery operating theatres should meet the same standards as inpatient operating theatres.^{23,24,25} Room should be available for patients to be seen in private by the anaesthetist and surgeon on the day of surgery.² There should be a designated supervised recovery area, and provision of reclining chairs for patients recovering from local anaesthesia should be considered.

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2.10 In units where ophthalmic surgery is performed, including locations that may be isolated from main theatre services, facilities provided should allow for the safe conduct of anaesthesia and sedation. This would include monitoring equipment, oxygen, availability of opioid and benzodiazepine antagonist drugs, a recovery area, and drugs and equipment to deal with emergencies such as cardiac arrest, anaphylaxis and local anaesthesia toxicity.^{26,27 28, 29}

2.11 All areas in which ophthalmic anaesthesia is performed should have a reliable supply of the medicines required to deliver safe anaesthesia and sedation. Storage arrangements should be such that there is prompt access to them if clinically required; maintains integrity of the medicines and compliance with safe and secure storage of medicines regulations is ensured.³⁰ In addition, anaesthetists and anaesthetic assistants should have access to pharmacy services, both for urgent supply of medicines when required, and for clinical advice on medicines management, medicines administration or prescribing issues.

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

2.13 Optimal patient positioning is critical to the safe conduct of ophthalmic surgery and for patient comfort. Adjustable trolleys/operating tables which permit correct positioning should be available.³¹

2.14 Some patients, for example those with restricted mobility, may require specific equipment such as hoists to position them. Preoperative planning should ensure that such equipment is available, and allow for the extra time and staff needed to position these patients safely.

3 Areas of special requirement

Children

Recommendations for children's services are comprehensively described in [chapter 10](#).¹⁶

Pregnant patients

3.1 Where possible, ophthalmic surgery should be postponed until after delivery. When this is not possible, guidelines on anaesthetising pregnant patients should be followed, e.g. use of left lateral tilt after 16 weeks' gestation.⁷ Local anaesthesia, with or without anxiolytic sedation, is usually preferable to general anaesthesia.

Frail elderly patients

3.2 Much of the ophthalmic surgical population is elderly and frail, and guidelines on perioperative care of elderly patients should be followed.¹

3.3 Services should be streamlined to make preoperative assessment, surgery and postoperative care as simple and effective as possible. Travel and repeated hospital attendance may be especially difficult for these patients.¹

3.4 Special care should be taken to assess social circumstances when discharging elderly patients into the care of an equally frail and elderly spouse. Home support from family or social services may be needed; for instance to ensure that postoperative eye drops are administered in an appropriate and timely fashion. This should be identified at preoperative assessment and arranged in advance.¹

3.5 Older patients should be assessed for risk of postoperative cognitive dysfunction and preoperative interventions undertaken to reduce the incidence, severity and duration.

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- 209 Hospitals should ensure guidelines are available for the prevention and management of
210 postoperative delirium and circulated preoperatively to the relevant admitting teams.³²
- 211 3.6 Postoperative cognitive dysfunction is a particular concern and can disrupt otherwise stable
212 home circumstances. The risk should be reduced as far as possible by minimising interventions
213 and using local anaesthesia alone when feasible.¹
- 214 3.7 Patients deemed to be lacking in capacity should have a best-interest meeting involving
215 relevant stakeholders prior to booking a date for surgery. Such patients often represent high
216 risk for both surgery and anaesthesia, and careful consideration of the risks should be
217 considered. Conclusions should be clearly documented in the medical records.³³
- 218 **Patients with limited mobility**
- 219 3.8 Patients with severely restricted mobility pose additional problems when attempting to
220 position for surgery.³¹ Time should be spent preoperatively with these patients explaining the
221 surgical requirements and assessing the patients' ability to lie flat before a final decision to
222 operate is taken. For patients unable to lie flat, a multidisciplinary discussion is recommended
223 to consider alternative options for positioning or anaesthetic technique.
- 224 3.9 Additional resources may be necessary at the time of surgery, and may include additional
225 personnel, hoists, or extra time allocation on the operating list.
- 226 **Patients requiring complex surgery**
- 227 3.10 Complex ophthalmic surgical cases often require specialised anaesthetic input. This may
228 include patients having repeated ophthalmic procedures, long and difficult cases, and those
229 potentially requiring specialist intravenous drug therapy, such as IV steroids, acetazolamide or
230 mannitol. An anaesthetist of appropriate experience should have dedicated responsibility for
231 operating lists containing such complex cases.
- 232 **Patients with systemic illness**
- 233 3.11 Patients requiring anaesthesia who are systemically unwell should be optimised as far as
234 reasonably practicable beforehand.³⁴ It is extremely rare for ophthalmic surgery to be so
235 urgent that remedial measures cannot be taken. Arrangements for appropriate perioperative
236 medical care should be made, with specialist input from other services as required.
- 237 3.12 Protocols should be in place for the transfer of patients from isolated units who become ill
238 unexpectedly. They should be moved safely and rapidly to a facility which provides an
239 appropriate higher level of care.¹²
- 240 **Critically ill patients**
- 241 Ophthalmic theatres tend to deal with high volume, low impact procedures and may not be set up
242 for managing critically ill patients. Local protocols should be in place to facilitate the ophthalmic
243 care of the critically ill patient.
- 244 3.13 Where necessary, these patients should be anaesthetised in an emergency theatre suite,
245 taking specialist personnel and equipment to the patient, rather than vice versa.
- 246 3.14 When the specialist equipment cannot be moved, all necessary emergency equipment
247 should be immediately available and transfer arrangements to a high dependency or
248 intensive care setting should be in place.

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Procedures performed under local anaesthesia only

Ophthalmologists performing local blocks should follow the standards and safeguards required by their own college.

3.15 Sharp needle based blocks (e.g. peribulbar or retrobulbar block) should only be administered by medically qualified personnel, due to the increased risks of life-threatening complications.² Intravenous access should be established prior to performing sharp needle blocks, and also for any patient deemed to be high risk due to severe comorbidity.²

3.16 All modes of ophthalmic local anaesthesia may result in complications.²¹ Practitioners should be fully aware of these risks and ensure that they know how to avoid and recognise complications, and also be immediately available and able to safely and effectively manage problems when they do occur.

Patients with significant anxiety

Patients undergoing ophthalmic surgery often present with levels of anxiety disproportionate to the surgical complexity and risks involved. Severe anxiety may have a detrimental effect on the safe outcome of surgery. For example, a patient moving during surgery may suffer a sight threatening complication. Most ophthalmic procedures can be safely performed using local anaesthesia only, but some patients may benefit from strategies to reduce anxiety such as hand holding, verbal reassurance, adjustment to drapes, and administration of anxiolytic or sedative agents.

3.17 Patients exhibit extremely wide variation in response to drugs used for sedation. It is difficult to and undesirable to have to manipulate the airway of an unpredictably over-sedated patient during surgery, and so administration of intravenous sedation during ophthalmic surgery should only be undertaken by an anaesthetist whose sole responsibility for the duration of the surgery is to that patient.²

3.18 Patients do not need to be starved when sedative drugs are used in low doses to produce simple anxiolysis.²⁶ Patients should follow fasting guidelines as for general anaesthesia when deeper planes of sedation are anticipated or sedative infusions employed.^{26,35,36}

4 Training and education

4.1 Hospitals should use the training opportunities available in ophthalmic anaesthesia to facilitate anaesthetists in training's acquisition of the learning outcomes of the RCoA 2021 Curriculum.³⁷

4.2 Anaesthetists in training may be given the opportunity to train in Ophthalmic Anaesthesia as a Special Interest Area (SIA) of the RCoA 2021 Curriculum if the hospital caseload and capacity for training meet the requirements for this SIA.^{37,38}

4.3 Structured training in regional orbital blocks should be provided to all inexperienced practitioners who wish to learn any of these techniques. This should include an understanding of the relevant ophthalmic anatomy, physiology and pharmacology, and the prevention and management of complications.² Where possible, trainees should be encouraged to undertake 'wetlab' training or use simulators to improve practical skills.^{39,40,41}

4.4 Intermediate level training as set out in the RCoA 2010 curriculum³⁹ should be an essential criterion and higher level training a desirable criterion in the person specification for a consultant appointment with ophthalmic anaesthetic sessions in the job plan. For candidates who are trained on the RCoA 2021 curriculum, the special interest area in ophthalmic anaesthesia should be an essential criterion.³⁷

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292 4.5 All anaesthetists working in ophthalmic services should have access to continuing
293 educational and professional development facilities for advancing their knowledge and
294 practical skills associated with ophthalmic anaesthesia.⁴²

295 4.6 All staff should have access to adequate time, funding and facilities to undertake and
296 update training that is relevant to their clinical practice, including resuscitation training.⁴³

297 5 Organisation and administration

298 5.1 In single specialty centres, the anaesthetic department should adopt the generic standards
299 described throughout GPAS. This should include a lead paediatric anaesthetist if children are
300 treated.

301 5.2 All ophthalmic patients should receive the same standard of preoperative preparation,
302 perioperative care and follow up, regardless of the type of treatment facility.^{6,23}

303 5.3 Many procedures do not have to be performed out of hours.³⁴ Anaesthetists and surgeons
304 together should devise departmental protocols for the handling of patients requiring urgent
305 procedures, to allow prioritisation from both surgical and anaesthetic perspectives.

306 5.4 Patients assessed to be at high risk of serious perioperative complications, such as a
307 cardiorespiratory event, should be carefully stratified for surgical and anaesthetic
308 requirements, and may be unsuitable for surgery in isolated units without immediate access
309 to anaesthetic/medical cover.

310 5.5 The majority of patients are treated as day cases. Consideration should be given to
311 prescribing suitable analgesics to take home; it may prove useful to use protocols to optimise
312 treatment pathways.⁴⁴

313 Guidelines and protocols

314 5.6 National safety standards for invasive procedures (NatSSIPs) should be adapted for local use
315 as local safety standards for invasive procedures.⁴³ The WHO pre-operative team-brief and
316 checklist system, for example, could be adapted to incorporate intraocular lens selection to
317 help prevent 'wrong lens' errors.⁴⁵

318 5.7 There should be a procedure for checking the laterality of the eye to be operated on prior to
319 local anaesthetic block or general anaesthesia. This should include the eye being marked
320 with an indelible mark by the responsible surgical team prior to admission to the operating
321 theatre. 'Stop before you block' protocols should be adhered to.⁴⁶ Inadequately performed
322 'sign-in' is the primary cause of incorrect eye blocks.⁴⁷

323 5.8 The following local guidelines should be held and easily accessible:

- 324 • practice guidelines for the choice of general anaesthesia or local anaesthesia or local
325 anaesthesia with sedation for ophthalmic procedures
- 326 • management of patients requiring intravenous sedation
- 327 • management of patients requiring urgent ophthalmic surgery
- 328 • escalation to higher levels of care and the safe transfer of patients
- 329 • management of patients on anticoagulants and antithrombotic agents
- 330 • assessment of postoperative cognitive dysfunction risks and the prevention and
331 management of postoperative delirium.

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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 make an overall assessment of the financial impact of these recommendations with the currently available information.

6.1 Hospitals should consider the following actions to optimise the efficient use of clinical staff and patients' time whilst maintaining quality of care:⁴⁸

- use of integrated pathways to co-ordinate the patient journey
- use of screening to identify healthy ambulatory local anaesthesia patients for rapid turnover lists
- separation of lists by subspecialty; ideally by procedure (for example, a full list of cataract procedures) to improve theatre efficiency
- use of some dedicated service lists (no teaching) with experienced clinical staff.

7 Research, audit and quality improvement

7.1 Research in ophthalmic anaesthesia should be encouraged, and time set aside for this activity. Where appropriate, research projects should include patient and care provider involvement.

7.2 Ophthalmic anaesthesia should be included in departmental audit programmes, which may include patient satisfaction, complications and adverse events.^{2,42}

7.3 All serious complications of anaesthesia should be reported, undergo a 'root cause analysis' and be dealt with according to locally agreed governance structures.

7.4 Multidisciplinary quality improvement initiatives strengthen joint working and develop a cohesive working environment. Time should be set aside for regular joint governance meetings looking at both morbidity and quality issues.

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 requires 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', either a member of the ACSA committee 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

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375 clinical reviewers, a lay reviewer and an administrator), who submit a report back to the ACSA
376 committee.

377 The ACSA committee has committed to building a 'good practice library' (GPL), which will be used
378 to collect and share documentation such as policies and checklists, as well as case studies of how
379 departments that have overcome barriers to implementation of the standards, or have
380 implemented the standards in innovative ways.

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

386 9 Patient information

387 In order to give valid informed consent, patients need to understand the nature and purpose of the
388 procedure. It is advisable that this includes discussion and documentation of potential adverse
389 outcomes of regional anaesthetic blocks.⁴⁹ The demographic includes many patients lacking
390 mental capacity, and capacity levels may fluctuate. Care should be taken to ensure that the
391 patient understands the treatment pathway at all times. Appropriate support from other agencies,
392 such as mental capacity advocates (MCAs) should be sought where necessary. More guidance,
393 including on providing information to vulnerable patients, can be found in [GPAS chapter 2:
394 Guidelines for the provision of anaesthesia services for the perioperative care of elective and
395 urgent care patients.](#)^{33,33,50}

396 The Royal College of Anaesthetists have developed a range of [Trusted Information Creator
397 Kitemark](#) accredited patient information resources that can be accessed from our [website](#). Our
398 main leaflets are now translated into more than 20 languages, including Welsh.

399 9.1 Information about the different clinical management options should be discussed and
400 suitable literature provided to assist patients in making an informed choice. The patient must
401 have an opportunity to weigh up the available options.^{49,51}

402 9.2 Translations or interpreters should be made available if required.

403 9.3 Information should be made available to patients that gives details of the surgery and local
404 and general anaesthesia for ophthalmic procedures, as well as advice on what to expect on
405 the day of admission. The Royal College of Anaesthetists and the Royal College of
406 Ophthalmologists have a range of booklets available on their websites to help to inform
407 patients.^{52,53,54}

408 9.4 Written instructions regarding the plan for the perioperative management of existing
409 medications, including if and when to stop anticoagulants, should be given to the patient.

410 9.5 Written information for patients should be easy to read. It should be available in an
411 appropriate language and format for those patients who are visually impaired.^{55,56} It may be
412 necessary to provide translations of patient information booklets into languages suitable for
413 the local population.

414 Areas for future development

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

- 417 • the cost effectiveness of ophthalmic anaesthetists, as opposed to other professionals,
418 providing anaesthesia for ophthalmic surgery

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- 419 • risks to patients of non-anaesthetists providing anaesthesia for ophthalmic surgery
- 420 • clinical guidance, e.g. blood pressure thresholds and blood sugar thresholds for patients
- 421 under local anaesthesia
- 422 • management of postoperative pain following ophthalmic surgery
- 423 • training methodologies for ophthalmic anaesthesia, e.g. evaluation of 'wetlab' and simulator
- 424 training for regional anaesthesia.

425 Glossary

426 **Clinical lead** - SAS doctors undertaking lead roles should be autonomously practicing doctors who
427 have competence, experience and communication skills in the specialist area equivalent to
428 consultant colleagues. They should usually have experience in teaching and education relevant to
429 the role and they should participate in Quality Improvement and CPD activities. Individuals should
430 be fully supported by their Clinical Director and be provided with adequate time and resources to
431 allow them to effectively undertake the lead role.

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