OSSA

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OSSA Position statement on ophthalmic surgery settings

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Improvements in ophthalmic equipment, viewing systems and instrumentation over the years has made it possible to perform many ophthalmic procedures under local anaesthesia, allowing for approximately 60% of all ophthalmic surgery to be performed as a day case surgery/ambulatory surgery (where patients are not admitted overnight).

In South Africa, these surgeries have largely been performed in specialised eye hospitals, acute hospitals without overnight admission of the patient, or day case surgery facilities/unattached theatres (also known as ambulatory surgical centres or ASCs in the USA).

Recently "office-based" surgery (surgery performed in a theatre attached to the surgeons' rooms) has become popular in some countries as a cost-saving initiative.

The Ophthalmological Society of South Africa (OSSA) was tasked to research surgical settings (ambulatory surgical centres/day-case facilities and office-based surgery facilities) in other countries with similar health care needs, with reference to theatre specifications, staffing requirements, anaesthetic guidelines, registration/regulation of the facility and costs involved in running the facility, to guide OSSA in its position statement on ophthalmic surgical settings in South Africa.

The settings researched were in the USA, UK and Australia. (See table 1)

What has emerged from this research, is the following:

- In all 3 the researched settings, day-case/ambulatory surgery is growing in popularity; properly regulated; and premises, staffing and equipment is on par with those of acute hospitals.
- Office-based surgery is popular in the USA, but not performed in the UK and mostly reserved for endoscopic and dental /oral procedures in Australia.
- Setting up an office-based surgical facility in the USA is slightly less costly than setting up an ambulatory surgical facility in that country.
- Both these types of facilities (ASCs and OBS facilities) in the USA are properly regulated/licensed and require the same equipment.
- The running costs of the facilities are similar with an approximate 6% saving on costs for office-based surgery.
- The saving in costs is largely because anaesthesiologists are not always used in office-based surgery facilities, but there is also saving due to better efficiency.
- The main drive for these units in the USA is the fact that these facilities are doctor-owned and boost income (whereas ASCs are generally not owned by the doctors).
- Nowhere is intraocular surgery performed in an unlicensed procedure room.

The South African setting

In South Africa, the Minister of Health published regulations governing private hospitals and unattached operating theatre units as notice No R.158 of 1 February 1980. These were amended on the following dates:

- Government Notice No R.696 of 3 April 1980
- Government Notice No R.2687 of 16 November 1990
- Government Notice No R.434 of 19 March 1993

The government regulations for unattached operating theatres have not been updated in more than 30 years and unfortunately do not reflect the current practice.

The scope of surgery in ambulatory surgery centres/day-case facilities (read licensed unattached theatres) need to be increased from the current list to include most non-complex ophthalmic procedures which could be performed under local/topical surgery.

There will always be cases that cannot be performed safely in either an ambulatory surgery centre/day-case facility or office-based surgery facility.

These would include amongst others, young children, patients with mental disorders, major procedures such as orbital tumour surgery, or patients with high anaesthesia risk. There may also be social reasons why patients need overnight admission to a facility.

The type of surgery undertaken, the method of anaesthesia used, and certain patient factors must dictate the level of theatre provision required.

Whether surgery is performed in an acute hospital, an ambulatory surgical centre/day-case facility or an office-based surgery facility, the facility MUST be regulated (have the necessary license) based on physical factors (size of theatre, ventilation, sterilisation etc), staffing and equipment.

Some (very few) ophthalmic procedures can be performed in an unlicensed sterile procedure room. These include extraocular procedures such as I & D of cysts, pterygium surgery and corneal cross-linking as well as intravitreal injections.

Recommendations:

1. Based on the US regulatory environment of office-based surgery (where office-based surgical facilities look almost exactly like ambulatory surgical centres), no office-based surgery being done in the UK and the lack of any regulations in South Africa on procedure rooms, OSSA believes that any office-based ophthalmic surgical facilities should comply with the regulations of unattached theatres (as do day-case surgical facilities), and should be licenced as such. See table 1.
2. OSSA will assist members with motivation to obtain licences for unattached theatres if requested.
3. Any surgery performed in an unlicensed facility is strongly denounced.
4. Annexure 1 outlines OSSA's requirements for theatres performing ophthalmic procedures. These procedures are tabulated with their respective equipment, complexity, type if anaesthesia, and appropriateness for day case surgery.

References

1. The American Association for Accreditation of Ambulatory Surgery Facilities (AAAASF). Regular Standards and Checklist for Accreditation of Ambulatory Surgery. Facilities Version 14.5. March 2017. Available at: https://www.aaaasf.org/programs/outpatient-programs/outpatient-surgical/?hsLang=en
2. A Clinical audit of an office-based anaesthesia service for dental procedures in Victoria; Journal - Anaesthesia Intensive Care 2018 | 46:4
3. Australasian Health Facility Guidelines – Part B – Health Facility Briefing and Planning 0270 – Day Surgery Procedure Unit. Revision 6, 29 June 2016
4. Guidelines for day-case surgery 2019 - Guidelines from the Association of Anaesthetists and the British Association of Day Surgery C. R. Bailey,1 M. Ahuja,2 K. Bartholomew,3 S. Bew,4 L. Forbes,5 A. Lipp,6 J. Montgomery,7 K. Russon,8 O. Potparic9 and M. Stocker10 .
5. Ophthalmology Service Guidance. Theatre facilities and equipment. February 2018. The Royal College of Ophthalmologists.
6. OSSA Statement on Surgical Procedures submitted to the Council for Medical Schemes, 2020.

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Table 1 – **Surgical settings in other countries**

Table 1						
CRITERIA	**SETTING**					
	USA 1		**AUSTRALIA 2**		**UK 3**	
	AMBULATORY SURGICAL CENTRE (DAY CASE SURGERY)	OFFICE-BASED SURGERY (OBS)	AMBULATORY SURGICAL CENTRE (DAY CASE SURGERY)	OFFICE-BASED SURGERY (OBS)	AMBULATORY SURGICAL CENTRE (DAY CASE SURGERY)	OFFICE-BASED SURGERY (OBS)
THEATRE SIZE SPECIFICATIONS:	As for acute hospital	Smaller than ambulatory surgical centre. A minimum of 4-feet of free-space on all sides of the operating table	Fully equipped theatre with necessary anaesthetic machines and resuscitation equipment	Rooms/Office Not at Day Surgery level. Safe satisfactory environment.	There are minimum standards for theatres which are set out by the Department of Health & Social Care	Not done in UK. All surgery should be done in a dedicated registered operating theatre. Minor procedures (e.g. chalazion and other minor eyelid surgery), and sterile procedures (such as intravitreal injections) do not require a dedicated operating theatre. A suitably equipped procedure room or "clean room", which can be in the outpatient area, may be used. This should be risk assessed and approved as suitable by the hospital infection control team. Many small procedures such as corneal suture removal, and

						anterior chamber tap, can be performed at the slit lamp using aseptic technique.
STAFFING REQUIREMENTS:	As for acute hospital	Crash cart with "nurse stat" team on permanent standby. Located 1.5km from affiliated hospital should complications occur	Properly staffed recovery room fully equipped to handle resuscitation and emergencies including myocardial infarction and cerebro-vascular incidents. The operating theatre and first recovery stages should be equipped and staffed to the same standard as an in-patient facility, with the exception of use of trolleys instead of beds. Agreement and action plan in place to be able to transfer a patient to a high care or intensive-care facility including the availability of the correct transport for this Overnight room if there is a patient that cannot be medically safely discharged.	**No guidelines found**	Day surgery requires the same level of theatre provision as inpatient surgery for any given operation. If local anaesthesia without sedation is used, there is no need to provide the same level of recovery facilities and patients can return to a postoperative seated area. Ophthalmic surgery under general anaesthesia or sedation requires the usual facilities for the administration of anaesthesia and post-operative recovery.	**Nil**

ANAESTHETIC GUIDELINES:	Must adhere to Ambulatory Surgical Centre Guidelines and always have an anaesthetist present	AAAASF guidelines: Only topical or local anaesthetic with minimal oral sedation medication	Regional or general Consultant led	Procedures performed with low doses local anaesthetic so that any dose given into a single location is less than toxic dose if inadvertently given ivi and also lower than toxic dose. Without ivi sedation.	For any operation, all theatre staff must be regularly trained and able to perform basic life support, understand local resuscitation arrangements, and there should be a resuscitation trolley easily and quickly available. For patients receiving GA or deep sedation, standard provision of anaesthetic gases, drugs and equipment and a full resuscitation service is required to the level of national anaesthetic guidance. For patients undergoing local anaesthetic ophthalmic surgery, there needs to be provision in accordance with the RCOphth and RCoA guidelines on ophthalmic anaesthesia 2012 which include: 1. Oxygen and suction available. 2. Monitoring in the form of pulse oximetry, ECG and non-invasive BP available. 3. All ophthalmic units should have formal policy for dealing with medical emergencies should they occur. 4. Appropriate backup from a cardiac arrest/medical emergency team should always be available. 5. At least one person available with Immediate Life Support (ILS) or equivalent qualification, who should be supported by staff with	Nil

					the knowledge and skills to assist in resuscitation. 6. Where the unit is free-standing and there is no immediate access to a formal cardiac arrest team there should be at least one person with Advanced Life Support (ALS) or equivalent. 7. Ideally, an anaesthetist should be available in the theatre complex, particularly when needle blocks such as peribulbar, retrobulbar, and sub-Tenon's blocks for difficult cataracts, or when complex or long cases are being performed. 8. If an anaesthetist is not available in the hospital or ophthalmic unit, peribulbar or retrobulbar techniques should only be used if appropriately skilled staff are immediately available in the operating theatre. 9. If an anaesthetist is not immediately available, the operating ophthalmologist is directly responsible for the management of any untoward event and should have the appropriate skills to safely manage resuscitation, or to have these skills within the theatre team.	

					10. For isolated units or where procedures are performed outside a main theatre complex, clear, agreed and regularly tested protocols and pathway must be in place to enable the patient to receive appropriate advanced medical care, including intensive care.	
REGISTRATION/ REGULATION:	Requires certification and inspection and annual reviews. Certification can be acquired from for example JCAHO (the Joint Commission for Accreditation of Healthcare Organizations), AAAHC (the Accreditation Association for Ambulatory Health Care), and AAAASF (the American Association for Accreditation of Ambulatory Surgery Facilities)	Every state has different requirements – the most relaxed being Missouri which does not require anything, but most others advise or require certification and inspection and annual reviews similar to an Ambulatory Surgical Centre from either JCAHO, AAAHC, or AAAASF.	Regulated and registered – everything from parking to post-operative care	No accrediting body that defines what a minor procedure facility is. Journal article on dental OBS stresses that a way must be found to register such facilities and create minimum standards and guidelines.	Fully regulated There are minimum standards for theatres which are set out by the Department of Health & Social Care, and a catalogue of detailed requirements are outlined in HTM03-01.	Nil
PAYMENT:		Only a 6% reduction in funder payment. More cost-effective to setup but not "cheaper" to run. There was a push by funders towards				

		office-based surgery as they expected to save 30% in surgical cost, however only 6% funder saving incurred				
APPEAL		Most Ambulatory Surgical Centres (equivalent of Day Surgery centre) are not practitioner-owned – unlike in RSA, therefore appeal for US practitioners to "own their own theatres"				

ANNEXURE A – SURGICAL PROCEDURES

GENERAL COMMENTS

If not approached with care, the right skills and knowledge, ocular surgery has the potential to have devastating complications for the patient, the worst of which is blindness. It should therefore only be performed in the correct setting using specialised equipment or instruments and in adequately resourced theatre facilities.

Equipment
Ocular procedures require specialised equipment and instruments. These require special handling, storage and care because they are delicate, fragile, expensive and warrant expert knowledge to operate them. To perform surgery a surgeon will require the following:

- Operating microscopes- coaxial illumination, foot controlled
- Surgeons chair - height, back and armrest adjustable
- Operating table - adjustable height and headrest
- Surgical trays or sets - which are fragile and need to be sterilised, stored or packed and handled with care. Ideally there should be backup sets available.
- Microsurgical blades
- Suturing material - 4/0 to 10/0
- Vitrectomy, phacoemulsification, OCT, keratometry, A- and B-scan and cryotherapy machines
- Implants, devices, shunts, visco-elastic materials, and aqueous and vitreous substitutes
- Consumables and surgical packs
- Specialised lenses – goniotomy lenses, indirect ophthalmoscope condensing lenses, wide-angle inverting lenses etc

- Lasers – which are used for both diagnosis and for treatment. They require separate spaces for storage and use to limit and protect against exposure to dangerous emissions for patients and staff.
- Anaesthetic machine
- Resuscitation equipment
- Anaesthetic drugs and other drugs
- Gases - anaesthetic gases and oxygen, gases used to inject into the eye such as SF6 and C3F8 gas

All this equipment must be safely and carefully stored away to protect it from damage when not in use. Dedicated rooms which are clearly marked are essential for this purpose. Movement and transportation of the equipment and machines should be kept to a minimum.

Theatre setting

Ocular surgery, because of its complex nature requires a fully functional and specialised theatre to make it safe and to limit intra-operative and post-operative complications. A dedicated ophthalmology theatre will ensure that the delicate equipment and machines are not moved around, decreasing the chances for damage. A specialised theatre complex or dedicated section where sterility protocols are followed at all times is necessary. This is also vital for infection control purposes. This separate space needs to have good lighting. There needs to be specialised ventilation requirements and use of positive pressure ventilation of filtered air to dilute airborne contamination, control air movement within the suite such that the transfer of airborne contaminants from less clean to cleaner areas is minimised, control the temperature and, if necessary, the humidity of the space and to assist the removal of, and dilute waste anaesthetic gases.

This space must accommodate for assigned rooms or sections to be used for the following:

- Prep room
- Scrub room
- CSSD
- Operating room
- Recovery room
- Store room
- Dirty room
- Waiting room
- Staff room
- Toilet and change rooms, showers
- Laser room

Infection control and instrument care

LAMELLAR FLOW THEATRE and STATUM STERILIZING: Special considerations are associated with the processing of instruments used for intraocular surgery, both because of the nature of the instruments themselves and because of the sensitive nature of the eye. Many of the intraocular instruments currently in use are complex and delicate and cannot be processed by automated methods; therefore, they must be cleaned manually. Because manual cleaning methods might be less controlled than automated cleaning methods, additional care must be taken during processing to ensure effective cleaning. The situation is further compounded by the sensitivity of ocular tissue to the introduction of foreign material into the anterior chamber of the eye, which could result in an acute inflammatory response known as toxic anterior segment syndrome (TASS). This inflammatory response could lead to severe visual impairment if it is not recognized and treated in a timely manner.

General considerations: Because health care facilities must process a wide range of surgical instrumentation, it is often difficult to implement specific cleaning procedures for a particular class of surgical instruments. However, in view of the sensitivity of ocular tissue to the presence of foreign substances or material, it is critical that the cleaning and sterilization procedures recommended by the manufacturer of the intraocular surgical instruments be closely followed. In addition, ongoing education, training, and verification of competency in the cleaning and sterilization of intraocular surgical instruments are essential. This special care is an ongoing process controlled by Ophthalmic Theatres. A designated cleaning area and equipment dedicated to the cleaning of intraocular surgical instruments should be identified. Intraocular surgical instruments should be processed separately from general surgical instruments and equipment to reduce the potential for cross-contamination by material or residue from general surgical instruments.

Anaesthesia

Almost 90% of all ophthalmology cases are done under local anaesthesia with sedation, however no local anaesthesia procedure is without risk of systemic adverse events. All staff should be adequately and regularly trained to recognise and manage these. Resuscitation and life support equipment should be easily accessible at all times. A conversion to general anaesthesia must always be anticipated and prepared for.

Some ocular surgery procedures are unique in the sense that they can be long in duration, can be painful and are performed even in children. This often makes it necessary to schedule the surgery under general anaesthesia. Therefore, all the requirements for general anaesthesia such as an anaesthetist, anaesthetic machines, monitors, drugs, gas, oxygen, recovery room etc., should be available to the surgeon.

For patients undergoing local anaesthetic ophthalmic surgery, there needs to be proper provision as in accordance with the Royal College of Ophthalmology and Royal College of Anaesthetists guidelines on ophthalmic anaesthesia 2012. This includes the following:

- Oxygen and suction available.
- Monitoring in the form of pulse oximetry, ECG and non-invasive BP available.
- All ophthalmic units should have formal policy for dealing with medical emergencies should they occur. Appropriate backup from a cardiac arrest/medical emergency team should always be available.
- At least one person available with Immediate Life Support (ILS) or equivalent qualification, who should be supported by staff with the knowledge and skills to assist in resuscitation.
- Where the unit is free-standing and there is no immediate access to a formal cardiac arrest team there should be at least one person with Advanced Life Support (ALS) or equivalent.
- Ideally, an anaesthetist should be available in the theatre complex, particularly when needle blocks such as peribulbar, retrobulbar, and sub-Tenon's blocks for difficult cataracts, or when complex or long cases are being performed.
- If an anaesthetist is not available in the hospital or ophthalmic unit, peribulbar or retrobulbar techniques should only be used if appropriately skilled staff are immediately available in the operating theatre.
- If an anaesthetist is not immediately available, the operating ophthalmologist is directly responsible for the management of any untoward event and should have the appropriate skills to safely manage resuscitation, or to have these skills within the theatre team.
- For isolated units or where procedures are performed outside a main theatre complex, clear, agreed and regularly tested protocols and pathway must be in place to enable the patient to receive appropriate advanced medical care, including intensive care.

Post-operative recovery and care

Provisions need to be made for the post-operative care of patients who have undergone eye surgery. If the procedure is performed under general anaesthesia or with sedation, the patient should be monitored first in a specifically designed recovery room with a sufficient number of staff who are trained to agreed standards. This patient can then be handed over to the ward for further monitoring before being discharged if in a stable condition.

Sometimes post-operative ward admission is required following eye surgery for monitoring of wounds and filtration blebs, anterior chamber integrity, IOP spikes, hypotony, bleeding and infections. This may become more important if there were any intra-operative complications. A dedicated ophthalmology ward with ophthalmic trained nursing staff is ideal but a general surgical ward with ophthalmic trained staff would suffice. Every effort should be made to make in-patient facilities available for patients should the need arise.

Summary

Eye surgery is complex surgery and should only be performed by trained ophthalmologists in a facility designed to maximise efficiency and patient safety. The hospital theatre complex should be designed and resourced specifically to fulfil the requirements needed by ophthalmologists to perform the surgery safely and effectively. Although most ocular procedures can be done under local anaesthesia the use of sedation is usually necessary. The need to start with or convert to a general anaesthesia should always be accommodated. Anaesthetists are an important stakeholder in the ophthalmic surgical management and aftercare of patients. Facilities where this type of surgery takes place must also provide the resources for them to do their job safely. Some patients that have undergone eye surgery may require admission into a ward for post-operative care. Arrangements for in-patient management must be in place and the nursing staff must be adequately trained to take care of these patients.

Needs regarding equipment and anaesthesia for specific ocular procedures follow

Surgical procedure	Equipment Needed	Technical features	Appropriate anaesthesia	Complexity of procedure	Appropriate for Day theatre	Comments
ORBITAL SURGERY						
Drainage of orbital abscess	From only an incision and drainage tray up to microsurgical tray Microscope/Loops	Can be very painful.	General. Cannot do a block through an abscess.	Low to high.	Only if it is a systemically healthy adult patient.	The surgery can vary from very easy to extremely difficult depending on origin and extent of the abscess.
Removal of orbital tumour	Microsurgical tray Microscope/loops	At times very complex surgery needing ENT surgeon, neurosurgeon or maxillofacial	General anaesthesia	Vary from medium to very complex	Depending on the extent of the tumour this is not a day case surgery.	The surgery can vary from very easy to extremely difficult depending on extent of the tumour.

		surgeon assistance				
Removal of orbital prosthesis	Microsurgical tray Microscope	Can be difficult due to adhesions	Regional block or general anaesthesia	Medium depending on adhesions	Appropriate if microsurgical facilities available	Need microsurgical facility
Exenteration	Microsurgical tray Microscope Orthopaedic tray	Usually done for patients with infiltrating cancer.	General anaesthesia	Very complex	Not appropriate for day surgery	Possible High Care post-operatively due to bleeding risk.
Orbitotomy requiring bone flap	Microsurgical tray Microscope Orthopaedic tray	Very extensive surgery	General anaesthesia	Very complex	Not appropriate for day surgery	Possible High Care post-operatively due to bleeding risk.
Eye socket reconstruction	Microsurgical tray Microscope	Difficult due to trauma and adhesions	General anaesthesia	Very complex	Not appropriate for day surgery	Possible High Care post-operatively due to bleeding risk.
Hydroxyapatite implantation in eye cavity when evisceration or enucleation was done previously	Microsurgical tray Microscope	Difficult due to trauma and adhesions	General anaesthesia or regional block depending on the extent of adhesions and original reason for evisceration	Medium to high complexity	Appropriate if microsurgical facilities available	Need microsurgical facility
Second stage hydroxyapatite implantation	Microsurgical tray Microscope	Difficult due to trauma and adhesions	General anaesthesia or regional block depending on the extent of adhesions and original reason for evisceration	Medium to high complexity	Appropriate if microsurgical facilities available	Need microsurgical facility

LID SURGERY						
Tarsorrhaphy	Microsurgical tray Microscope	Depending on cause and extent can be done in rooms	Regional block or general anaesthesia (children)	Low complexity	Appropriate if no underlying systemic disease which led to the need for the tarsorrhaphy and which might prevent the patient having surgery in a day facility (example after a stroke)	These patients usually have underlying systemic disease necessitating the tarsorrhaphy (eg stroke) Need microsurgical facility
Excision of superficial lid tumour	Microsurgical tray Microscope	Microscope or loops needed to adhere to lid margin alignment	Regional block or general anaesthesia	Medium complexity	Appropriate if microsurgical facilities available	Need microsurgical facility
Repair of skin laceration lid: Simple	Microsurgical tray Microscope	Where systemic trauma of the eyeball is involved, this may become very complex.	Regional block or general anaesthesia	Low complexity	Appropriate if microsurgical facilities available	Where systemic trauma of the eyeball is involved this becomes very complex. (eg motor vehicle accidents - these patients may need ICU care).
Diathermy to wart on lid margin	Microsurgical tray Microscope or loupes		Regional block or general anaesthesia (children)	Low complexity	Appropriate	Need microsurgical facility

Removal of foreign body from eyelid	Microsurgical tray Microscope, loupes or slit lamp	Depending on site of foreign body this can be complex and mobile XR might be needed	Topical, regional block or general anaesthesia (children)	Low to medium complexity	Appropriate	Depending on site of foreign body mobile XR might be needed Need microsurgical facility
Electrolysis of eyelashes	Microsurgical tray Microscope, loupes or slit lamp	Can also be done in rooms	Local infiltration or regional block	Low complexity	Appropriate	Need microsurgical facility
Excision of Meibomian cyst	Microsurgical tray Microscope or loupes	Can also be done in rooms	Regional block, local infiltration or general anaesthesia (children)	Low complexity	Appropriate	Cannot do children under local anaesthesia
Lid operation for facial nerve paralysis	Microsurgical tray Microscope	At times very complex surgery needing ENT surgeon, neurosurgeon or maxillofacial surgeon assistance	Regional block or general anaesthesia	Medium to high complexity	Appropriate if microsurgical facilities available	The extent of surgery will vary depending on the cause. If after a cerebro-vascular accident these patients may need ICU admission Need microsurgical facility
Entropion or ectropion repair - simple	Microsurgical tray Microscope		Local infiltration, regional block or general anaesthetic (children)	Medium complexity	Appropriate if microsurgical facilities available	These patients are usually babies with congenital origin or mostly very old patients with systemic comorbidities. Need microsurgical facility

Entropion or ectropion by free skin, mucosal grafting or flap	Microsurgical tray Microscope	Very vascular skin flaps with high risk of bleeding post operatively	General anaesthesia	High complexity	Not appropriate, depending on extent of flaps and where free graft is taken from.	Extent and site of the flap may demand ICU admission due to bleeding risk
Procedure for repair of partial or total loss of eyelid	Microsurgical tray Microscope	Where systemic trauma of the eyeball is involved, this becomes a very complex procedure	Regional block or general anaesthesia	Medium to high complexity	Appropriate if microsurgical facilities available. Not appropriate in poly-trauma	Where systemic trauma of the eyeball is involved, this becomes very complex procedures (eg MVAs) ICU admission may be needed
Full thickness eyelid laceration for tumour or injury	Microsurgical tray Microscope	Where systemic trauma of the eyeball is involved, this becomes a more very complex procedure	Regional block or general anaesthesia	Medium to high complexity	Appropriate if microsurgical facilities available. Not appropriate in poly-trauma	Where systemic trauma of the eyeball is involved, this becomes very complex procedures (eg MVAs) ICU admission may be needed
Blepharoplasty	Microsurgical tray Microscope	Removal of orbital fat pads can be complex	Regional block or general anaesthesia	Medium to high complexity	Appropriate if microsurgical facilities available	High intra-orbital bleeding risk with optic nerve damage. Patient needs to be observed for a few hours post-operatively
Ptosis repair	Microsurgical tray Microscope Fascia lata stripper	May need to harvest autologous fascia lata from patient's leg for sling procedures	General anaesthesia for children, regional block or local infiltration for others	Medium to high complexity	Appropriate if microsurgical facilities available	

LACRIMAL PASSAGES SURGERY						
Probing of ducts	Eye surgery set with different size probes and dilator	Often done in children	General anaesthesia – child Adult – local or topical anaesthesia	Low complexity	Appropriate for day theatre	
Punctoplasty	Eye surgery set May require surgical microscope		Topical and local anaesthesia	Low complexity	Appropriate for day theatre	
Dacryocystorrhinostomy (DCR)	Specialised eye surgery set May require surgical microscope or loupes	Can be done via external or endoscopic approach	General anaesthesia	Highly complex	Inappropriate for day theatre	May need otorhinolaryngology expertise and equipment
Conjunctivodacryocystorrhinostomy (CDCR)	Specialised eye surgery set May require surgical microscope or loupes	External and endoscopic approach	General anaesthesia	Highly complex	Inappropriate for day theatre	May need otorhinolaryngology expertise and equipment
Repair of canaliculus	Specialised eye surgery set and stents May require surgical microscope or loupes	Surgery may require entry into the nose	General anaesthesia – children, extensive injury Local anaesthetic	High complexity	Inappropriate for day theatre	

NOTE: Any nasolacrimal surgery might need intraoperative conversion to a more complex case depending on the findings of the examination under anaesthesia, and this escalation might be unsuitable for a day theatre. A nasal endoscope needs to be available even for the relatively minor procedures.
Nasolacrimal surgery is sometimes combined with orbital surgery, for which day surgery theatre facilities will be inadequate.

CONJUNCTIVAL SURGERY						
Pterygium excision	Surgical microscope Microsurgical tray	Careful closing of Tenon's capsule and conjunctiva to prevent granuloma formation	Regional block or local infiltration General anaesthesia for children or mentally challenged	Low complexity	Appropriate for day theatre surgery with microsurgical facilities	Ideally Eye theatre and staff
Removal of conjunctival mass lesion / squamous carcinoma	Surgical microscope Microsurgical tray Specimen receiver	Surgery may be extensive if tumour involves fornices, lacrimal passages or orbit	Regional block or local infiltration. General anaesthesia for children, mentally challenged or extensive lesion	Low to high complexity depending on size of tumour	Appropriate for day theatre surgery with microsurgical facilities if not extensive	Ideally Eye theatre and staff May need pathologist assistance for Moh's technique
Repair conjunctival laceration	Surgical microscope Microsurgical tray	Careful closing of Tenon's capsule and conjunctiva to prevent granuloma formation	Regional block or local infiltration General anaesthesia for children or mentally challenged	Low complexity	Appropriate for day theatre surgery with microsurgical facilities	Ideally Eye theatre and staff
Gunderson flap	Surgical microscope Microsurgical tray	Advancement of conjunctiva over the cornea to assist corneal healing	Regional block or local infiltration General anaesthesia for children or	Low complexity	Appropriate for day theatre surgery with microsurgical facilities	Ideally Eye theatre and staff

			mentally challenged			
Conjunctival recession	Surgical microscope Microsurgical tray	Careful closing of Tenon's capsule and conjunctiva to prevent granuloma formation	Regional block or local infiltration General anaesthesia for children or mentally challenged	Low complexity	Appropriate for day theatre surgery with microsurgical facilities	Ideally Eye theatre and staff
Conjunctival biopsy	Surgical microscope Microsurgical tray	Careful closing of Tenon's capsule and conjunctiva to prevent granuloma formation	Regional block or local infiltration General anaesthesia for children or mentally challenged	Low complexity	Appropriate for day theatre surgery with microsurgical facilities	
CORNEAL SURGERY						
Penetrating Keratoplasty (PKP / Mushroom KP)	Surgical microscope Specialised corneal surgical tray Intraoperative keratometry Corneal tissue Automated keratome Corneal trephines and punches	Full thickness corneal transplantation Extensive corneal suturing	General anaesthesia Muscle relaxants	Highly complex	Inappropriate for day-theatre restriction	Due to complexity, a fully equipped major theatre is required Ideally a fully dedicated Eye theatre and staff
Lamellar Keratoplasty -SALK -DALK / BIG BUBBLE DALK -DMEK / PDEK -DSAEK	Surgical microscope Intra-operative keratometry Specialised corneal surgical tray Corneal tissue	Partial thickness transplant of corneal tissues Complex lamellar tissue dissection required ±	General anaesthesia with muscle relaxants preferred/ Regional	Highly complex	Inappropriate for day-theatre restriction	Due to complexity, a fully equipped major theatre is required Ideally a fully dedicated Eye theatre and staff

	Intraoperative OCT Intraoperative gas Corneal trephines and punches Excimer/ Femtosecond laser(s) Automated keratome	pneumatic dissection (big bubble DALK) - intraocular gas required	anaesthesia with conscious sedation			
Removal Corneal Foreign Body	Surgical microscope Minor surgical tray	Removal under direct magnified view	Regional or topical. General anaesthesia for children	Low complexity	Appropriate for day-theatre with microsurgical facilities	
Corneal Biopsy	Surgical microscope Minor surgical tray	Excision or incision biopsy of affected tissue	Regional or topical. General anaesthesia for children	Low complexity*	Appropriate for day-theatre with microsurgical facilities	*Large tumours or thin corneas on case-by-case basis may be inappropriate for day theatre.
Corneal Debridement	Surgical microscope Minor surgical tray	Mechanical or chemical removal of tissue from the corneal surface	Regional or topical. General anaesthesia for children	Low complexity*	Appropriate for day-theatre with microsurgical facilities	*Large lesions or thin corneas on case-by-case basis inappropriate for day theatre
Intra-corneal ring segments	Surgical microscope Corneal topography Specialised corneal surgical tray Corneal tissue Intraoperative OCT Femtosecond laser	Insertion of intracorneal ring into the corneal stroma	General, regional or topical anaesthesia	Highly complex	Inappropriate for day-theatre restriction	Due to complexity, a fully equipped major theatre is required Ideally dedicated eye theatre and staff

CATARACT SURGERY						
Basic cataract	Surgical ophthalmology microscope with 3D. Teaching scope Adjustable axial and co-axial light sources Intra-operative keratometry Specialised cataract surgical tray Vitrectomy machine (anterior and posterior)		Peribulbar block, topical or general anaesthesia	Moderate complexity	Inappropriate for day-theatre restriction	A fully equipped major theatre is required Ideally dedicated eye theatre and staff Aseptic theatre facilities required with no potential for cross-infection from non-ophthalmology cases
Complex cataract -traumatic -subluxed -uveitic -small pupils -nanophthalmos -myopia -diabetic -pseudo-exfoliation (See ICD-10)	Surgical microscope Teaching scope Adjustable axial and co-axial light sources Intra-operative keratometry Specialised cataract surgical tray Vitrectomy machine (anterior and posterior) Lens-positioning device eg Callisto Capsular tension ring Pupil dilating devices		Peribulbar block, topical or general anaesthesia	Highly complex	Inappropriate for day-theatre restriction	A fully equipped major theatre is required Ideally dedicated eye theatre and staff Aseptic theatre facilities required with no potential for cross-infection from non-ophthalmology cases

Paediatric cataract and cataract in patients with mental disability	Surgical ophthalmology microscope. Teaching scope Adjustable axial and co-axial light sources Intra-operative keratometry Specialised cataract surgical tray Vitrectomy machine (anterior and posterior) Intraoperative A-scan		General anaesthesia	Highly complex	Inappropriate for day-theatre restriction	A fully equipped major theatre is required Ideally dedicated eye theatre and staff
GLAUCOMA PROCEDURES						
Non-penetrating filtering techniques -Deep sclerotomy (simple or assisted by CO_2 laser) -Canaloplasty -Viscocanalostomy	Operating microscope- coaxial illumination, foot controlled Specialised glaucoma surgical tray CO2 laser Probes Visco-elastics Anti-metabolites	Working under high magnification Knowledge of handling and disposal of anti-metabolites and safe use of lasers	Regional block or general anaesthetic (children and mentally challenged patients)	Highly complex	Inappropriate for day-theatre restriction	Fully equipped major theatre is required with dedicated eye theatre and staff
Penetrating filtering techniques -Goniotomy -Trabeculotomy -Trabeculectomy	Operating microscope- coaxial illumination, foot controlled Specialised glaucoma surgical tray Goniotomy lens Trabectome Anti-metabolites	Working under high magnification Knowledge of handling and disposal of anti-metabolites	Regional block or general anaesthetic (children and mentally challenged patients)	Highly complex	Inappropriate for day-theatre restriction	Fully equipped major theatre is required with dedicated eye theatre and staff

Aqueous drainage devices -Ahmed -Molteno -Baerveldt	Operating microscope- coaxial illumination, foot controlled Specialised glaucoma surgical tray Tubes/devices Anti-metabolites Donor sclera	Working under high magnification Knowledge of handling and disposal of anti-metabolites and donor tissue	Regional block or general anaesthetic (children and mentally challenged patients)	Highly complex	Inappropriate for day-theatre restriction	Fully equipped major theatre is required with dedicated eye theatre and staff
Micro-invasive glaucoma surgery -Schlemms canal- iStent, Trabectome -Suprachoroidal space- CyPass, iStent supra -Subconjunctival space- Xen Gel stent	Operating microscope - coaxial illumination, foot controlled Specialised glaucoma surgical tray Stents/devices Anti-metabolites	Working under high magnification Knowledge of handling and disposal of anti-metabolites	Regional block or general anaesthetic (children and mentally challenged patients)	Highly complex	Inappropriate for day-theatre restriction	Fully equipped major theatre is required with dedicated eye theatre and staff
Cyclodestructive procedures -Cyclocryotherapy -Cyclophotocoagulation -External laser procedures	Indirect ophthalmoscope Cryotherapy unit Lasers	Knowledge of use of lasers and cryo-unit as well as indirect ophthalmoscopy	Regional block or general anaesthetic (children and mentally challenged patients)	Moderate to highly complexity	Inappropriate for day-theatre restriction	Fully equipped major theatre is required with dedicated eye theatre and staff

VITREORETINAL PROCEDURES						
Posterior vitrectomy (All retinal pathology: retinal detachment, vitreous haemorrhage, diabetic retinopathy, retinal membranes, macular holes etc)	Surgical microscope Specialised vitrectomy surgical tray Vitrectomy pack Vitrectomy machine Back-up machine Laser machine Dyes: Indocyanin green, dual membrane blue Retina forceps Retinal scissors Gases and oil	Usually long surgical procedures Intraocular gas used Retinal membrane peeling requires absolute ocular akinesia	General anaesthesia Muscle relaxants	Highly complex	Inappropriate for day-case restriction	Due to complexity of cases a fully equipped major theatre required Ideally a dedicated eye theatre and staff
Scleral buckle	Surgical microscope Specialised scleral buckle tray Cryotherapy Indirect ophthalmoscope	Usually long surgical procedures Intraocular gas used	General anaesthesia Muscle relaxants	Highly complex	Inappropriate for day-case restriction	Due to complexity of cases a fully equipped major theatre required Ideally a dedicated eye theatre and staff
Removal of silicone oil	Surgical microscope Specialised vitrectomy surgical tray Vitrectomy pack Vitrectomy machine Back-up machine Laser machine Dyes: Indocyanin green, dual membrane blue Retina forceps	Usually long surgical procedures Intraocular gas used Retinal membrane peeling requires absolute ocular akinesia	General anaesthesia Muscle relaxants	Highly complex	Inappropriate for day-case restriction	Due to complexity of cases a fully equipped major theatre required Ideally a dedicated eye theatre and staff

	Retinal scissors Gases and oil					
Indirect retinal laser	Indirect ophthalmoscope Laser with LIO connection	Scleral indentation required	Regional or general anaesthesia (Children general)	Low complexity	Appropriate for day-theatre	
Intravitreal injection	Surgical microscope Sterile tray	Sterile procedure	Topical / regional or general anaesthesia (children)	Low complexity	Appropriate for day-theatre	
Vitreous tap	Surgical microscope Sterile tray	Sterile procedure	Topical / regional or general anaesthesia (children)	Low complexity	Appropriate for day-theatre	