



# **National Ophthalmology Database Audit**

# **National Cataract Audit Eligibility**

Sixth year of the prospective National Cataract Audit version

May 2023

Document authors
Paul HJ Donachie

John Buchan

#### **Document Location**

The master copy of the document can be found in the RCOphth shared drive

#### **Version History**

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.1	Paul Donachie	08/04/2019	John Sparrow	08/04/2018	New VR indications added
1.3	Paul Donachie	06/05/2020	John Sparrow	17/08/2020	Audit year 4 changes
1.4	Paul Donachie	19/11/2021	John Buchan	01/12/2021	Audit year 5 changes
1.5	Paul Donachie	03/02/2022	John Buchan	03/02/2022	Audit year 5 additional change
1.6	Paul Donachie	09/05/2023	John Buchan	09/05/2023	Audit year 6 additional change

#### **Distribution**

This document has been distributed to:

Version #	Name	Date	Reason

# Contents

Section		Page number
1	The RCOphth NOD National Cataract Audit team	4
2	Abbreviations	5
3	Acknowledgements	6
4	Introduction	7
5	Cataract Inclusion/Exclusion criteria	8
6	Eligible "Cataract" indications for surgery	10
7	Ineligible "Cataract" indications for surgery and diagnoses	12
8	Combined vitreoretinal indication for surgery with a pars plana vitrectomy	19
9	Ineligible operative procedures	21

#### 1 The RCOphth NOD National Cataract Audit team

#### RCOphth project clinical lead

John C Buchan - Consultant Ophthalmologist, Leeds Teaching Hospitals NHS Trust and Assistant Professor at the International Centre for Eye Health

#### **RCOphth project executive lead**

Ms Kathy Evans – Chief Executive, Royal College of Ophthalmologists

#### The RCOphth NOD audit project office:

Ms Beth Barnes - Head of Professional Standards

Ms Martina Olaitan – RCOphth NOD Cataract Audit Project Manager

The Royal College of Ophthalmologists

18 Stephenson Way

London

NW1 2HD

Tel: +44 (0) 20 7935 0702 Fax: +44 (0) 20 7383 5258

Email: noa.project@rcophth.ac.uk

#### The RCOphth NOD delivery unit:

Mr Paul Henry John Donachie – RCOphth NOD Senior Medical Statistician

Charlotte Norridge – Medical Statistician

Marta Gruszka-Goh - Medical Statistician

Professor Peter Scanlon - Consultant Ophthalmologist

Gloucestershire Retinal Research Group office

Above Oakley Ward

Cheltenham General Hospital

Gloucestershire

**GL53 7AN** 

Phone: 03004 22 2852 Email: ghn-tr.nod@nhs.net

# Abbreviations

Abbreviation	Description
AC	Anterior chamber
C2F6	Perfluoroethane gas
C3F8	Perfluoropropane gas
EMR	Electronic Medical Record
FB	Foreign Body
IOL	Intra-ocular lens
NHS	National Health Service
NOD	National Ophthalmology Database
PPV	Pars plana vitrectomy
RCOphth	Royal College of Ophthalmologists
RD	Retinal Detachment
SF6	Sulphur hexafluoride gas

## 3 Acknowledgment

The Royal College of Ophthalmologists National Ophthalmology Database Audit (RCOphth NOD) is governed by the RCOphth and conducts the National Cataract Audit (NOA).

We also acknowledge the support of the hospitals that are participating in the national ophthalmology audit and thank our medical and non-medical colleagues for the considerable time and effort devoted to data collection. All participating centres are listed on the RCOphth NOD website (<a href="https://www.nodaudit.org.uk">www.nodaudit.org.uk</a>).

We acknowledge with thanks the contribution of Professor John Sparrow who provided diligent clinical and academic oversight and leadership of the NOD over many years to bring it to its current stature.

It is with gratitude that we remember our friend and colleague Robert Johnston, who sadly died in September 2016. Without his inspirational vision, determination and career long commitment to quality improvement in ophthalmology this work would not have been possible

#### 4 Introduction

The Royal College of Ophthalmologists (RCOphth) is the governing authority for the National Ophthalmology Database Audit (NOD) and conducts the National Cataract Audit on data concerning cataract surgery. The audit is open to all providers of National Health Service (NHS) or privately funded cataract surgery in England, Guernsey, Scotland, Northern Ireland and Wales. The data is collected as part of routine clinical care on electronic medical record (EMR) systems or in-house data collection systems and the analysis is performed by the RCOphth NOD Audit statisticians based in Cheltenham General Hospital.

The RCOphth NOD receives data collected on multiple systems that can have different formats for recording the information. For this reason, the terminology used in this document is the wording used in the supplied information.

National Cataract Audit results are reported to The Care Quality Commission, available on the audit website (<a href="www.nodaudit.org.uk">www.nodaudit.org.uk</a>), in annual reports and peer-reviewed publications. At the end of a reporting cycle, aggregated centre level data is uploaded to data.gov and is accessed by the Getting It Right First Time programme. Centre level results include operations performed by trainee surgeons, but publicly available named surgeon results do not.

Due to the different geographical locations and funding agreements, results can be reported for a devolved nation, NHS funded or private funded surgery depending on the reporting destination.

#### Eligibility for any cataract analysis

The definition of an eligible operation is constructed to include all cases in which the intention had been to undertake a phacoemulsification cataract extraction and lens implant as a standalone procedure (potentially accompanied by other adjuncts such as pupil stretching or injections of therapeutic substances that are either intrinsic to the cataract operation or are incidental additions which would not be expected to impact intra-operative complications).

Cataract operations are included in RCOphth NOD analyses if they comply with the conditions listed below; if not then they are excluded from cataract analyses;

- Operation performed in adults (aged 18 or above).
- Operation included a phacoemulsification procedure.
- Operation has a recorded date of surgery.
- Operative data includes a surgeon identifier.
- Operative data includes a valid grade of surgeon.
- Operation included a "cataract" indication for surgery (section 6).
- Operation without any of the ineligible cataract indications for surgery or diagnoses (section 7)
- Operation did not include any ineligible operative procedures (section 8).
- Operations that included a pars plana vitrectomy with no vitreoretinal indication for surgery and no other vitreoretinal procedures except for sponge and scissor vitrectomy or automated anterior vitrectomy.

#### National Ophthalmology Database Cataract Audit specific criteria

For the national ophthalmology database audit of cataract surgery further criteria apply, these are;

- For named centre and named surgeon results, at least 50 eligible operations are required.
- For published named surgeons a valid General Medical Council number is required.
- For post-cataract visual acuity (VA) loss, both a preoperative and postoperative VA
  measurement is required, operations performed in the final 2 months of an audit
  year are not included, and there has to be <40% of operations with missing VA
  data for a result to be produced for a centre or surgeon.</li>

## 6 Eligible "Cataract" indications for surgery

When an indication for surgery is recorded, there must be at least one of the eligible cataract surgery indications for surgery for the eye to be included in analysis. When an indication for surgery is recorded and not as one of the valid "cataract" indications for surgery, the operation is excluded. When no indication for surgery is recorded, the eye is considered eligible under the assumption that cataract extraction is the reason for surgery when phacoemulsification is performed.

The following indications for surgery from the available data are classified as "cataract" indications for surgery;

- 1+ cortical cataract
- 1+ nuclear sclerotic cataract
- 1+ posterior subcapsular cataract
- 2+ cortical cataract
- 2+ nuclear sclerotic cataract
- 2+ posterior subcapsular cataract
- 3+ cortical cataract
- 3+ nuclear sclerotic cataract
- 3+ posterior subcapsular cataract
- Age-related cataract
- Aniseikonia
- Anisometropia
- Anterior polar cataract
- Anterior subcapsular cataract
- Atopic cataract
- Blue spot cataract
- Brunescent cataract
- Cataract
- Cataract extraction for anisometropia
- Cataract extraction for refractive reasons
- Cataract extraction for other reasons
- Cataract extraction for unknown aetiology

- Cataract extraction for visual improvement
- Cataract extraction to improve fundal view
- Cataract secondary to uveitis
- Clear lens extraction for anisometropia
- Clear lens extraction for refractive reasons
- Christmas tree cataract
- Coronary cataract
- Cortical cataract
- Diabetic cataract
- Drug induced cataract
- Familial cataract
- Hypermature cataract
- Immature cortical cataract
- Incipient cataract
- Lamellar cataract
- Mature / white cataract
- Metabolic cataract
- Morganian cataract
- Non-significant cataract
- Nuclear sclerotic cataract
- Phacomorphic cataract
- Post-vitrectomy cataract
- Posterior subcapsular cataract
- Punctate cataract
- Retrodot cataract
- Suture tip cataract
- Watercleft cataract

# 7 Ineligible "Cataract" indications for surgery and diagnoses

If any of the following indications for surgery are recorded as the indication for the cataract surgery then the operation is excluded from analysis. For the specified diagnosis, if any of these are recorded at any point prior to and including the day of cataract surgery, then the operation is excluded from analysis. When an ocular co-pathology is recorded as "other" and there is text to detail the condition, this information is treated as a diagnosis for exclusion purposes. Some of the conditions in Table 1 are recorded as indications for surgery, some as diagnoses and some as the accompanying text with ocular co-pathology data. For many, they can be recorded as an indication for surgery and/or a diagnosis. Some terms have been condensed as there are multiple methods or sub-types.

**Table 1:** Ineligible indications for surgery and diagnoses

Indication / diagnosis	Exclude if indication for surgery	Exclude if a recorded diagnosis
Abscess of eye	Yes	Yes
Absent anterior chamber of eye	Yes	Yes
Adhesions and disruptions of iris and ciliary body	No	Yes
Anophthalmos	No	Yes
Angle foreign body	Yes	Yes
Anterior chamber angle recession	No	Yes
Anterior chamber cleavage syndrome	Yes	Yes
Anterior dislocation / luxation of lens	Yes	Yes
Anterior segment dysgenesis	Yes	Yes
Aphakia – Elschnig's pearls	Yes	Yes
Avulsion of eyelid	Yes	Yes
Avulsion of periorbital region	Yes	Yes
Blind eye	Yes	Yes
Blow out fracture of orbit	Yes	Yes
Blunt injury of eye	Yes	Yes
Burn of periorbital region	Yes	No
Cataract following rupture of capsule	Yes	Yes

Chorioretinal rupture	Yes	Yes
Chorioretinitis sclopetaria	Yes	Yes
Choroidal haemorrhage and rupture	Yes	Yes
Choroidal rupture	Yes	Yes
Closed angle glaucoma (congenital anomaly)	Yes	Yes
Closed fracture of orbit	No	Yes
Coloboma of lens	Yes	Yes
Congenital anomaly of eye	Yes	Yes
Congenital aphakia	Yes	Yes
Congenital cataract	Yes	Yes
Congenital cataract and lens anomalies	Yes	Yes
Congenital cysts of the posterior segment	Yes	No
Congenital ectopic lens	Yes	Yes
Congenital glaucoma (Broad thumb syndrome)	Yes	Yes
Congenital glaucoma (Chromosomal anomaly)	Yes	Yes
Congenital glaucoma (Other)	Yes	Yes
Congenital hereditary endothelial dystrophy	Yes	Yes
Congenital anterior polar cataract	Yes	Yes
Congenital polar cataract	Yes	Yes
Congenital posterior polar cataract	Yes	Yes
Congenital retinoschisis	Yes	No
Congenital telecanthus	Yes	No
Complete luxation of lens	Yes	Yes
Concussion cataract	Yes	Yes
Contusion of orbital tissues	No	Yes
Dislocation of lens	Yes	Yes
Dog bite of eye region	Yes	Yes
Dropped nucleus	Yes	Yes
Dropped nucleus / retained lens fragments	Yes	Yes
Dropped nucleus / retained lens fragments into posterior chamber	Yes	Yes
Ectopia lentis	Yes	Yes

Ectopia lentis associated with anterior uveal tumour	Yes	Yes
Ectopia lentis associated with homocysteinuria	Yes	Yes
Ectopia lentis associated with hyperlysinaemia	Yes	Yes
Ectopia lentis associated with a hypermature cataract	Yes	Yes
Ectopia lentis associated with a large globe	Yes	Yes
Ectopia lentis associated with Marfan syndrome	Yes	Yes
Ectopia lentis associated with Weill-Marchesani syndrome	Yes	Yes
Ectopia lentis – dislocated cataractous crystalline lens	Yes	Yes
Ectopia lentis – dislocated clear crystalline lens	Yes	Yes
Ectopia lentis et pupillae	Yes	Yes
Ectopia lentis simple (no systemic associations / conditions)	Yes	Yes
Ectopia lentis – subluxed cataractous crystalline lens	Yes	Yes
Ectopia lentis – subluxed clear crystalline lens	Yes	Yes
Ectopic pupil	Yes	No
Elschnig pearls	Yes	Yes
Enophthalmos due to trauma	Yes	Yes
Enucleated eye	Yes	Yes
Eyelid laceration (lower and/or upper lid)	Yes	No
Eye trauma – closed	Yes	Yes
Focal anterior synechiae of iris	Yes	No
Foreign body in anterior chamber	Yes	Yes
Foreign body in anterior segment of eyeball	Yes	Yes
Foreign body in lens	Yes	Yes
Foreign body in sclera	Yes	Yes
Foreign body in vitreous cavity	Yes	Yes
Fracture of medial wall of orbit	Yes	Yes
Full thickness corneal laceration	Yes	Yes
Full thickness eyelid laceration	Yes	Yes
Glaucoma associated with ocular trauma	Yes	Yes
Hyphaema completely filling anterior chamber	Yes	Yes
IOL-capsular bag complex in vitreous cavity	Yes	Yes
IOL in vitreous cavity	Yes	Yes

Infantile cataract Injury due to explosion Yes Yes Injury of conjunctiva Yes Yes Injury of globe of eye Injury of iris and ciliary body Yes Yes Injury of orbit Yes Yes Injury of orbit Yes Yes Injury to vitreous body Yes Yes Intraocular foreign body in vitreous Yes Yes Intraocular foreign body Yes Yes Intraocular foreign for	Infantile, juvenile and presenile cataracts	Yes	Yes
Injury of conjunctiva  Yes Yes Injury of globe of eye Yes Yes Injury of iris and ciliary body Yes Yes Injury of lens Yes Yes Injury of lens Yes Yes Injury of orbit Yes Yes Injury to vitreous body Yes Yes Intraocular foreign body in vitreous Yes Yes Intravitreal foreign body Yes Yes Intravitreal foreign	Infantile cataract	Yes	Yes
Injury of globe of eye Injury of iris and ciliary body Injury of iris and ciliary body Injury of lens Yes Yes Injury of lens Yes Yes Injury of orbit Yes Yes Injury to vitreous body Yes Yes Intraocular foreign body in vitreous Yes Yes Intravitreal foreign body Yes Yes Irvine-gass syndrome Yes Ves Laceration (full thickness) of cornea and sclera Laceration of eye region Yes No Lamellar (partial thickness) laceration of cornea and sclera Leber congenital amaurosis Yes No Lens fragments in Anterior chamber Yes Yes Lenz microphthalmia syndrome No Ves Localised traumatic opacity Yes Yes Magnetic foreign body penetrating eyeball No Yes Mechanical complication of eye orbit prosthesis Yes Microphthalmos ± cyst Yes No capsule present No capsule present Yes Yes Yes Nonmagnetic foreign body penetrating eyeball Yes Yes Yes No capsule present Yes Yes Yes Nonmagnetic foreign body penetrating eyeball Yes Yes Yes Nonperforating wound of cornea	Injury due to explosion	Yes	Yes
Injury of iris and ciliary body  Injury of lens  Injury of lens  Injury of orbit  Yes  Yes  Injury of orbit  Yes  Yes  Injury to vitreous body  Yes  Yes  Intraocular foreign body in vitreous  Yes  Yes  Intravitreal foreign body  Yes  Yes  Irvine-gass syndrome  Yes  Laceration (full thickness) of cornea and sclera  Laceration of eye region  Lamellar (partial thickness) laceration of cornea and sclera  Yes  Yes  Leber congenital amaurosis  Yes  No  Lens fragments in Anterior chamber  Yes  Yes  Lenz microphthalmia syndrome  No  Yes  Luxation of eye  Yes  Magnetic foreign body penetrating eyeball  No  Yes  Mechanical complication of eye orbit prosthesis  Yes  Yes  Microphthalmos ± cyst  Yes  Yes  No  No  Yes  Yes  Yes  No  No  Yes  Yes  Yes  No  Microphthalmos  Yes  Yes  Yes  No  No  Yes  Yes  Yes  Yes  No  Microphthalmos  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  No  Microphthalmos  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  No  Microphthalmos  Yes  Yes  Yes  No  No  No  Yes  Yes  No  No  No  Yes  Yes  No  Microphthalmos  Yes  Yes  Yes  No  No  No  Yes  Yes  No  No  No  No  Yes  Yes  Yes  No  No  No  No  Yes  Yes  Yes  No  No  No  No  Yes  Yes  Yes  No  No  No  No  No  Yes  Yes  No  No  No  No  No  Yes  Yes  No  No  No  No  No  No  No  Yes  Yes  No  No  No  No  No  No  No  No  Yes  Yes  No  No  No  No  No  No  No  No  No  N	Injury of conjunctiva	Yes	Yes
Injury of lens Injury of orbit Yes Yes Injury of orbit Yes Yes Injury to vitreous body Yes Yes Intraocular foreign body in vitreous Yes Yes Intravitreal foreign body Yes Yes Irvine-gass syndrome Yes Ves Laceration (full thickness) of cornea and sclera Yes Ves Laceration of eye region Yes No Lamellar (partial thickness) laceration of cornea and sclera Leber congenital amaurosis Yes No Lens fragments in Anterior chamber Yes Yes Lenz microphthalmia syndrome No Yes Localised traumatic opacity Yes Yes Magnetic foreign body penetrating eyeball No Yes Microcornea Yes Yes Microcornea Yes Yes Microspherophakia Yes Yes No	Injury of globe of eye	Yes	Yes
Injury of orbit Injury to vitreous body Injury to vitreous body Intraocular foreign body in vitreous Intraocular foreign body Intravitreal foreign body Yes Yes Intravitreal foreign body Yes Yes Irvine-gass syndrome Yes Laceration (full thickness) of cornea and sclera Yes Yes Laceration of eye region Lamellar (partial thickness) laceration of cornea and sclera Yes Yes Leber congenital amaurosis Yes No Lens fragments in Anterior chamber Yes Yes Ves Lenz microphthalmia syndrome No Yes Ves Luxation of eye Yes Magnetic foreign body penetrating eyeball No Marfan's syndrome Yes Mechanical complication of eye orbit prosthesis Yes Microphthalmos ± cyst Yes No capsule present No yes Yes Non magnetic foreign body penetrating eyeball Yes Yes Yes Non capsule present Yes Yes Yes Non magnetic foreign body penetrating eyeball Yes Yes Yes Yes Non perforating wound of cornea Yes Yes Yes Yes Yes Yes Non perforating wound of cornea Yes	Injury of iris and ciliary body	Yes	Yes
Injury to vitreous body Intraocular foreign body in vitreous Intraocular foreign body Yes Yes Intravitreal foreign body Yes Yes Irvine-gass syndrome Yes Laceration (full thickness) of cornea and sclera Yes Yes Laceration of eye region Yes No Lamellar (partial thickness) laceration of cornea and sclera Yes Yes Leber congenital amaurosis Yes No Lens fragments in Anterior chamber Yes Yes Lenz microphthalmia syndrome No Yes Localised traumatic opacity Yes Yes Magnetic foreign body penetrating eyeball No Marfan's syndrome Yes Microcornea Yes Microphthalmos ± cyst Microspherophakia Yes Yes No	Injury of lens	Yes	Yes
Intraocular foreign body in vitreous  Intravitreal foreign body  Yes  Yes  Yes  Irvine-gass syndrome  Yes  Laceration (full thickness) of cornea and sclera  Laceration of eye region  Lamellar (partial thickness) laceration of cornea and sclera  Yes  Yes  Leber congenital amaurosis  Yes  No  Lens fragments in Anterior chamber  Yes  Yes  Lenz microphthalmia syndrome  No  Yes  Ves  Luxation of eye  Yes  Magnetic foreign body penetrating eyeball  Mo  Mechanical complication of eye orbit prosthesis  Microcornea  Yes  Yes  Yes  No  Microspherophakia  Yes  Yes  No  No  Yes  Yes  No  No  Yes  Yes  No  Microspherophakia  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  No  Microspherophakia  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  No  No  No  No  Yes  Yes  Yes  Yes  No  No  No  No  Yes  Yes  Yes  Yes  No  No  No  No  No  Yes  Yes  Yes  No  No  No  No  No  No  No  No  No  N	Injury of orbit	Yes	Yes
Intravitreal foreign body Irvine-gass syndrome Irvine-gass syndrome Irvine-gass syndrome Itvine-gass syndrome Itvi	Injury to vitreous body	Yes	Yes
Irvine-gass syndrome  Laceration (full thickness) of cornea and sclera  Laceration of eye region  Lamellar (partial thickness) laceration of cornea and sclera  Leber congenital amaurosis  Leber congenital amaurosis  Lens fragments in Anterior chamber  Yes  Ves  Lenticonus – anterior / posterior  Lenz microphthalmia syndrome  Localised traumatic opacity  Yes  Yes  Magnetic foreign body penetrating eyeball  No  Yes  Mechanical complication of eye orbit prosthesis  Microcornea  Yes  Yes  Yes  Microspherophakia  Yes  Yes  No  Yes  Yes  No  No  Yes  Yes  Yes  No  Yes  Yes  No  Yes  Yes  Yes  No  Yes  Yes  Yes  Yes  Yes  Nonpagnetic foreign body penetrating eyeball  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Y	Intraocular foreign body in vitreous	Yes	Yes
Laceration (full thickness) of cornea and sclera  Laceration of eye region  Lamellar (partial thickness) laceration of cornea and sclera  Leber congenital amaurosis  Leber congenital amaurosis  Lens fragments in Anterior chamber  Lens microphthalmia syndrome  Lenz microphthalmia syndrome  Localised traumatic opacity  Luxation of eye  Magnetic foreign body penetrating eyeball  Mo  Yes  Mechanical complication of eye orbit prosthesis  Microcornea  Microspherophakia  Yes  Yes  Yes  No apsule present  No pes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	Intravitreal foreign body	Yes	Yes
Laceration of eye region  Lamellar (partial thickness) laceration of cornea and sclera  Leber congenital amaurosis  Lens fragments in Anterior chamber  Lens fragments in Anterior chamber  Lenticonus – anterior / posterior  Lenz microphthalmia syndrome  No  Yes  Ves  Localised traumatic opacity  Yes  Yes  Yes  Magnetic foreign body penetrating eyeball  No  Yes  Mechanical complication of eye orbit prosthesis  Microcornea  Yes  Microspherophakia  Yes  Yes  No  No  Yes  No  No  Yes  Yes  No  No  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  No  No  No  No  Yes  Yes  Yes  Yes  No  No  No  No  No  No  No  No  No  N	Irvine-gass syndrome	Yes	Yes
Lamellar (partial thickness) laceration of cornea and sclera  Yes Yes  Leber congenital amaurosis  Yes No  Lens fragments in Anterior chamber  Yes Yes  Lenticonus – anterior / posterior  Yes Yes  Lenz microphthalmia syndrome  No Yes  Localised traumatic opacity  Yes Yes  Luxation of eye  Yes Yes  Magnetic foreign body penetrating eyeball  No Yes  Mechanical complication of eye orbit prosthesis  Yes Yes  Microcornea  Yes Yes  Microphthalmos ± cyst  Microspherophakia  Yes Yes  No capsule present  No yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	Laceration (full thickness) of cornea and sclera	Yes	Yes
Leber congenital amaurosis  Lens fragments in Anterior chamber  Lenticonus – anterior / posterior  Lenz microphthalmia syndrome  Localised traumatic opacity  Luxation of eye  Magnetic foreign body penetrating eyeball  Mo  Mechanical complication of eye orbit prosthesis  Microcornea  Microspherophakia  No  Yes  Yes  No  No  Yes  Microsphthalmos  Yes  Yes  No  No  Yes  No  Microspherophakia  Yes  No  No  Yes  No  No  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  Yes  No  No  No  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	Laceration of eye region	Yes	No
Lens fragments in Anterior chamber  Lenticonus – anterior / posterior  Lenz microphthalmia syndrome  Localised traumatic opacity  Luxation of eye  Magnetic foreign body penetrating eyeball  Mo  Yes  Mechanical complication of eye orbit prosthesis  Microcornea  Microphthalmos ± cyst  Microspherophakia  No  Yes  Yes  Yes  Yes  No capsule present  No cornea  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Y	Lamellar (partial thickness) laceration of cornea and sclera	Yes	Yes
Lenticonus – anterior / posterior  Lenz microphthalmia syndrome  Localised traumatic opacity  Luxation of eye  Magnetic foreign body penetrating eyeball  Mo  Yes  Yes  Yes  Marfan's syndrome  Yes  Mechanical complication of eye orbit prosthesis  Microcornea  Yes  Yes  Yes  Microphthalmos ± cyst  Microspherophakia  Yes  No capsule present  No capsule present  No yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	Leber congenital amaurosis	Yes	No
Lenz microphthalmia syndromeNoYesLocalised traumatic opacityYesYesLuxation of eyeYesYesMagnetic foreign body penetrating eyeballNoYesMarfan's syndromeYesYesMechanical complication of eye orbit prosthesisYesYesMicrocorneaYesYesMicrophthalmos ± cystYesYesMicrospherophakiaYesYesNanophthalmosYesYesNo capsule presentYesYesNonmagnetic foreign body penetrating eyeballYesYesNon perforating wound of corneaYesYes	Lens fragments in Anterior chamber	Yes	Yes
Localised traumatic opacity  Luxation of eye  Magnetic foreign body penetrating eyeball  No  Yes  Marfan's syndrome  Yes  Mechanical complication of eye orbit prosthesis  Microcornea  Yes  Yes  Microphthalmos ± cyst  Microspherophakia  Yes  Yes  Nanophthalmos  Yes  Yes  No capsule present  Non magnetic foreign body penetrating eyeball  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Y	Lenticonus – anterior / posterior	Yes	Yes
Luxation of eye  Magnetic foreign body penetrating eyeball  No  Yes  Marfan's syndrome  Yes  Mechanical complication of eye orbit prosthesis  Yes  Yes  Microcornea  Yes  Yes  Yes  Microphthalmos ± cyst  Microspherophakia  Yes  Yes  Yes  Nanophthalmos  Yes  Yes  Yes  No capsule present  No magnetic foreign body penetrating eyeball  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Y	Lenz microphthalmia syndrome	No	Yes
Magnetic foreign body penetrating eyeballNoYesMarfan's syndromeYesYesMechanical complication of eye orbit prosthesisYesYesMicrocorneaYesYesMicrophthalmos ± cystYesYesMicrospherophakiaYesYesNanophthalmosYesYesNo capsule presentYesYesNonmagnetic foreign body penetrating eyeballYesYesNon perforating wound of corneaYesYes	Localised traumatic opacity	Yes	Yes
Marfan's syndromeYesYesMechanical complication of eye orbit prosthesisYesYesMicrocorneaYesYesMicrophthalmos ± cystYesYesMicrospherophakiaYesYesNanophthalmosYesYesNo capsule presentYesYesNonmagnetic foreign body penetrating eyeballYesYesNon perforating wound of corneaYesYes	Luxation of eye	Yes	Yes
Mechanical complication of eye orbit prosthesis  Microcornea  Yes  Yes  Yes  Microphthalmos ± cyst  Microspherophakia  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	Magnetic foreign body penetrating eyeball	No	Yes
MicrocorneaYesYesMicrophthalmos ± cystYesYesMicrospherophakiaYesYesNanophthalmosYesYesNo capsule presentYesYesNonmagnetic foreign body penetrating eyeballYesYesNon perforating wound of corneaYesYes	Marfan's syndrome	Yes	Yes
Microphthalmos ± cystYesYesMicrospherophakiaYesYesNanophthalmosYesYesNo capsule presentYesYesNonmagnetic foreign body penetrating eyeballYesYesNon perforating wound of corneaYesYes	Mechanical complication of eye orbit prosthesis	Yes	Yes
Microspherophakia Yes Yes  Nanophthalmos Yes Yes  No capsule present Yes Yes  Nonmagnetic foreign body penetrating eyeball Yes Yes  Non perforating wound of cornea Yes Yes	Microcornea	Yes	Yes
NanophthalmosYesYesNo capsule presentYesYesNonmagnetic foreign body penetrating eyeballYesYesNon perforating wound of corneaYesYes	Microphthalmos ± cyst	Yes	Yes
No capsule presentYesYesNonmagnetic foreign body penetrating eyeballYesYesNon perforating wound of corneaYesYes	Microspherophakia	Yes	Yes
Nonmagnetic foreign body penetrating eyeball Yes Yes  Non perforating wound of cornea Yes Yes	Nanophthalmos	Yes	Yes
Non perforating wound of cornea  Yes  Yes	No capsule present	Yes	Yes
	Nonmagnetic foreign body penetrating eyeball	Yes	Yes
Non perforating scleral wound Yes Yes	Non perforating wound of cornea	Yes	Yes
	Non perforating scleral wound	Yes	Yes

Old intraocular nonmagnetic foreign body in anterior chamber	No	Yes
Old intraocular nonmagnetic foreign body in vitreous	No	Yes
Open angle glaucoma (Anterior chamber cleavage syndrome)	No	Yes
Open wound of eyebrow / eyeball / eyelid	No	Yes
Open globe injury	Yes	Yes
Orbital deformity due to trauma	Yes	Yes
Orbital foreign body / lesion	Yes	Yes
Penetrating eye injury	Yes	Yes
Penetrating eye injury (entry wound)	Yes	Yes
Penetrating injury by sharp / unknown object	Yes	Yes
Penetrating injury due to glass	Yes	Yes
Penetrating wound of eye	Yes	Yes
Penetrating wound of orbit ± foreign body	Yes	Yes
Penetration of eyeball with nonmagnetic foreign body	Yes	Yes
Perforating corneoscleral wound	No	Yes
Perforating eye injury (entry and exit wound)	Yes	Yes
Perforating scleral wound	No	Yes
Persistent primary vitreous	Yes	Yes
Peter's anomaly	Yes	Yes
Polar cataract	Yes	Yes
Posterior dislocation of lens	Yes	Yes
Postoperative cataract syndrome	Yes	Yes
Post-traumatic endophthalmitis	No	Yes
Post-traumatic macular / choroid / retina scar	No	Yes
Post-traumatic uveitis	No	Yes
Previous YAG capsulotomy	Yes	Yes
Primary congenital glaucoma	No	Yes
Pseudophakic	Yes	Yes
Pseudophakic – IOL centred	Yes	Yes
Pseudophakic – IOL decentred	Yes	Yes
Pseudophakic – IOL dislocated	Yes	Yes
Pseudophakic – IOL in ciliary sulcus	Yes	Yes

Pseudophakic – IOL in the bag	Yes	Yes
Pseudophakic – IOL partly in the bag	Yes	Yes
Pseudophakic – IOL subluxed	Yes	Yes
Pseudophakic – accommodating IOL	Yes	Yes
Pseudophakic – angle-supported IOL	Yes	Yes
Pseudophakic – multifocal IOL	Yes	Yes
Pseudophakic – multifocal toric IOL	Yes	Yes
Pseudophakic – scleral-fixated IOL	Yes	Yes
Pseudophakic – toric IOL	Yes	Yes
Pseudophakic bullous keratopathy	Yes	Yes
Pseudophakic corneal oedema	Yes	Yes
Pseudophakic macular oedema	Yes	Yes
Pseudophakic retinal detachment	Yes	Yes
Pseudophakic with a sutured posterior chamber IOL	Yes	Yes
Pseudophakic with an anterior chamber IOL	Yes	Yes
Pseudophakic with an iris claw / clip IOL	Yes	Yes
Retained foreign body in the eyelid	No	Yes
Retained magnetic intraocular foreign body	Yes	Yes
Retained non-magnetic intraocular foreign body	Yes	Yes
Retained nuclear material in vitreous	Yes	Yes
Rieger syndrome	Yes	Yes
Rupture of eye with partial loss of intraocular tissue	Yes	Yes
Rupture of globe	Yes	Yes
Rupture of sphincter of pupil	Yes	Yes
Scleral rupture	No	Yes
Sequelae of injury of eye and orbit	No	Yes
Siderosis of eye	Yes	Yes
Spherophakia	No	Yes
Spontaneous dislocation of lens	Yes	Yes
Spontaneous subluxation of lens	Yes	Yes
Subluxed cataractous / clear / crystalline lens	Yes	Yes
Traumatic	Yes	Yes

Traumatic aniridia	Yes	Yes
Traumatic blindness	Yes	Yes
Traumatic blister of eyelid	Yes	Yes
Traumatic cataract	Yes	Yes
Traumatic cicatrisation of the conjunctiva	Yes	Yes
Traumatic corneal abrasion	Yes	No
Traumatic cyclodialysis	Yes	Yes
Traumatic dislocation of lens	Yes	Yes
Traumatic ectopia lentis	Yes	Yes
Traumatic enophthalmos	Yes	Yes
Traumatic enucleation	Yes	Yes
Traumatic glaucoma due to birth trauma	Yes	Yes
Traumatic hyphaema	Yes	Yes
Traumatic injury of abducens nerve	Yes	Yes
Traumatic injury of trochlear nerve	Yes	Yes
Traumatic iridodialysis	Yes	Yes
Traumatic iris atrophy	Yes	Yes
Traumatic iritis	Yes	Yes
Traumatic macular hole	Yes	Yes
Traumatic mydriasis	Yes	Yes
Traumatic optic nerve injury	Yes	Yes
Traumatic optic neuropathy	Yes	Yes
Traumatic / perioperative choroidal detachment	Yes	Yes
Traumatic retraction of the eyelid	Yes	Yes
Traumatic subluxation of lens	Yes	Yes
Traumatic telecanthus	Yes	Yes
Traumatic wound dehiscence	Yes	Yes
Trauma to the head	Yes	No
Type 1 congenital vitreous anomaly	No	Yes
Unstable IOL	Yes	Yes
Vitreocorneal adhesions	No	Yes

# 8 Combined vitreoretinal indication for surgery and pars plana vitrectomy

If any of the following vitreoretinal indications for surgery are recorded as the indication for the surgery and combined with a pars plana vitrectomy during cataract surgery, then the operation is excluded from analysis.

- 1 quadrant of retina detached
- 2 quadrants of retina detached
- 3 quadrants of retina detached
- 4 quadrants of retina detached
- Cataract extraction as part of planned PPV
- Central serous retinopathy associated with retinal detachment
- Chronic rhegmatogenous retinal detachment
- Chronic rhegmatogenous retinal detachment macula off
- Chronic rhegmatogenous retinal detachment macula on
- Epiretinal membrane
- Epiretinal membrane associated with a macular hole
- Epiretinal membrane with macular pseudohole
- Epiretinal membrane with vitreomacular traction
- Idiopathic epiretinal membrane
- Lamellar macular hole
- Lamellar retinal hole
- Macular hole
- Macular hole associated with high myopia
- Pseudo-macular hole
- Removal of silicone oil
- Retinal detachment
- Retinal detachment associated with myopia
- Retinal folds associated with epiretinal membrane
- Retinal hole associated with myopia
- Rhegmatogenous retinal detachment

- Rhegmatogenous retinal detachment macula off
- Rhegmatogenous retinal detachment macula on
- Rhegmatogenous retinal detachment (> 2 previous operations for RD)
- Rhegmatogenous retinal detachment (1 previous operation for RD)
- Rhegmatogenous retinal detachment (2 previous operations for RD)
- Rhegmatogenous retinal detachment (primary)
- Rhegmatogenous retinal detachment associated with myopia
- Stage I macular hole
- Stage II macular hole
- Stage III macular hole
- Stage IV macular hole
- Unsuccessfully treated retinal detachment
- Untreated retinal break caused failed retinal detachment surgery
- Vitreomacular adhesion
- Vitreomacular traction
- Vitreomacular traction with incomplete posterior vitreous detachment

## 9 Ineligible operative procedures

If any of the operative procedures listed below were performed during cataract surgery then the operation is excluded from analysis. Some terms have been condensed as there are multiple methods or sub-types.

- AB-interno canaloplasty
- Amniotic membrane transplant to cornea
- Anterior chamber tap
- Anterior lamellar keratoplasty
- Anterior segment trauma repair
- Argon laser peripheral iridoplasty
- Argon laser trabeculoplasty
- Artificial iris
- Biopsy of lesion of cornea / conjunctiva /eyebrow / iris / sclera / skin
- Biopsy of retina / choroid external approach
- Biopsy of retina / choroid internal approach
- Bleb needling
- Bleb resuture / conjunctival suture
- Bleb revision
- Botulinum toxin to extraocular muscles
- Capsulectomy (when combined with PPV)
- Cautery of lesion of cornea / conjunctiva / sclera / skin
- Chelation of cornea
- Cleaning of corneal flap
- Conductive keratoplasty
- Conjunctiva symblepharon repair
- Conjunctiva tumour excision
- Conjunctival stem cell transplant
- Corneal collagen cross-linking
- Corneal epithelial debridement
- Corneal gluing
- Corneal limbal cell transplant

- Cryotherapy to ciliary body
- Cryotherapy to lesion of conjunctiva / cornea / retina
- Cyclodialysis surgery
- Cyclodiode
- Debridement of lesion of cornea
- Deep lamellar keratoplasty
- Deep sclerectomy with spacer
- Deep sclerectomy without spacer
- Descemet stripping automated endothelial keratoplasty
- Destruction of lesion of cornea
- Division of adhesions of conjunctiva
- Drainage of choroidal effusion
- Drainage of subretinal fluid through retina
- Drainage of supra-choroidal haemorrhage
- Ectropion repair (by any method)
- Endocyclophotocoagulation
- Endoresection of choroidal / retinal lesion
- Entropion repair other (by any method)
- Entropion repair sutures
- Epi-LASIK
- Epimacular brachytherapy
- Epiretinal membrane peel
- Excision of lesion of canthus
- Excision of lesion of eyelid / iris / sclera
- Extracapsular cataract extraction ± IOL
- Excision of skin lesion / conjunctiva excision
- Exploration of cornea
- Eyelid excisional / miscellaneous biopsy
- Eyelid miscellaneous excisional biopsy
- Eyelid scar revision
- Eyelid surgery miscellaneous (other)
- Eyelid trauma full thickness laceration repair

- Facial palsy repair tarsorrhaphy
- Fibrovascular membrane delamination
- Fibrovascular membrane segmentation
- Fixation of iris
- Flap lift replacement
- Free conjunctival autograft
- Glaucoma examination under anaesthesia
- Gonioscopy assisted transluminal trabeculectomy
- Goniosynaechiolysis
- Goniotomy
- Harvest fascia lata
- Implantation of intravitreal device
- Incisional keratectomy
- Insertion of corneal prosthesis / refractive corneal prosthesis
- Insertion of cypass implant
- Insertion of ex-press implant R-50
- Insertion of hydrus microstent
- Insertion of posterior segment sustained release device
- Insertion of preserflo microshunt
- Insertion of radioactive ruthenium plaque
- Insertion of tumour markers
- Insertion of Xen implant
- Intravitreal injection of tPA/Alteplase
- Internal limiting membrane peel
- Internal tamponade Air
- Internal tamponade C2F6 gas
- Internal tamponade C3F8 gas
- Internal tamponade Heavy liquid
- Internal tamponade Heavy silicone oil (Densiron)
- Internal tamponade SF6 gas
- Internal tamponade Silicone oil
- Intracapsular cataract extraction ± IOL

- IOL reposition
- Iridocyclectomy
- iStent trabecular micro-bypass
- Lacrimal bypass surgery (by any method)
- Lamellar keratoplasty
- Laser Assisted in Situ Keratomileusis (LASIK)
- Laser Assisted Sub-Epithelial Keratectomy (LASEK)
- Laser destruction of skin lesion
- Laser peripheral iridotomy
- Laser refractive keratectomy
- Laser suture following glaucoma surgery
- Laser thermal keratoplasty
- Limited macular translocation
- Macular laser
- Macular translocation 360 degrees
- Magnetic extraction of cornea / lens FB
- Micropulse diode laser trabeculoplasty
- Nd / YAG goniopuncture
- Orbital sclerotherapy
- Other cornea operation
- Other destruction of ciliary body
- Other specified excision of iris
- Other specified operation on ciliary body
- Other specified operation on iris
- Overlay scleroplasty
- Panretinal photocoagulation
- Panretinal photocoagulation endolaser
- Panretinal photocoagulation indirect laser
- Penetrating keratoplasty
- Phakic IOL
- Photodynamic therapy
- Photorefractive keratectomy (PRK)

- Phototherapeutic keratectomy
- Posterior capsule capsulorhexis
- Posterior capsulotomy (intended)
- Posterior endothelial keratoplasty
- Posterior segment globe repair
- Proliferative vitreoretinopathy (PVR) membrane peel
- Pterygium excision
- Radial optic neurotomy
- Recession of medial rectus muscle and resection of lateral rectus muscle of eye
- Removal of corneal rust ring / corneal foreign body
- Removal of foreign body from conjunctiva / cornea / eyelid / iris / lens
- Removal of intraocular foreign body
- Removal of radioactive ruthenium plaque
- Removal of releasable suture following glaucoma surgery
- Removal of silicone oil
- Removal of stent from Baerveldt tube
- Removal of tamponading agent
- Repair of iridodialysis
- Retina vascular sheathotomy
- Retinal pigment epithelium translocation
- Retinectomy
- Retinopexy 360 degree laser
- Retinopexy cryotherapy
- Retinopexy endolaser
- Retinopexy indirect laser
- Retinopexy other
- Retinopexy trans scleral diode laser
- Retinopexy slit lamp
- Retinotomy drainage / relieving
- Retrobulbar injection into orbit
- Retropunctal cautery
- Revision of aqueous shunt to extraocular reservoir

- Revision of trabeculectomy
- Revision of tube implant
- Secondary IOL
- Sclera expansion / imbrication / graft / suture / repair
- Scleral buckle circumferential
- Scleral buckle encircling
- Scleral buckle radial
- Scleral buckle revision / replacement
- Sector laser
- Selective laser trabeculoplasty
- Squint surgery / adjustable squint surgery / re-do squint surgery
- Stereotactic radiotherapy
- Strabismus & Paediatric examination under anaesthesia
- Subfoveal choroidal neovascularisation drugs band 1
- Subretinal injection (Avastin / tPA / Alteplase)
- Subretinal membrane / band removal
- Suprachoroidal injection
- Superficial keratectomy
- Surgical anterior capsulotomy
- Surgical iridoplasty
- Suture of conjunctiva
- Tarsorrhaphy Central / lateral / medial / revision
- Tattooing of cornea
- Temporal artery bypass
- Therapeutic contact lens / placement on to cornea
- Trabeculectomy
- Trabeculotomy
- Trabectome
- Transpupillary thermotherapy
- Trans-scleral retinal diode laser
- Trephine of cornea
- Tube implant

- Unspecified excision of iris
- Unspecified operation on iris
- Viscocanalostomy
- Viscogonioplasty
- Vitreoretinal examination under anaesthesia
- Vitreous biopsy
- YAG anterior capsulotomy
- YAG posterior capsulotomy

If "Examination under anaesthesia" is recorded for an operation conducted under general anaesthesia then this operation would be deemed ineligible for analysis.

When either "removal of lens fragments" or "removal of lens nucleus" are recorded during cataract surgery, the operation is excluded when not combined with a vitrectomy (anterior, pars plana or sponge and scissors). When combined with a vitrectomy, the operation is included and posterior capsular rupture assumed to have occurred.