



National Ophthalmology Database Audit

Year 4 Annual Report – The Third Prospective Report
of the National Ophthalmology Database Audit

NHS Funded Cataract Surgery:
01 September 2017 to 31 August 2018

Full Comprehensive Report
2019

[The Royal College of Ophthalmologists](#) (RCOphth) is the professional body for eye doctors, who are medically qualified and have undergone or are undergoing specialist training in the treatment and management of eye disease, including surgery. As an independent charity, we pride ourselves on providing impartial and clinically based evidence, putting patient care and safety at the heart of everything we do. Ophthalmologists are at the forefront of eye health services because of their extensive training and experience. The Royal College of Ophthalmologists received its Royal Charter in 1988 and has a membership of over 4,000 surgeons of all grades. We are not a regulatory body, but we work collaboratively with government, health and charity organisations to recommend and support improvements in the coordination and management of eye care both nationally and regionally.



[Healthcare Quality Improvement Partnership](#) (HQIP) is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement in patient outcomes, and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual projects, other devolved administrations and crown dependencies. www.hqip.org.uk/national-programmes



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Foreword

*“The time has come for everyone in the NHS to take clinical audit very seriously”
Dame Deirdre Hine and Sir Michael Rawlins 2002*

The need for clinical audit in the NHS was dramatically illustrated by the Kennedy inquiry into children’s heart surgery in Bristol. Following its publication in 2001, it became no longer acceptable, if it ever was, for doctors to presume that they were delivering high quality care. The Royal College of Ophthalmologists’ National Ophthalmology Database Audit (RCOphth NOD) demonstrates how systematic, repeated national audits can be a driver for change both at an individual surgeon and department level, leading to improved outcomes and enhanced patient safety.

This third prospective RCOphth NOD National Cataract Audit report, reviewed data from 217,875 cataract operations performed at 83 NHS Trusts in England and Wales and 18 independent treatment centres. No poorly performing hospitals or surgeons were identified. There was a further fall in the unadjusted posterior capsule rupture rate to 1.2%, down from 1.4% last year and 2.0% since data was first collected in 2010. This represents a major reduction in the number of people living with the consequences of cataract surgery complications, and a significant cost saving to the NHS.

The RCOphth NOD National Cataract Audit has now established itself as an essential tool for monitoring the quality of work of cataract surgeons. Previously published feasibility studies have shown that the scope of the RCOphth NOD Audit could be expanded to include other eye diseases such as age-related macular degeneration, retinal detachment and glaucoma. An NHS ophthalmology service underpinned by such an audit would give patients great confidence in their local eye department. It would also provide huge opportunities for clinical research.

For the last five years the RCOphth NOD Audit has been commissioned by the Healthcare Quality Improvement Partnership (HQIP) and funded by NHS England and the Welsh Government. This high-level support has greatly enhanced the scope and quality of the audit. Going forward, every effort will be made to attain financial sustainability of the NOD and the continuation of the delivery of benefits to people with eye diseases and savings to the NHS.

On behalf of College members, I would like to thank Professor John Sparrow and his team, Kathy Evans, Beth Barnes, Paul Donachie, Martina Olaitan, Lynne Sander and Peter Scanlon for the huge amount of work they have put into the production of this report.



Mr Michael Burdon

President, The Royal College of Ophthalmologists

Executive Summary

Background

Cataract surgery remains the most frequently undertaken NHS surgical procedure with approximately 414,000 cataract operations undertaken in England and 20,000 in Wales during 2017-2018. The Health Quality Improvement Partnership (HQIP) commissioned The Royal College of Ophthalmologists' National Ophthalmology Database (RCOphth NOD) to conduct the National Cataract Audit, in order to report on all NHS funded cataract surgery in England and Wales. The annual cost of cataract surgery to the NHS is estimated at around £450 million.

Aims of the audit

The current report documents prospectively collected cataract surgery data and reports results for named NHS centres. These include operations performed and recorded by all surgeons of all grades within centres. Outcomes for named consultant surgeons will be separately published on the NHS Choices and the RCOphth NOD Audit websites through the Clinical Outcomes Publication (COP) programme.

Audit measures

Two primary indicators of surgical quality are audited. These are, firstly, a complication that happens during surgery when the capsule that holds the lens is broken (the index surgical intraoperative complication of significant breach of the lens-zonule barrier through rupture of the posterior lens capsule or vitreous prolapse or both, abbreviated as PCR), and secondly Visual Acuity (VA) Loss (doubling or worse of the visual angle) related to surgery. These outcomes are presented as risk adjusted rates for centres, supported by relevant contextual information including surgical volumes, data completeness, case complexity, access to surgery and deprivation. The overall rates of 1.1% for PCR and 0.9% for VA Loss are based on the average rates for consultant surgeons. The risk indicators for

each of these adverse events were derived from earlier data collections. Case complexity is known to be an important determinant of outcome and a case complexity index is included to document the complexity of surgery being recorded. The vast majority of data were obtained through extraction from Electronic Medical Record (EMR) systems, with a small number of centres choosing to submit data from their pre-existing audit databases.

Posterior Capsule Rupture - PCR

As an adverse operative event PCR is relevant because it results in a significantly higher risk of harm to the eye and may impact recovery of vision. For example, there is an approximately 40-fold higher risk of a retinal detachment occurring following cataract surgery if PCR occurred. Retinal surgery, to correct the detachment, imposes additional risks, morbidity and cost.

Visual Acuity Loss – VA Loss

Since VA Loss from surgery is the opposite of the intended effect, these key primary outcomes together capture relevant safety elements of surgical quality. Determination of VA Loss depends on availability of VA measurements at both pre- and postoperative time points. Rates of missing VA data are thus important and are reported for centres.

The audit is intended to quality assure NHS cataract surgical services for patients whose vision is adversely affected by cataract to the point where they seek surgical intervention. Should performance fall short of what can reasonably be expected by NHS patients this will be highlighted. In addition, the audit serves as a powerful driver of quality improvement with year on year reductions in complication rates as evidenced in our series of annual reports available at www.nodaudit.org.uk

Results

Since the original proof of concept of a national cataract audit in 2010, there has been a 38% reduction in PCR complications in cataract surgery, (Table 1, page 7) equating to approximately 3,400 fewer complications annually across the NHS.

Participation

Included in this third prospective report are **operations undertaken between 01 September 2017 and 31 August 2018**. Reported operations for the current period were performed in 79 English and four Welsh NHS Trusts.



Approximately 70% of the 119 eligible NHS trusts in England and Wales are thus represented. In addition, three independent providers of NHS funded cataract surgery have supplied data for 18 individual sites. The audit received data

for 232,083 cataract operations which equates to approximately 53% of operations performed in England and Wales during the audit period. The lower overall percentage of operations compared with the percentage of trusts is mainly due to recent joiners reporting partial years.

Around 6% of cataract operations were excluded for a variety of reasons such as being done for



217,875

indications other than visual improvement or being combined with other significant intraocular surgery; **this left 217,875 eligible cataract operations available for analysis.**

Data Quality

Data completeness was excellent (around 100%) for the PCR outcome as this is a compulsory operative field in the EMRs.

An eligible preoperative distance VA was recorded for 91.9% of eyes and a postoperative VA for 76.0% of eyes; 72.1% of eyes had both a preoperative and a postoperative VA

measurement. There was significant variation between centres for completeness of VA data, reflecting variations in EMR use and patient pathways.

Findings

Overall, the audit findings are favourable indicating high quality surgery is being delivered to NHS patients. Specifically, among the contributors, no outlying centres or surgeons have been identified.

For all surgeons, 1.2% of operations were affected by PCR, slightly above the current consultant only based average rate of 1.1% used for risk adjustment.

A 'good' postoperative VA of 0.30 LogMAR (=6/12, required to drive) or better was achieved in 90.6% of eyes overall, 95.8% of eyes with no ocular co-pathology and 83.8% of eyes with a recorded co-pathology. The median preoperative VA was 0.50 LogMAR units (6/19 Snellen Equivalent); the median postoperative VA was 0.10 LogMAR units (6/7.5 Snellen); and the median change in VA was a 0.36 LogMAR gain.

Overall the VA Loss rate was 0.7%, close to the 0.9% rate used for risk adjustment and approximately 37% lower than in 2010. The samples used for the VA Loss results are smaller than those used for the PCR results due to missing presenting (pre-) and / or postoperative VA measurements as well as a shorter time period of 10 months to cater for postoperative recovery and VA reporting.

Conclusions

The findings are reassuring for the 101 participating centres. Whilst the audit can report on encouragingly large numbers of procedures, there remain a minority of centres that have not yet joined the audit (Appendix 3, page 46). Until all centres join there will remain uncertainty about outcomes overall. Many of the non-contributing centres have, however, indicated they recognise the value, quality assurance and quality improvement opportunities afforded by participation in the audit and wish to join in future audit cycles.

Table 1: Audit estimates for different years where each year represents the time period of 01 September to 31 August

	Prior to the prospective audit period					Prospective audit period		
	2010	2011	2012	2013	2014 (Legacy)	2015 (Year 1)	2016 (Year 2)	2017 (Year 3)
Number of centres	31	33	33	33	36	51	82	101
Number of eligible operations	60,449	73,777	78,959	84,360	85,877	122,757	182,758	217,875
Case ascertainment (%)*	–	–	–	–	–	84.4	85.7	84.5
Unadjusted PCR rate (%)	2.0	1.8	1.7	1.5	1.6	1.4	1.4	1.2
The percentage with valid preoperative VA data	95.0	94.8	94.6	94.5	94.6	92.1	91.6	91.9
Number of operations for postoperative VA results	50,008	60,944	65,406	69,973	71,272	96,974	148,246	177,380
The percentage with valid postoperative VA data	68.7	70.5	73.2	75.7	76.6	75.0	75.7	76.0
The percentage with change in VA data	65.5	67.3	69.9	72.1	73.2	71.6	71.7	72.0
Unadjusted VA loss rate (%)	1.0	1.0	1.0	0.9	0.8	0.7	0.7	0.7

Over the time period above, not all centres have contributed data in consecutive data extractions and some centres have merged. The first 5 years include the early EMR adopting centres, while the prospective audit years will include centres initiating data collection and not always submitting data for a complete year. *The estimate of the proportion of cases submitted to the audit is derived from the number of completed cataract operations supplied to NHS Digital or NWIS for the audit period. This estimation uses a pro rata calculation for a centre’s denominator where the proportion of time during the audit cycle that a centre had been recording cataract operations was multiplied by the number of cataract operations supplied to NHS Digital or NWIS. The numerator was the number of operations a centre had supplied to the audit. Centres that had more operations submitted to the national audit than in the NHS Digital or NWIS data were all assumed to have a complete submission rate as the actual rate was not possible to estimate. The case ascertainment rates for the retrospective audit years have not been estimated as the audit was not receiving the NHS Digital or NWIS data for these years.

Recommendations

1. Recommendations for Patients



1.1 Patients, carers and those with an interest in cataract surgery are encouraged to access information about the quality of cataract surgery and their local services, and can view information online on the [National Ophthalmology Database Audit website](#), the [HQIP website](#) and the [NHS Choices website](#) (page 41, Summary Key Point 2, 5)

1.2 Patients should discuss and understand the risks and potential outcomes of any eye surgery with their surgeon

1.3 Patients interested in finding out more about cataract surgery, should access information online from their hospital trusts and health boards, as well as from charity organisations such as [Royal National Institute of Blind People](#) (RNIB)

2. Recommendations for Providers of cataract surgery



2.1 All providers of NHS cataract surgery should submit data to the audit to publicly demonstrate their commitment to high quality care and good professional practice through participation. Reviewing information and actioning requests sent by the audit provider will allow for ongoing participation in the audit (page 41, Summary Key Point 1)

2.2 Providers should submit complete data to ensure all relevant risk factors required to give credit for case complexity can be taken into account ([UK Minimum Cataract Dataset for National Audit](#)) (page 41, Summary Key Point 8)

2.3 In line with the NHS digital agenda, providers should use electronic data collection to improve data completeness and utilise EMR audit tools for continuous real time monitoring of results for early detection

and correction of possible issues (page 41, Summary Key Point 9)

2.4 Providers should review patient pathways to maximise the recording of both preoperative and postoperative VA data for every operation (page 41, Summary Key Point 7)

2.5 Providers should use the audit for quality improvement by comparing their results against other surgery providers and their past performance to identify and act on specific areas that may need improvement (page 41, Summary Key Point 5)

2.6 Providers should consider including Patient Reported Outcome Measures (PROMs) before and after surgery to quantify and validate patient benefit from surgery, as advised in the 2019 [NICE Quality standard for serious eye disorders \(QS180\)](#)

3. Recommendations for Commissioners



3.1 Service specification contracts should require quality assurance and improvement based on national audit outcomes and the 2017 [NICE cataract surgery guideline \(NG77\)](#) for management of cataracts in adults (page 41, Summary Key Point 4)

3.2 Commissioners should establish quality focused service specification contracts with providers which include submission of full data to the RCOphth NOD Audit, including pre- and postoperative VA for visual outcomes reporting (pages 41, Summary Key Points 1, 2, 6, 7, 8)

4. Recommendations for the Regulators



4.1 Regulators should expect NHS services to participate in national audits, with audit results made available to them when inspecting NHS organisations which either commission or deliver cataract surgery services (page 41, Summary Key Points 1, 6)

4.2 Regulators should ensure that all providers of care are positioned to provide quality assurance regardless of whether they are traditional NHS centres or independent providers (page 41, Summary Key Point 1)

1. Introduction

A cataract is a clouding of the lens in the eye. The lens sits just behind the iris, the coloured part of the eye. Normally the lens is clear and helps to focus light entering the eye. Developing cataracts causes sight to become cloudy, misty and unclear. Cataracts can affect one or more eyes, and usually do affect both eyes. They are treated by surgery, during which the cloudy lens is removed and replaced by an artificial lens. The artificial lens is known as an intraocular lens (IOL). There are no medicines or drops that can successfully treat cataracts; surgery is the only way to treat them. Information for patients and the public on cataracts is available on [The Royal College of Ophthalmologists'](#) website.

In the 2017-2018 NHS year, around 414,000 NHS cataract surgery procedures were undertaken in England and 20,000 in Wales. Cataract surgery is the most frequently performed surgical procedure in the UK. A widely accepted indicator of surgical quality is the frequency of significant breach of the lens-zonule barrier through posterior capsule rupture with or without vitreous prolapse, or zonule rupture with vitreous prolapse, events abbreviated here as PCR.

PCR is emphasised in the [NICE cataract surgery guideline \(NG77\)](#) in the context of surgical risk and is similarly used as a clinical outcome (adverse event) by the [International Consortium for Health Outcome Measurement \(ICHOM\)](#). This operative complication arises on average in approximately one operation in 80, but the risk of this event varies by as much as fifty-fold depending on preoperative risk factors associated with the patient (e.g. age) and their eye (e.g. how advanced the cataract is).

PCR is relevant as an adverse operative event because it results in a significantly higher risk of harm to the eye and may impact recovery of vision. For example, there is an approximately forty-fold higher risk of a retinal detachment occurring following cataract surgery if PCR occurred, and retinal surgery imposes additional risks, morbidity and cost. Importantly, when PCR occurs there is a six-fold higher chance of loss of vision from pre- to postoperatively in the eye undergoing surgery.

Some weeks following cataract surgery, most patients attend their community optometrist (high street optician) for updating of their glasses prescription, and at this point the final 'best-corrected' visual acuity is established. The results of this follow-up episode are currently inconsistently communicated back to the hospital to allow a definitive measure of visual acuity (VA) benefit from surgery. A web-based data return tool has been developed and initially offered as a free EMR software enhancement to audit centres to encourage and facilitate these data returns. Since VA Loss from surgery is the opposite of the intended effect, these key primary outcomes together capture relevant safety elements of surgical quality. VA Loss is emphasised in the [NICE cataract surgery guideline \(NG77\)](#) in the context of surgical risk.

Providing risk adjusted results for centres and surgeons enables them to benchmark their own performance against their peers and acts as a prompt to reviewing practice where outcomes are less good. Our experience indicates that showing individual surgeons their performance stimulates them to be more mindful of quality generally and to improve performance where needed.

Since safety is a key domain for the NHS, embodied in the oft quoted phrase from the Hippocratic Oath "First, do no harm", the audit is primarily focused on two chosen safety metrics. The EMR audit tools provided through the audit allow for real time local tracking of outcomes by surgeons and centres. This empowers them to monitor their results locally and to detect adverse signals early with a view to minimising patient harm through prompt action. The report includes additional contextual information which provides centres, surgeons and the wider NHS with secondary outcomes in terms of case complexity, access to surgery by centre and deprivation, and data completeness.

In the RCOphth NOD prospective cataract audit reports we show the case complexity adjusted rates of PCR and monocular visual acuity (VA) Loss for named centres (including all surgeons). On the RCOphth NOD website we present case complexity adjusted rates of PCR and VA Loss for participating centres and surgeons, and on the NHS Choices website will be risk adjusted outcomes for named consultant surgeons for both PCR and VA Loss. Incomplete data will be highlighted and where <40% of outcome data are available for a particular centre (e.g. for VA Loss) the rate will not be reported as deemed too unreliable.

2. Audit Framework

The National Cataract Audit data in this report covers all adult phacoemulsification cataract surgical operations recorded on:

- Medisoft EMR in use at 86 contributing centres
- OpenEyes EMR in use at three centres
- Medisoft and OpenEyes EMR used in one centre
- Epic patient record system in one centre
- In-house cataract data collection systems used in ten contributing centres

For the PCR outcome, the audit included all reported cataract operations performed in the period between 01 September 2017 and 31 August 2018. For the risk adjusted VA Loss outcome and postoperative complications and visual acuity results the reported period was between 01 September 2017 and 30 June 2018 in order to allow time for postoperative data to become available following recovery from surgery.

Excluded were:

- Cataract operations not done by phacoemulsification
- Operations done as combined procedures along with another significant intraocular procedure (e.g. a trabeculectomy or a pars plana vitrectomy combined with other vitreoretinal procedures)
- Operations done on eyes previously damaged by ocular trauma
- Operations done on eyes with significant congenital or developmental abnormalities
- Operations on individuals aged <18 years

Centres are identified by name and number in tables and graphical presentations.

3. Aims

This audit reports risk-adjusted rates for two primary patient safety outcomes: PCR and VA Loss in cataract surgery. PCR will have high levels of completeness for all participating centres as recording of the absence or presence of specified operative complications is mandatory in ophthalmology EMR systems. The preoperative risk indicator and follow up VA data are, however, expected to be less complete because of variations in patient pathways and use of the EMR in different settings.

The quality improvement aims of this report include:

- Reporting of the intraoperative risk adjusted complication rates, emphasising the need for careful risk profiling of cases in advance of surgery to anticipate and minimise avoidable surgical complications
- Reporting the rates of VA Loss, highlighting potentially avoidable visual harm where unwarranted variation is observed

There are several secondary aims developed throughout the life of the audit, for example the contextual information includes: case complexity metrics, rates of recorded valid VA data and access (preoperative VA) by centre and overall by deprivation.

4. NHS Trust / Health Board and Surgeon Participation

The audit brief is to include all NHS funded cataract surgery in England and Wales where Caldicott Guardians and Clinical Leads have given permission for inclusion of their data. In this report, the majority of centres were in England (97) with four centres in Wales. This report includes 91 currently EMR enabled centres and ten centres using an in-house data collection system. Of the 119 eligible NHS trusts, 83 (69.7%) NHS trusts are represented, plus data from three independent sector treatment providers of NHS funded services (18 sites). Results for 101 centres are reported.

5. Methodology

5.1 Context of the data collection

The audit data derive from routine data collection in NHS ophthalmology departments with no additional data collection effort required by NHS staff. Our approach aligns directly with, and powerfully supports, the NHS digital agenda and has catalysed a major shift towards electronic working in cataract services. Since the start of the HQIP commissioned period in 2014 the NOD Audit has driven an increase in the number of centres working electronically from around 30 to >100. Complications data depend on surgeons recording these faithfully. Unlike mortality figures there is no external validation of the reported complications, although cross-checks are undertaken within the extracted data.

The EMR requires the surgeon recording the operation note to specifically indicate a ‘Yes / No’ response to whether a surgical complication occurred. At all centres the EMR record (or its printed copy for the paper notes) constitutes the medicolegal document of the patient’s operation record.

Data completeness for other aspects of care varies between centres for several reasons. Some centres only use the electronic data collection system in theatre which limits data completeness for items normally collected in the outpatient department at pre- and postoperative visits. Accurate follow up data on VA and refraction mostly depend on patients attending their optometrist for updating of spectacles following surgery and for this information to then be returned to the hospital EMR system. Although some centres have good paper-based systems in place for optometrists to return postoperative VA and refraction measurements, and for staff at the hospital to enter the data electronically, it is to be expected that this VA outcome will be incomplete in many centres. The NOD Audit team has taken steps to enhance returns from optometrists through encouraging proactive local engagement with community optometrists, an active programme of engagement with national optometric professional bodies, and provision of a web-based data return tool for the National Cataract Audit.

5.2 Case ascertainment

An estimate of the percentage of cataract operations submitted to the audit is based on the number reported centrally to NHS Digital or NHS Wales Informatics Service (NWIS). This is calculated pro rata for recent joiners, as reported in Appendix 7 (page 56).

As the National Cataract Audit has exclusion criteria, the estimate of case ascertainment is calculated using the number of operations submitted to the audit before the exclusion criteria are applied.

5.3 Data quality and completeness

Among the advantages of EMR data collection are compulsory collection of key data items (e.g. operative complications) and automatic range checking of variables (e.g. axial length) at the time of data entry. This improves data completeness and accuracy. In addition, the richness of EMR data provides a more complete picture of the patient and their state of health making it possible to infer important information through cross-checking.

Completeness of preoperative VA and postoperative VA outcome remain variable and an area for improvement in many centres. The audit tools include a web-based data return tool for use by community optometrists which is intended to facilitate return of postoperative data. This works best when optometrists are commissioned to undertake postoperative follow-up in the community as contracting can make payment contingent upon data having been received by the surgical centre.

5.4 Small numbers policy

Centres with <50 operations have not been included in this report and the Clinical Outcomes Publication (COP) programme report for individual surgeon results will likewise not report results for surgeons who have undertaken <50 procedures.

5.5 Outliers policy

The audit outliers' policy has been developed directly from the HQIP outliers' policy and is available on the [RCOphth NOD Audit](#) website. An outlying centre or surgeon is identified where the risk-adjusted adverse event rate is above the national threshold set by the mean rate plus approximately three Standard Deviations (3SD).

5.6 Limitations of the data

The RCOphth NOD includes data for cataract surgery to the first treated eye, the second treated eye, and in some cases immediate simultaneous bilateral surgery; but for some patients, the record for the first treated eye may be missing. This may arise, for example, if the first eye operation was performed prior to the centre adopting an electronic data collection system, or the first treated eye operation could have been performed in a different centre. At present the RCOphth NOD cannot link patients' data if it has been collected at different centres.

Patient's age, and the calculation of the Index of Multiple Deprivation (IMD) data rely on data entered directly onto the hospital's Patient Administration System (PAS), which links into EMR systems. Hence, if this data is not recorded in the PAS it is not present in the data extract for EMR enabled centres with PAS connections. Centres using in-house databases can supply this data if they match their clinical data to the national indices before submitting to the audit. Deprivation data was available for most operations recorded on the Medisoft EMR system and three centres using in-house databases, but not for the other sources of data. For future cycles of the national cataract audit, the OpenEyes EMR is anticipated to include deprivation data calculated during extraction, and the audit has provided information to non-EMR centres on how they can submit deprivation data without transferring the patients' postcode.

6. Data Extraction, Cleaning and Statistical Methods

Centre participation was affirmed by agreement from the Trust Caldicott Guardian and Clinical Lead for Ophthalmology. There are 13 sources of data included in the prospective third year of the National Cataract Audit, 86 centres used the Medisoft EMR (Medisoft Ophthalmology www.medisoft.co.uk, three centres used the OpenEyes EMR www.openeyes.org.uk, one very large London NHS Trust used both the Medisoft and the OpenEyes EMR systems, one centre used the Epic patient record system www.epic.com, and ten centres used in-house data collection systems. Supplementary extractions/submissions were undertaken as necessary. Full details regarding eligibility and analysis criteria can be found on the RCOphth NOD Audit website following registration www.nodaudit.org.uk

7. Definitions

7.1 Dataset

A minimum cataract dataset has been defined for purposes of the NOD Audit www.nodaudit.org.uk. These variables include those required for case complexity adjustment of outcomes.

7.2 Surgeon grade

The grade of surgeon was categorised as: consultant surgeons, career grade non-consultant surgeons (associate specialists, staff grade and trust doctors), more experienced trainee surgeons (fellows, registrars, speciality registrars: years 3 – 7 and specialty trainees: years 3 – 7) and less experienced trainee surgeons (senior house officers, specialty registrars: years 1 - 2, specialty trainees: years 1 - 2 and foundation doctors: years 1 - 2).

7.3 Posterior Capsule Rupture (PCR)

Posterior capsular rupture (PCR) is defined for the purposes of the National Audit as “*posterior capsule rupture with or without vitreous prolapse or zonule rupture with vitreous prolapse*” and abbreviated as PCR. It should be noted that the definition excludes zonule dehiscence where no vitreous prolapse has occurred. PCR is thus intended to capture significant breach of the lens-zonule barrier. Detailed criteria for case definitions can be found in Appendix 5 (page 52) and on the NOD Audit website www.nodaudit.org.uk

7.4 Visual Acuity (VA)

VA definitions used were designed to maximise the usefulness of the available data with specified ‘time windows’ for pre- and postoperative measurements and criteria for preferred choices in terms of corrected VA, unaided VA and pinhole corrected VA. The detailed criteria can be found in Appendix 5 (page 52) and on the NOD Audit website www.nodaudit.org.uk along with interpretations for levels of VA. The percentage of eyes with VA data for each centre and different time windows are given in Appendix 12 (page 82).

7.5 Mixed effects modelling of PCR and Visual Acuity Loss

The categorisation of each covariate under investigation in the PCR and VA Loss mixed effects logistic regression models are detailed for registered users on The RCOphth NOD Audit website www.nodaudit.org.uk, with operations performed in the four year period 2011-12 to 2014-15 NHS years used to develop the current models.

The risk adjustment model equations for PCR and Visual Acuity Loss respectively were applied to the audit data for the respective results in this report where the case mix adjusted graphs have 99.8% error lines displayed which are created from consultant-based means of 1.1% for PCR and 0.9% for Visual Acuity Loss. These percentages reflect the unadjusted adverse event rates for consultants performing surgery.

They are slightly lower than the overall rate for all surgeons and have been used because the consultant results appear in the public domain. As such it would be inappropriate for the average consultant rate to be artificially inflated to reflect the slightly higher overall average rate. The audit stipulates that at least 40% of operations with both pre- and postoperative VA data are required to report a result for VA Loss. On the centre level case mix adjusted funnel plots, data for all surgeons is included (i.e. including trainee surgeons whose results are risk adjusted accordingly).

7.6 Case complexity index

Based on the risk prediction models a case complexity index has been provided for each centre. This is taken as the overall predicted probability of an adverse outcome based on the reported case complexity for the centre. Separate complexity indices have been provided for PCR and VA Loss.

8. Results

8.1 Case ascertainment

In total, 232,083 operations were submitted to the audit by 102 centres, of which 230,632 (99.4%) were performed using phacoemulsification. The estimate of case ascertainment was made by comparison with data from NHS Digital and NWIS. Case ascertainment was not calculable for two centres. One centre was excluded from the cataract audit analysis due to supplying <50 eligible operations. The other centre did not have any data available from NHS Digital.

The overall case ascertainment for all centres combined was 84.5%, 72 (72.0%) centres had a case ascertainment rate of >80% and 59 (59.0%) centres >95%. The range in the percentage of cases submitted to the audit was 2.5% to 100%, Appendix 7 (page 56).

Of the 232,083 operations submitted during the audit period (01 September 2017 to 31 August 2018), 14,208 (6.1%) operations are excluded from analysis; the eligibility information is on the NOD Audit website: [NOD Audit Eligibility Criteria](#). This left 217,875 operations performed in 101 participating centres eligible for analysis. The operations were performed on 107,406 (49.3%) left eyes and 110,469 (50.7%) right eyes from 176,019 patients. These operations were performed by 1,992 surgeons.

8.2 Surgeons

The 217,875 eligible operations were performed by 1,992 surgeons where:

- 1,024 consultant surgeons performed 148,409 (68.1%) operations
- 203 career grade non-consultant surgeons performed 17,804 (8.2%) operations
- 761 more experienced trainee surgeons performed 43,808 (20.1%) operations
- 149 less experienced trainee surgeons performed 7,854 (3.6%) operations

The percentage of operations performed by each grade of surgeon varied between contributing centres reflecting catchment area, NHS trust differences and training opportunities for junior trainee surgeons within England and Wales, Appendix 7 (page 56) and Figures 1a and 1b (page 17).

The median number of operations each surgeon had performed was 68 operations (IQR; 20 – 139: range; 1 – 3,781). Eleven surgeons had data for >1,000 operations, all worked in independent sector treatment provider sites and two of them also worked in a contributing NHS Trust. In the current audit year, 1,177

(59.4%) surgeons performed >50 eligible operations. For comparison these percentages were 52.1% in audit year 1 (September 2015 to August 2016) and 55.5% in audit year 2 (September 2016 to August 2017). Of the 815 surgeons with \leq 50 operations, 369 (46.8%) were consultants or career grade non-consultant surgeons, 420 (53.2%) were trainee surgeons and 26 (3.2%) had data as both a trainee and a consultant or career grade non-consultant surgeon.

Of the 1,992 surgeons, 1,268 (63.7%) surgeons were male, 719 (36.1%) surgeons were female and the surgeon's gender was unknown for five (0.3%) surgeons. There were 282 (14.2%) surgeons who had data for operations performed in two participating centres, 25 (1.3%) in three participating centres and five surgeons had data for operations performed in seven participating centres.

Figure 1a: The number of eligible operations supplied to the national cataract audit for each contributing centre

Established centres with data in the first year audit report (Centres 1 – 56)

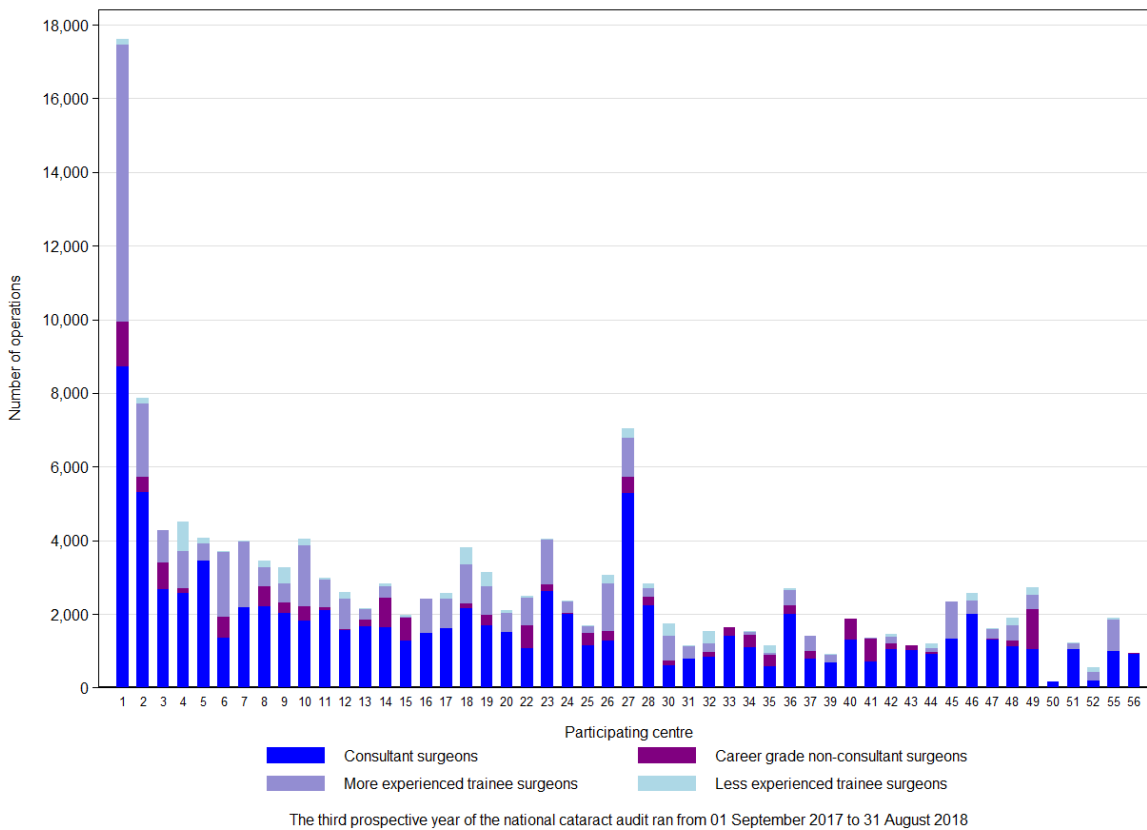
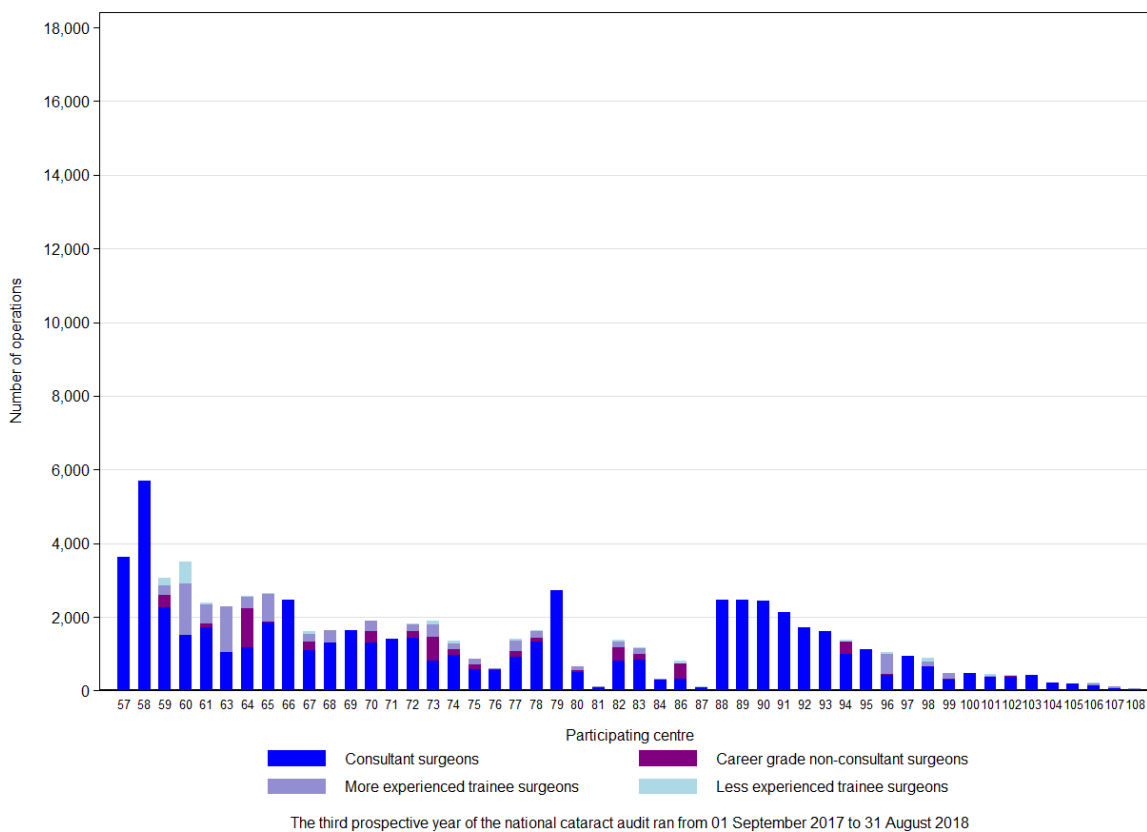


Figure 1b: The number of eligible operations supplied to the national cataract audit for each contributing centre

Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)



8.3 Patient characteristics – age and gender

Summary details of the 176,019 patients undergoing cataract surgery in the third year of the prospective audit were as follows:



- 176,019 patients with median age 76.3 years
- 74,980 (42.6%) patients were men with median age 75.9 years
- 100,813 (57.3%) patients were women with median age 76.6 years
- The gender was not recorded for 226 (0.1%) patients with median age 76.1 years
- The ethnicity was not recorded for 79,918 (45.4%) patients
- Patient characteristics were very similar for first treated and second treated eyes

8.4 First eye, second eye and simultaneous bilateral surgery

All cataract operations performed during the audit cycle would be in either the patient's first or second treated eye unless simultaneous bilateral surgery was performed. The RCOphth NOD Audit may not have the record for both operations, or the operation on the patient's first treated eye could have been performed at another centre or prior to electronic data collection within the centre. For these reasons, no results on time between operations are provided in this report.

Results for first treated, second treated and immediate simultaneous bilateral operations are described below.

First treated eye cataract surgery:

- First eye cataract surgery was performed for 128,032 (58.9%) operations
- The median age at first treated eye surgery was 75.8 years (range; 18.0 – 117.9)
- 23,886 (18.7%) patients were recorded as having diabetes mellitus at the time of their first cataract operation
- 2,498 (2.0%) patients were recorded as unable to lie flat
- 2,689 (2.1%) patients were recorded as unable to cooperate during the operation
- 5,801 (4.5%) patients were operated on under general anaesthesia, combined with local and/or topical for 4,946 patients

Second treated eye cataract surgery:

- Second eye cataract surgery was performed for 89,367 (41.1%) operations
- The median age at second treated eye surgery was 77.0 years (range; 18.0 – 104.2)
- 17,954 (20.1%) patients were recorded as having diabetes mellitus at the time of their second treated eye surgery
- 1,539 (1.7%) patients were recorded as being unable to lie flat
- 2,120 (2.4%) patients were recorded as being unable to cooperate during the operation
- 3,773 (4.2%) patients were operated on under general anaesthesia, combined with local and/or topical for 3,267 patients

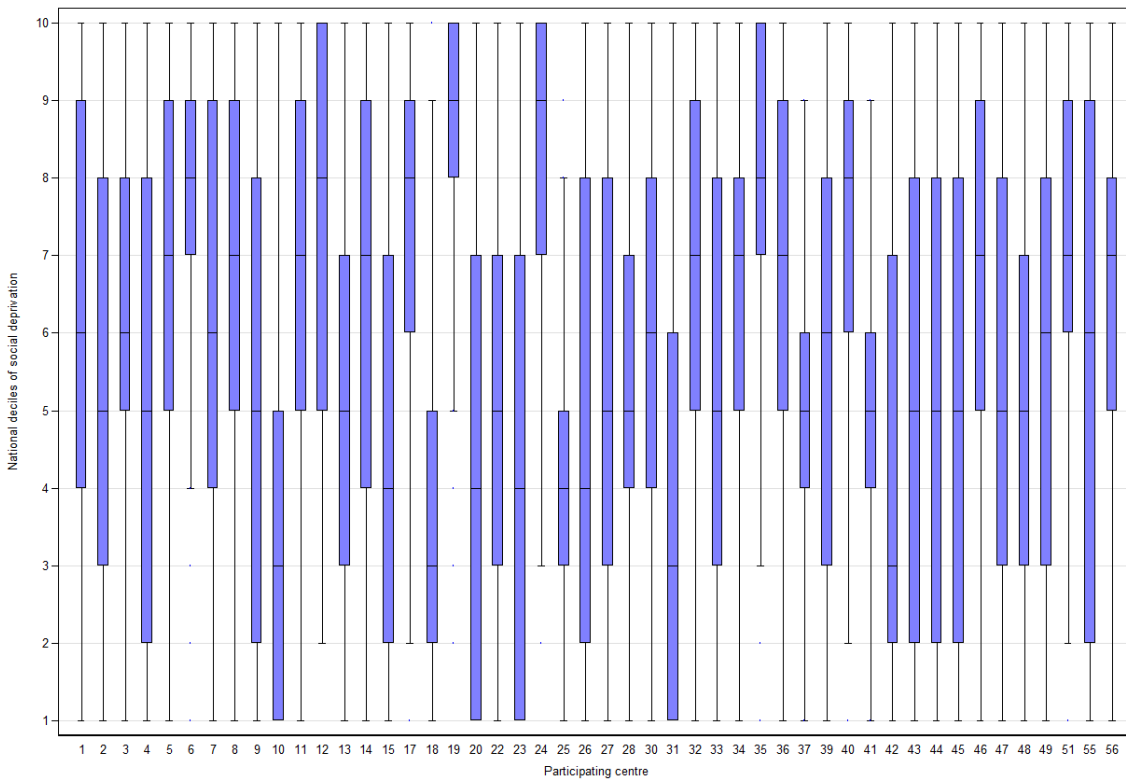
Immediate simultaneous bilateral cataract surgery:

- Immediate simultaneous bilateral cataract surgery was performed for 238 patients by 141 surgeons from 50 centres
- The median age was 73.6 years (range; 22.3 – 97.3), with no difference between male or female patients (mean age in years; 68.9 for males vs. 71.6 for females, $p = 0.1823$)
- 85 (35.7%) patients were male and 153 (64.3%) were female
- 38 (16.0%) patients were recorded as having diabetes mellitus
- 22 (9.2%) patients were recorded as being unable to lie flat
- 16 (6.7%) patients were recorded as being unable to cooperate during the operation
- 136 (57.1%) patients were operated on under general anaesthesia, 103 combined with local or topical anaesthesia

8.5 Index of multiple deprivation

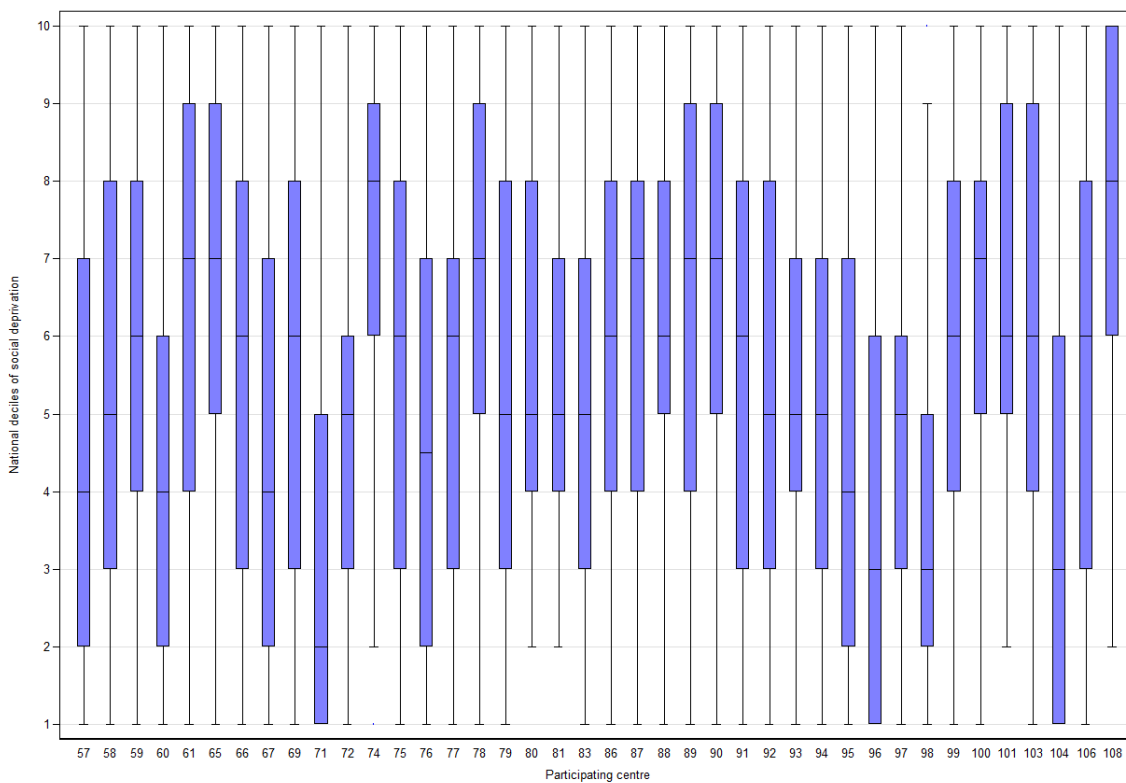
The English index of multiple deprivation was calculated for 148,457 (98.2%) patients from 88 participating English centres with data recorded on the Medisoft EMR, or three of the contributing in-house databases. All but eight centres performed cataract surgery on patients in the most deprived national decile of social deprivation (decile 1) and all but three centres performed cataract surgery on patients in the least deprived national decile of social deprivation (decile 10). The median English national decile of social deprivation for patients undergoing cataract surgery varied significantly between centres, confirming that there was variation between the participating centres in the social deprivation of patients undergoing cataract surgery, Figures 2a and 2b (page 20). The index of multiple deprivation was not calculable for operations from the other contributing data collection systems or from the contributing Welsh centres where different indices are used.

**Figure 2a: Box and whisker plots of the national deciles of social deprivation by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)**



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

**Figure 2b: Box and whisker plots of the national deciles of social deprivation by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)**



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

8.6 Preoperative Visual Acuity (VA)

One centre (4,067 operations) requested that their visual acuity data was not reported after discovering a fault with the extraction of this data. Of the 213,808 operations from 100 centres considered for visual acuity analysis, a preoperative visual acuity was recorded for 196,465 (91.9%) eyes and missing for 17,343 (8.1%) eyes, of which 1,418 (0.7% of operations) had a Pin Hole Visual Acuity (PHVA) measured but no Corrected Distance Visual Acuity (CDVA) or Uncorrected Distance Visual Acuity (UDVA) measurement.

There was wide variation in the percentage of eyes with a preoperative VA by contributing centre, where for five (5.0%) centres <50% of eyes had a preoperative VA, for 86 (86.0%) centres more than 80% of eyes had a preoperative VA and for 52 (52.0%) centres more than 95% of eyes had a preoperative VA, Figures 3a and 3b (page 22).

The overall percentages of eyes with a preoperative VA were 91.9%, 90.4% and 95.2% for the centres who joined the audit in year 1, year 2 and the recently joining centres respectively.

For the 196,465 eyes with a preoperative VA measurement, the measurement was CDVA in 136,952 (69.7%) eyes, UDVA in 56,780 (28.9%) eyes and in 2,733 (1.4%) eyes the CDVA measurement was the same as the UDVA measurement. The median preoperative VA was 0.50 LogMAR units for each grade of surgeon.

The median preoperative VA was 0.50 LogMAR units (range; -0.30 – NPL) (6/19 Snellen Equivalent); where 6,539 (3.3%) eyes were CF, 3,867 (2.0%) eyes were HM, 979 (0.5%) eyes were PL and 58 (<0.1%) eyes were NPL.

The preoperative VA was 0.30 LogMAR units (6/12) or better for 67,944 (34.6%) eyes, 0.60 LogMAR units (6/24) or better for 140,142 (71.3%) eyes and 1.0 LogMAR units (6/60) or better for 176,326 (89.8%) eyes.

There was variability in the preoperative VA between contributing centres, where for 62 (62.0%) centres the median preoperative VA was 0.50 LogMAR and the range in the centres median preoperative VA was 0.20 – 0.60 LogMAR, Figures 4a and 4b (page 23).

Deprivation is recognised as an influence on the ability of individuals to access care for a variety of conditions. Here we have used preoperative VA as a proxy for cataract severity to assess whether deprivation is (or is not) related to timely access to surgery before symptoms of vision loss become advanced. On this basis, with some exceptions at the extremes, access to surgery appeared to be reasonably uniform across the Index of Multiple Deprivation (IMD) national deciles, Figure 5 (page 24). There was, however, some observed variation as demonstrated in Table 2 (page 24), where there was a statistically significant association ($p < 0.001$) between higher levels of deprivation and worse preoperative VA, for example 23.5% of the patients in the most deprived decile (decile 1) had a preoperative VA of ≥ 1.00 LogMAR, compared to 11.8% of patients in the least deprived decile (decile 10). Consistent with slightly worse access amongst the most deprived, is the observation that there were proportionally fewer operations than expected undertaken in the more deprived deciles than in the less deprived deciles (Table 2, page 24), though this result might be due to bias in socioeconomic status of contributing centres (i.e. there may have been more centres serving less deprived communities).

For 37,346 patients who had both eyes undergo cataract surgery during the audit period and had a preoperative VA measurement for both eyes (excluding immediate simultaneous bilateral surgery), the mean presenting VA was 0.11 LogMAR worse (95% CI: 0.10 to 0.12 LogMAR) for the first treated eye than for the second treated eye (means = 0.57 (6/22) and 0.46 LogMAR (6/17) respectively, $p < 0.001$).

Of the 238 patients who had immediate simultaneous bilateral surgery, 179 (75.2%) had a preoperative VA measurement for both eyes where the difference in the VA between right and left eyes was 0.00 LogMAR units and the inter quartile range was -0.10 to +0.20 LogMAR units.

Figure 3a: The percentage of cataract operations supplied to the audit with a valid preoperative VA by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)

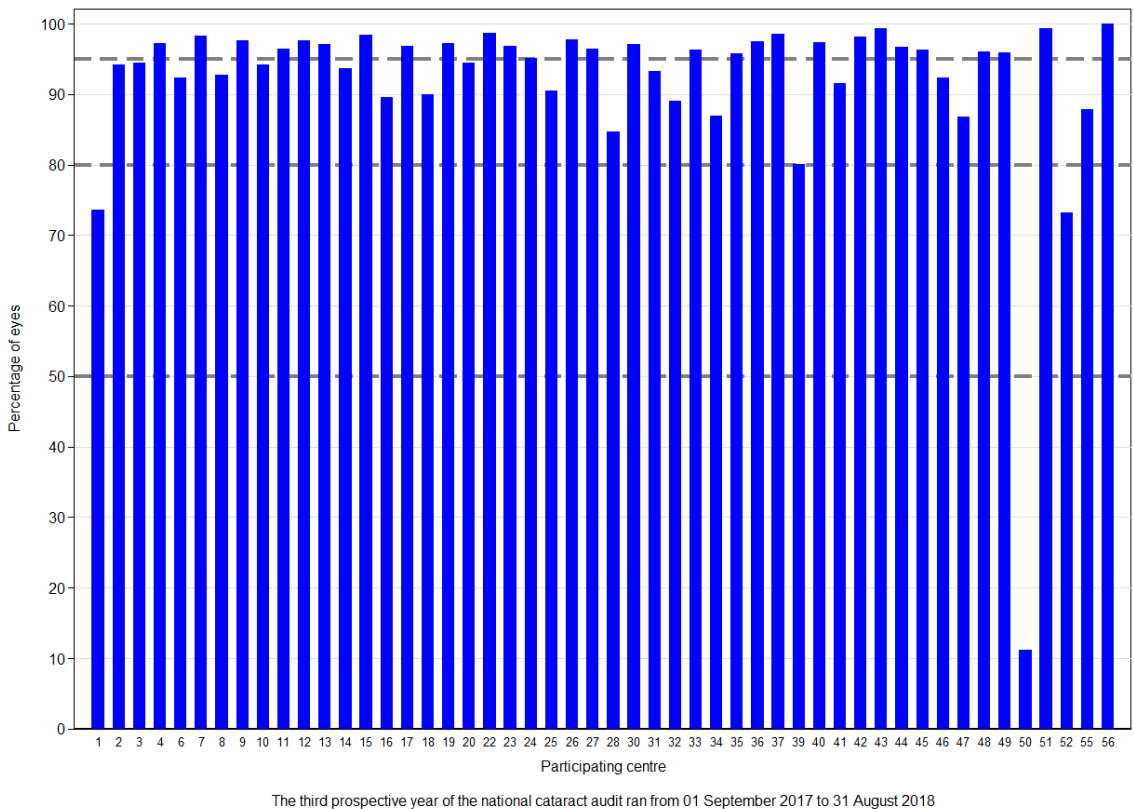


Figure 3b: The percentage of cataract operations supplied to the audit with a valid preoperative VA by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)

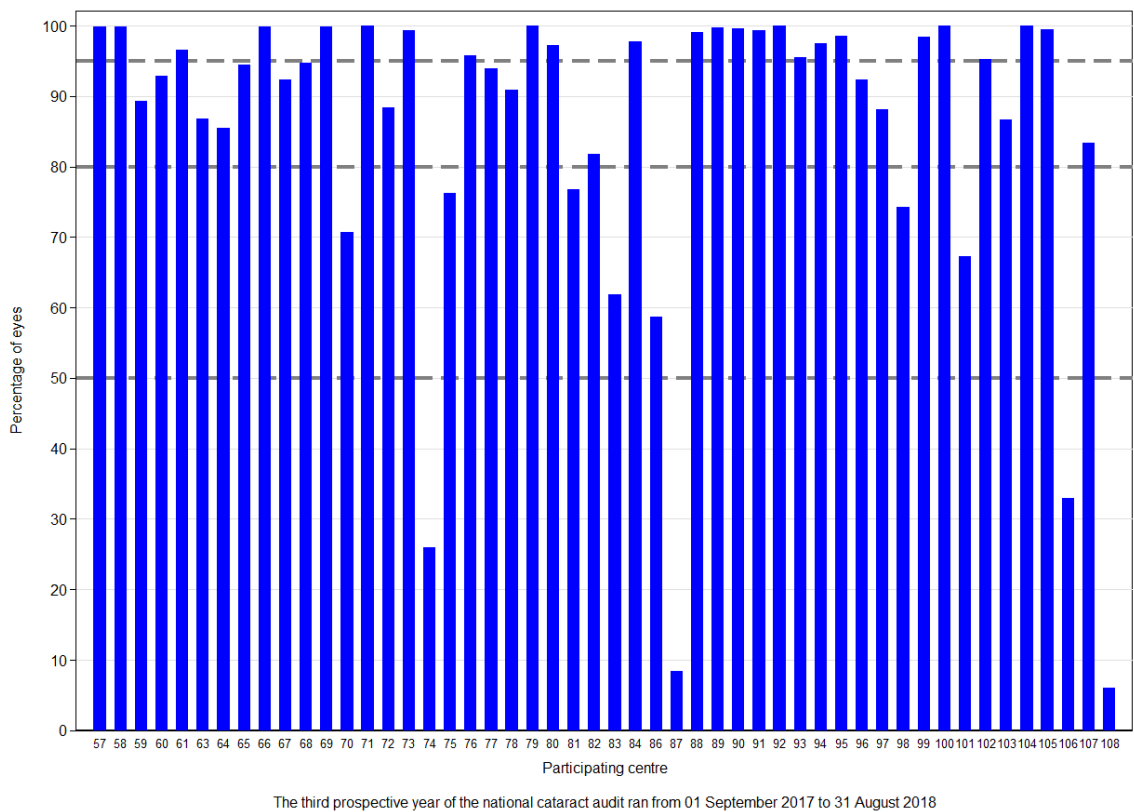
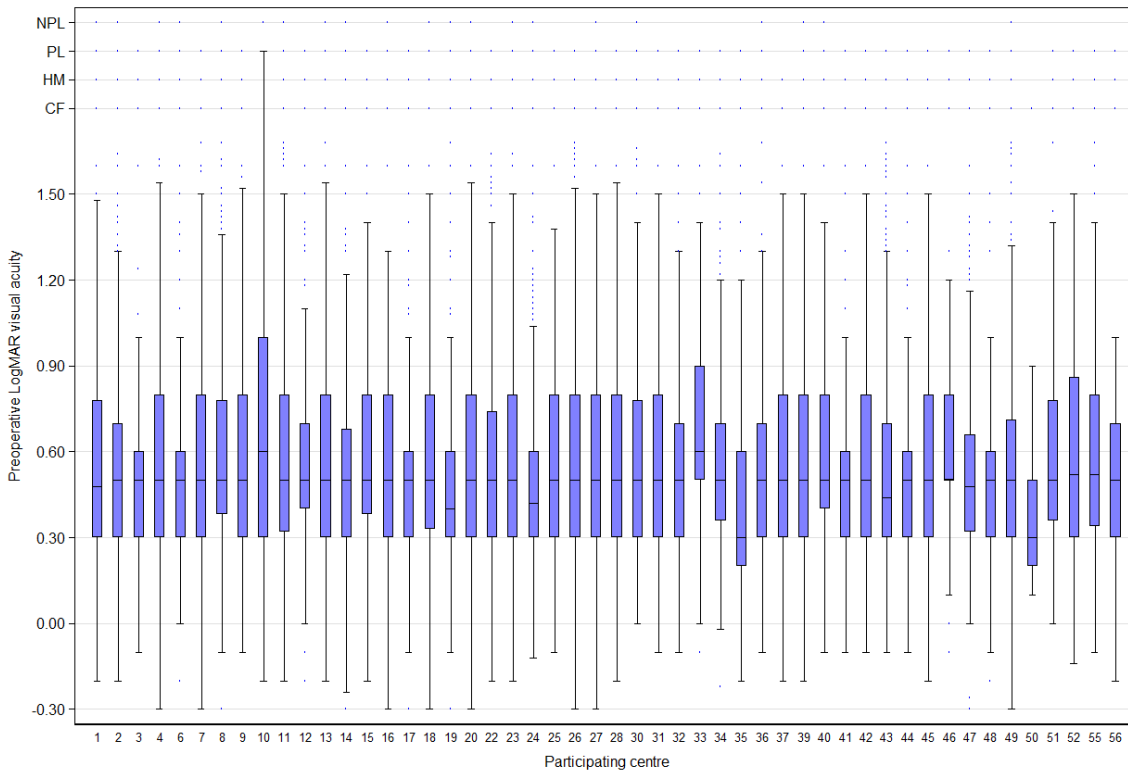
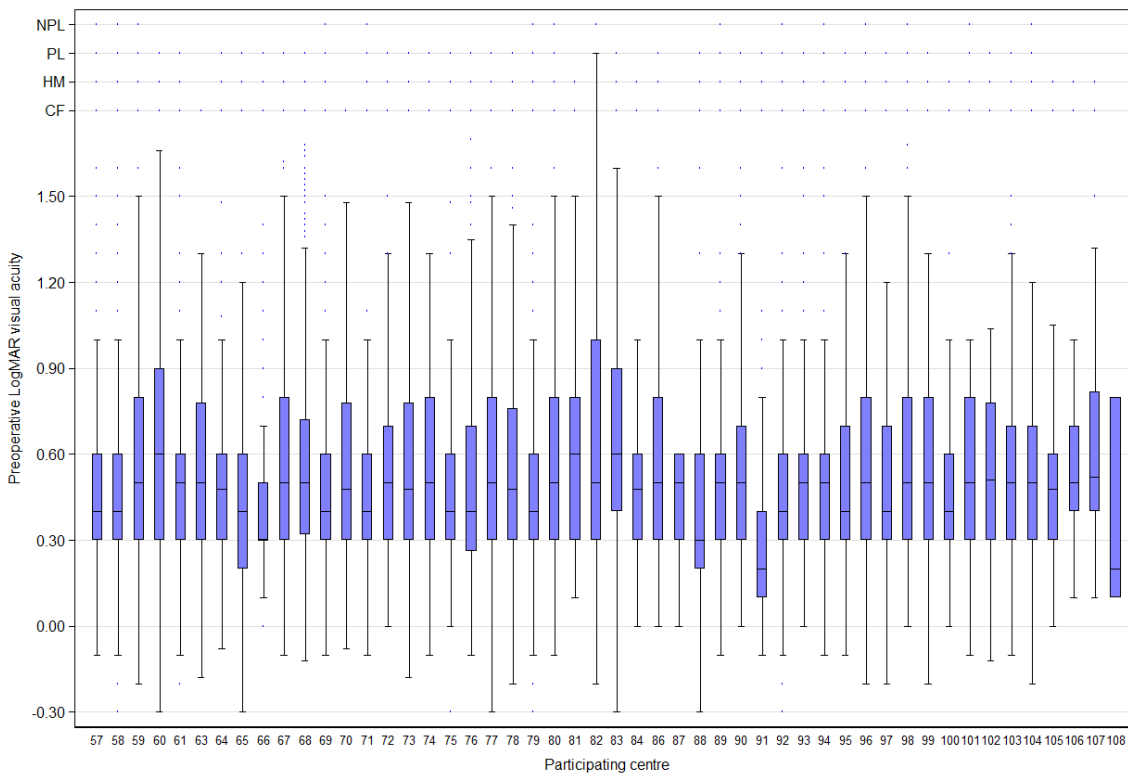


Figure 4a: Box and whisker plots of preoperative VA by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)



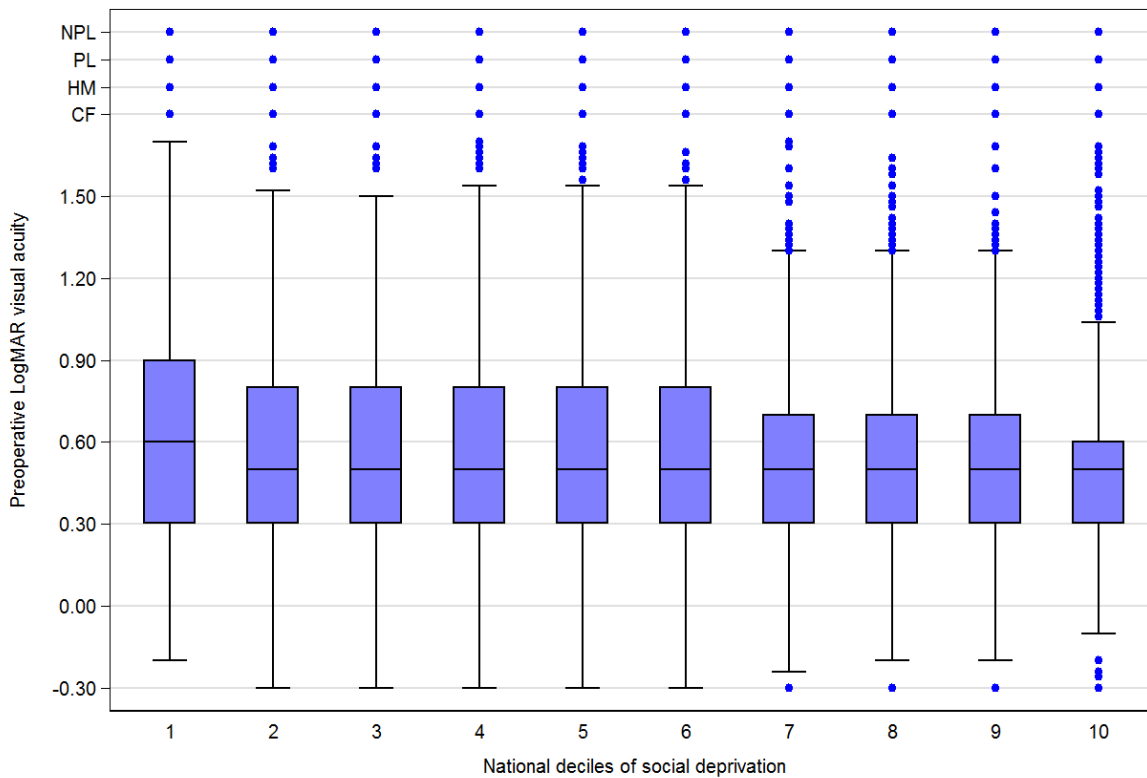
The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

Figure 4b: Box and whisker plots of preoperative VA by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

Figure 5: Box and whisker plots of preoperative VA by national deciles of social deprivation



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

Table 2: Preoperative visual acuity and social deprivation where decile 1 is the most deprived decile and decile 10 the least deprived

Decile of social deprivation	N	Preoperative LogMAR visual acuity			
		<0.30	0.30 - <0.60	0.60 - <1.00	≥1.00
1	12,838	10.9	38.4	27.2	23.5
2	12,553	12.0	40.2	26.6	21.2
3	12,787	12.7	41.9	26.3	19.1
4	13,325	12.9	43.0	26.9	17.2
5	13,742	14.0	44.3	25.4	16.2
6	14,403	13.0	45.7	25.6	15.7
7	14,258	14.2	46.8	25.2	13.9
8	14,304	15.0	47.5	24.4	13.2
9	14,601	15.2	48.1	24.4	12.4
10	14,331	14.7	50.2	23.3	11.8
Overall	137,142	13.5	44.8	25.5	16.2

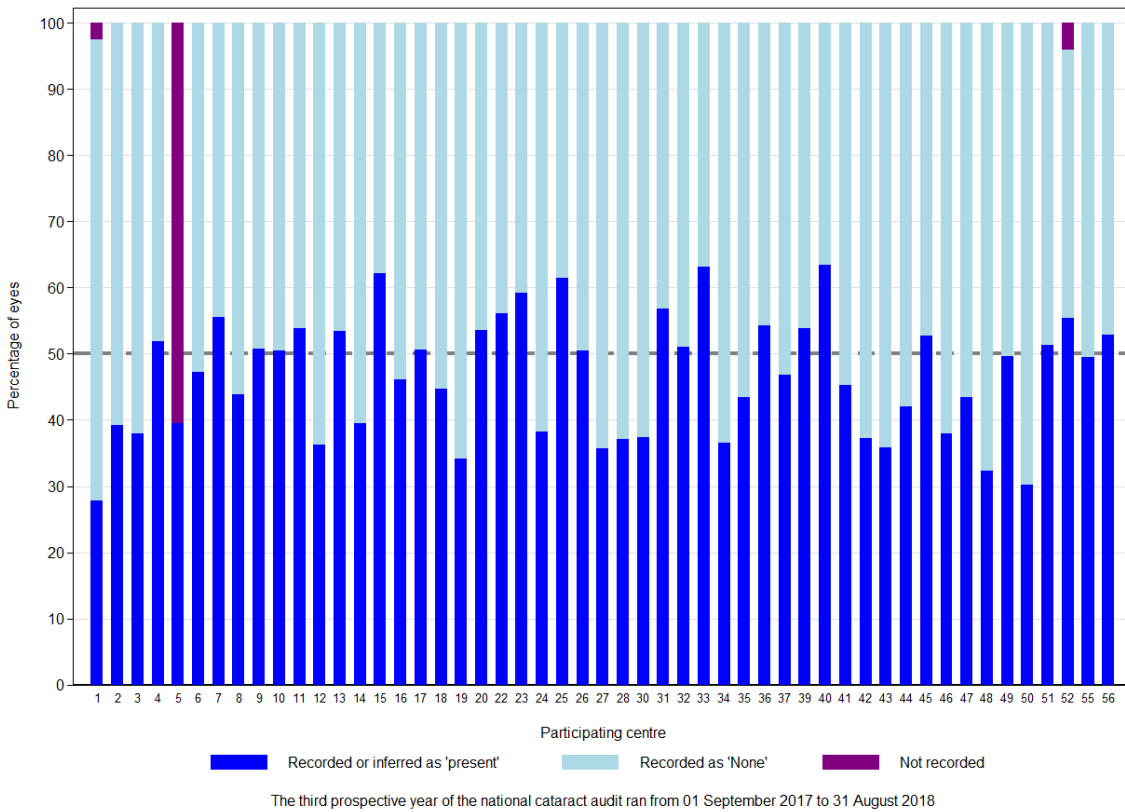
8.7 Ocular co-pathologies and risk indicators

The presence or absence of an ocular co-pathology or known risk indicator was recorded for 97.4% of operated eyes and was not recorded for 2.6% of eyes. Assuming that the not recorded ocular co-pathology or known risk indicators are 'none', then an ocular co-pathology or known risk indicator was present in 90,707 (41.6%) eyes and recorded as absent (or not recorded) for 127,168 (58.4%) eyes.

The percentage of eyes with ocular co-pathology or known risk indicator data recorded (any, none or not recorded) varied between centres, where the percentage of eyes reported to have any ocular co-pathology ranged between centres from 8.0% to 100.0%, and 36 (36.0%) centres had >50% of operated eyes with an ocular co-pathology, Figures 6a and 6b (page 26).

The most commonly recorded ocular co-pathologies were age-related macular degeneration, glaucoma and diabetic retinopathy which were recorded for 10.5%, 8.5% and 5.8% of operations respectively, Figure 7 (page 27). A higher proportion of operations were performed by consultant surgeons for each individual co-pathology, Figure 8 (page 27).

**Figure 6a: The percentage of cataract operations supplied to the audit according to recorded ocular co-pathology or known risk indicator data by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)**



**Figure 6b: The percentage of cataract operations supplied to the audit according to recorded ocular co-pathology or known risk indicator data by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)**

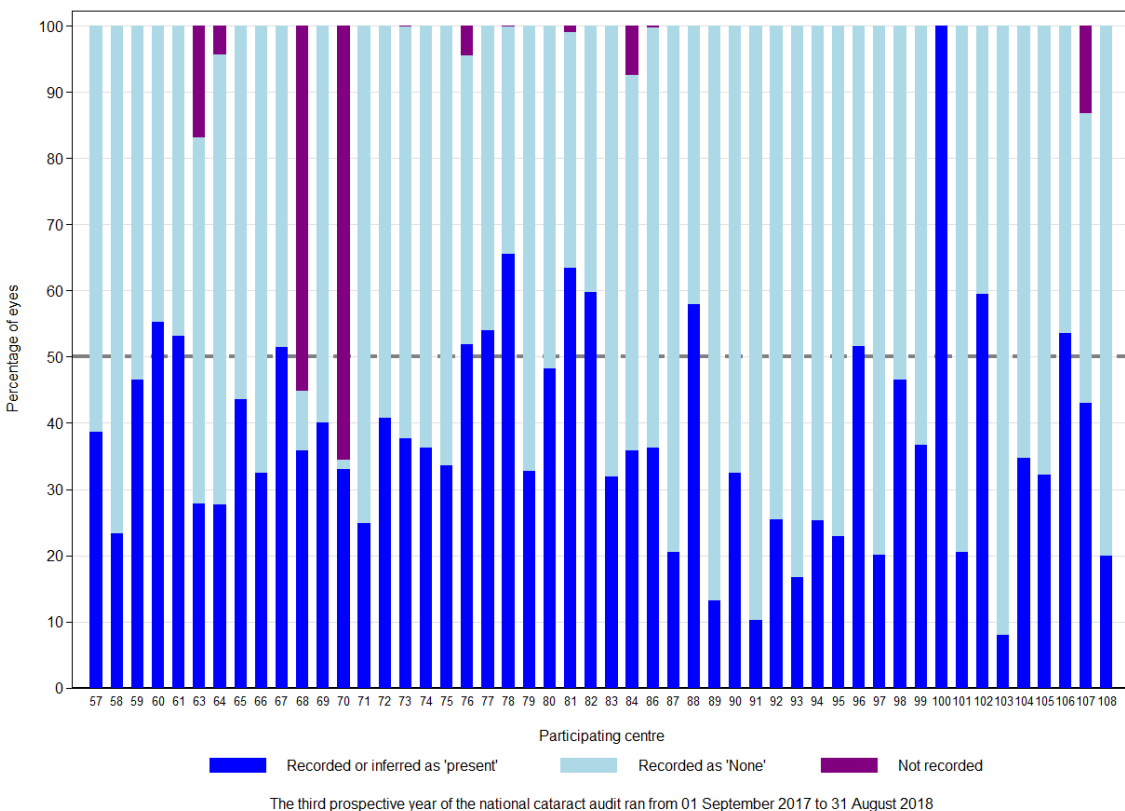
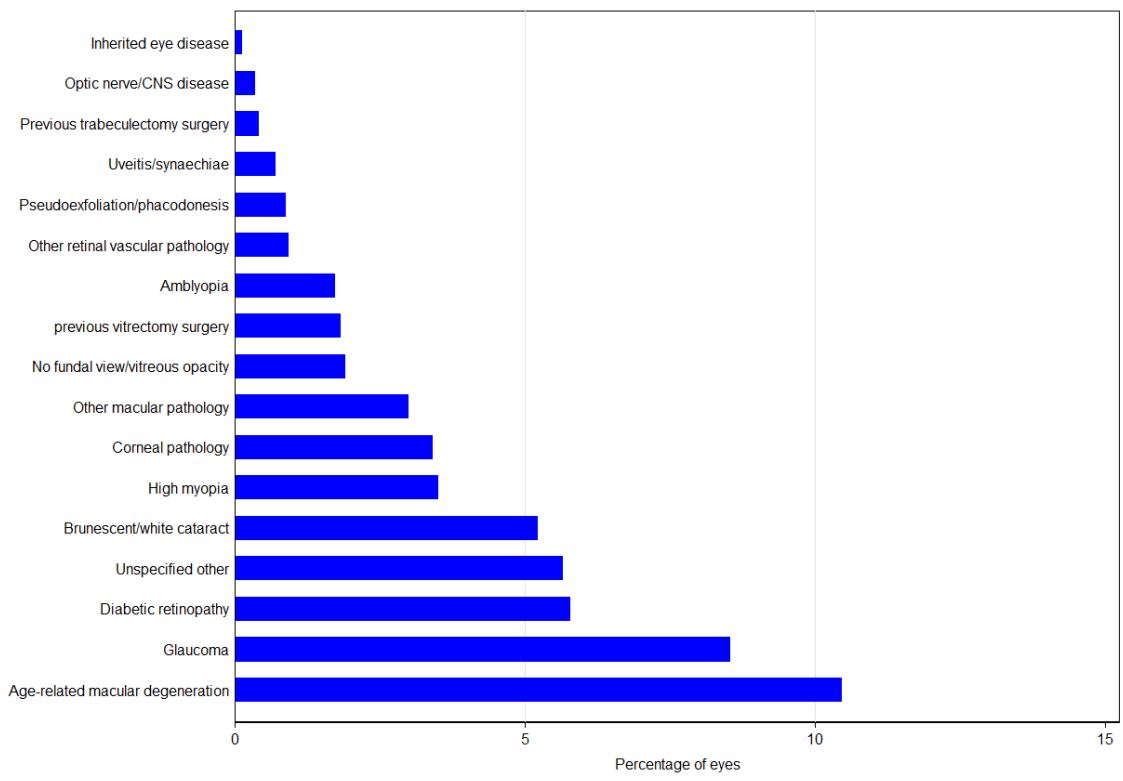
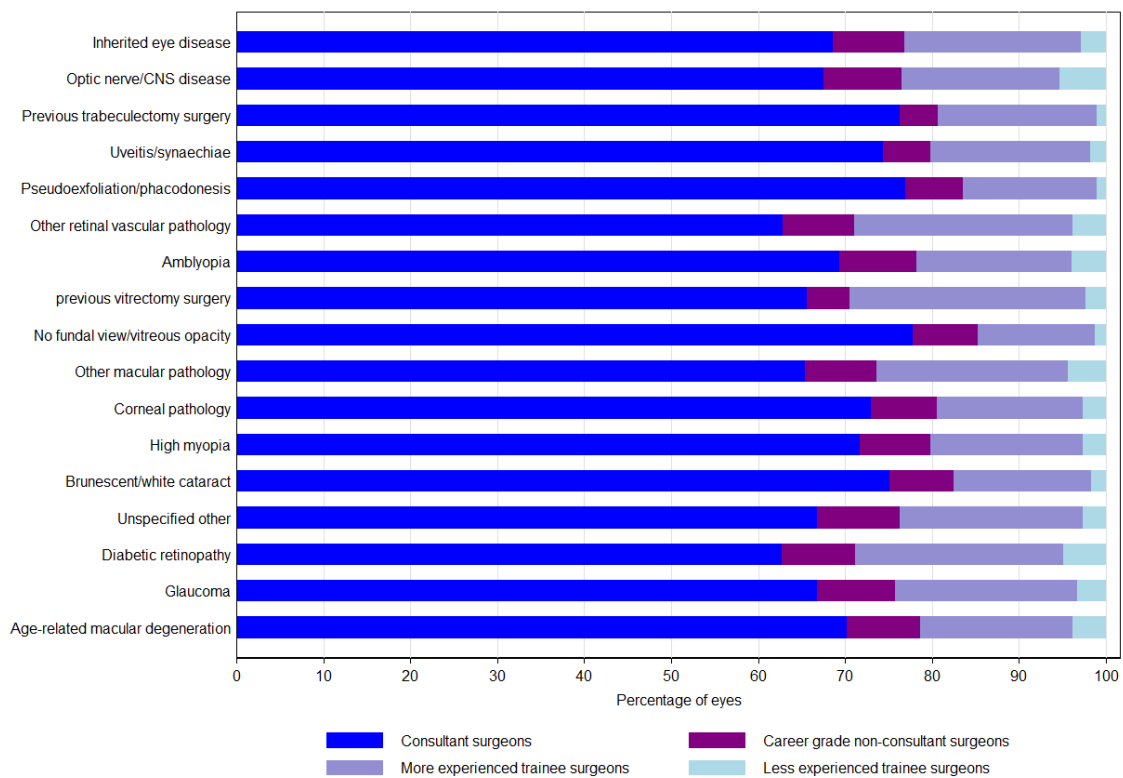


Figure 7: The percentage of cataract operations supplied to the audit with individual ocular co-pathologies or known risk indicator



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

Figure 8: The percentage of cataract operations supplied to the audit with individual ocular co-pathologies or known risk indicator by grade of surgeon



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

8.8 Operation characteristics

Phacoemulsification ± IOL was performed in all eligible cataract operations and for 205,153 (94.2%) operations was the only operative procedure performed. Phacoemulsification ± IOL was combined with one other procedure in 11,488 (5.3%) operations, with ≥2 other procedures in 1,234 (0.5%) operations.

The most frequently performed operative procedures that were combined with phacoemulsification ± IOL were insertion of pupil ring expander and anterior vitrectomy, which were performed in 0.9% and 0.7% of operations respectively. A full list of operative procedures combined with phacoemulsification ± IOL can be found in Appendix 13 (page 87).

8.9 Operative complications

One or more intraoperative complication was recorded for 6,020 (2.8%) operations, with the most frequently recorded being PCR which was reported for 2,684 (1.2%) operations. The 'any' intraoperative complication rates were higher for the less experienced grade of surgeons, while the rates for individual intraoperative complications were similar across the grades of surgeon except for PCR, which were higher for the less experienced grades, Table 3, page 29.

Table 3: Recorded intraoperative complications for cataract operations for the third year of the National Cataract Audit by grade of surgeon

Intraoperative complications N (column %)	Consultant surgeons (N = 148,409)	Career grade non-consultant surgeons (N = 17,804)	More experienced trainee surgeons (N = 43,808)	Less experienced trainee surgeons (N = 7,854)	Total (N = 217,875)
Eyes with no complications	145,011 (97.7)	17,307 (97.2)	42,038 (96.0)	7,499 (95.5)	211,855 (97.2)
Eyes with ≥1 complication	3,398 (2.3)	497 (2.8)	1,770 (4.0)	355 (4.5)	6,020 (2.8)
Recorded intraoperative complications*					
Posterior capsular rupture	1,466 (1.0)	209 (1.2)	835 (1.9)	174 (2.2)	2,684 (1.2)
Zonule rupture – no vitreous loss	426 (0.3)	62 (0.3)	231 (0.5)	38 (0.5)	757 (0.3)
Corneal epithelial abrasion	309 (0.2)	59 (0.3)	92 (0.2)	40 (0.5)	500 (0.2)
Torn iris / damage from the phaco	268 (0.2)	32 (0.2)	115 (0.3)	18 (0.2)	433 (0.2)
Lens exchange required / other IOL problems	128 (<0.1)	16 (<0.1)	61 (0.1)	12 (0.2)	217 (0.1)
Anterior capsular tear	64 (<0.1)	19 (<0.1)	95 (0.2)	14 (0.2)	192 (<0.1)
Endothelial damage / Descemet's tear	111 (<0.1)	17 (<0.1)	49 (0.1)	7 (<0.1)	184 (<0.1)
Iris prolapse	88 (<0.1)	10 (<0.1)	84 (0.2)	1 (<0.1)	183 (<0.1)
Corneal oedema	81 (<0.1)	10 (<0.1)	45 (0.1)	15 (0.2)	151 (<0.1)
Iris trauma	86 (<0.1)	17 (<0.1)	43 (0.1)	2 (<0.1)	148 (<0.1)
Hyphaema	77 (<0.1)	11 (<0.1)	38 (<0.1)	2 (<0.1)	128 (<0.1)
Phaco burn / wound problems	38 (<0.1)	9 (<0.1)	15 (<0.1)	5 (<0.1)	67 (<0.1)
Choroidal / suprachoroidal haemorrhage	33 (<0.1)	5 (<0.1)	12 (<0.1)	3 (<0.1)	53 (<0.1)
Unspecified other**	540 (0.4)	72 (0.4)	242 (0.6)	45 (0.6)	899 (0.4)

Posterior capsular rupture (PCR) is defined for the purposes of the National Clinical Audit as “posterior capsule rupture with or without vitreous prolapse or zonule rupture with vitreous prolapse” and abbreviated simply as PCR. Retained lens fragments in the vitreous implies PCR.

*Each operation can have more than one intraoperative complication recorded.

**The unspecified other included one IOP spike, one wound leak, three corneal burns, three vitreous haemorrhages, 12 instances when the operation was cancelled and 23 decentred IOLs.

8.10 Postoperative complications

In order to submit postoperative complication data to the audit there needs to be enough time after the operation for patients to receive a postoperative follow-up. Therefore, the audit reports on operations performed before 30 June 2018 for this aspect of the audit. This allows the potential for two months' follow-up.

Of the 217,875 eligible cataract operations submitted to the audit, 180,664 (82.9%) operations from 100 centres were performed before 30 June 2018 and had the potential for two months' follow-up. One recently joining centre had all operations in July or August 2018 and is not included in postoperative complications results. 96,481 (53.4%) operations had no postoperative complication data recorded, 74,198 (41.1%) had 'none' recorded as the postoperative complication, and 9,985 (5.5%) had at least one postoperative complication recorded. The variation in data likely reflects differences in cataract surgery patient pathways across centres.

The percentage of operations with a postoperative complication record (none or a complication), or no postoperative complication record, varied significantly between the participating centres, with 11 centres having no records of any specific postoperative complications, Figures 9a and 9b (pages 30 & 31).

The most frequently recorded postoperative complications were postoperative uveitis, corneal oedema / striae and cystoid macular oedema which were the only individual postoperative complications recorded for >1.0% of operations, Figure 10 (page 31).

Figure 9a: The percentage of cataract operations supplied to the audit with and without postoperative complication data by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)

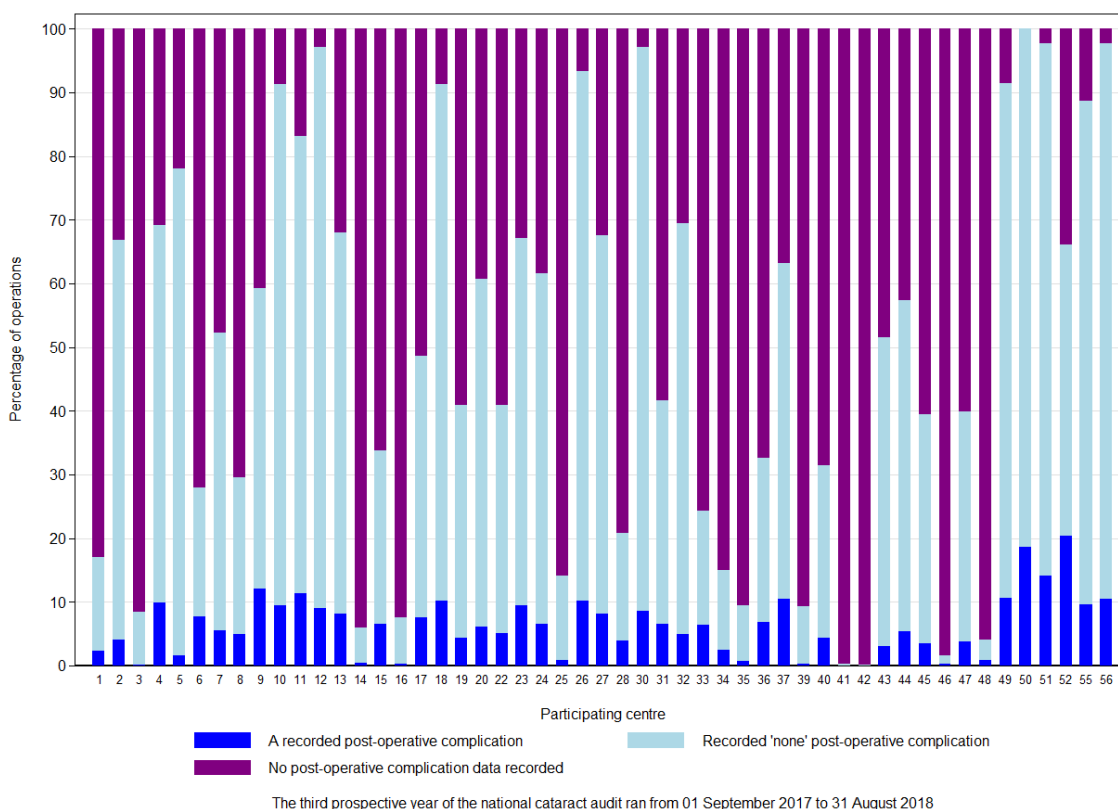


Figure 9b: The percentage of cataract operations supplied to the audit with and without postoperative complication data by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)

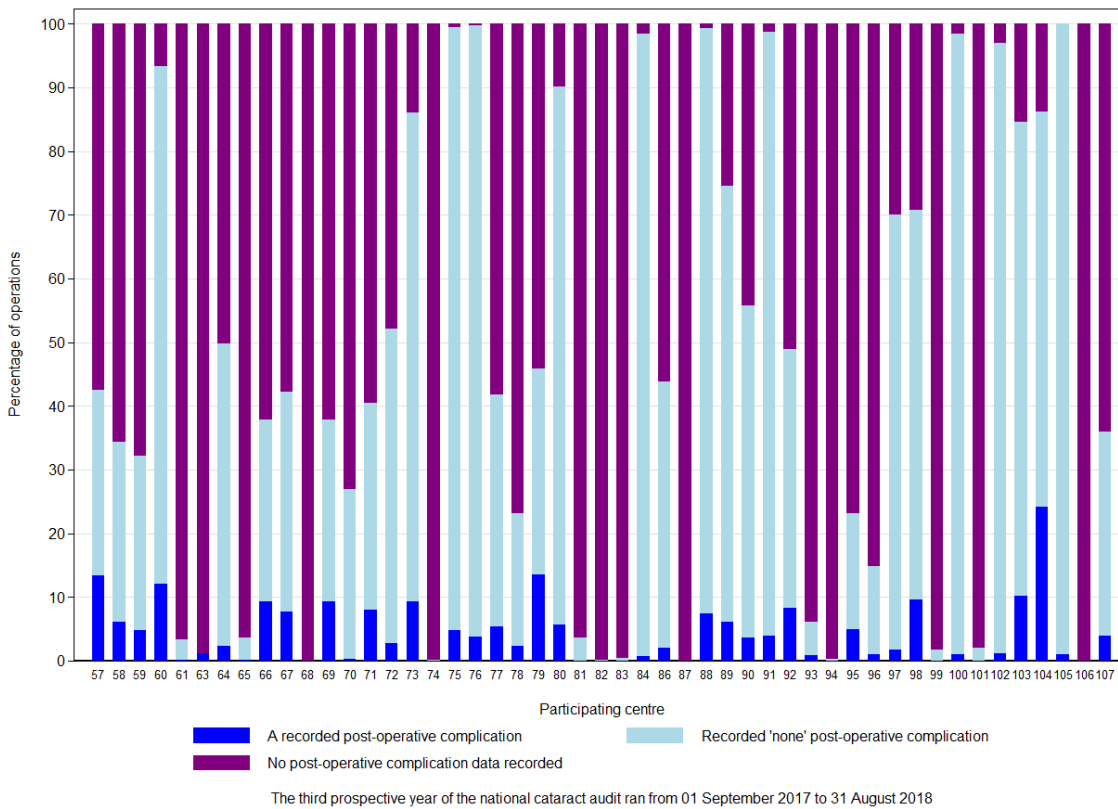
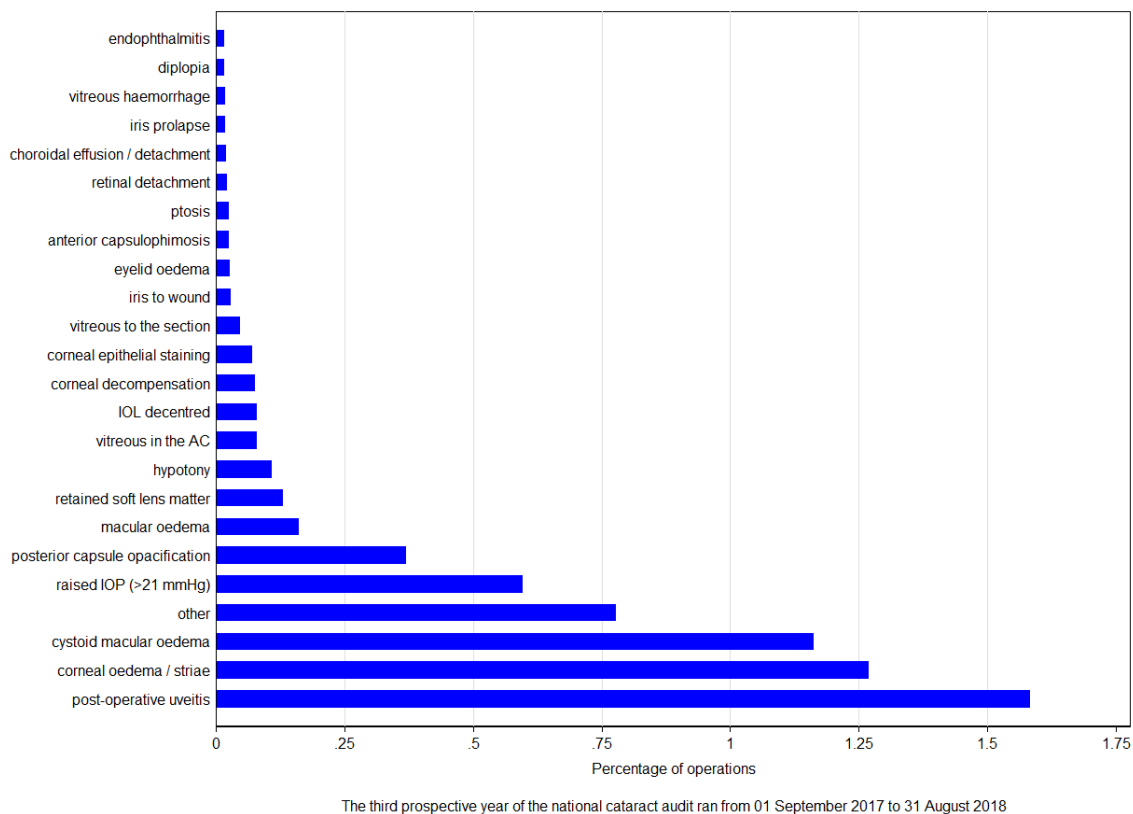


Figure 10: The percentage of cataract operations supplied to the audit with each individual postoperative complication



8.11 Postoperative visual acuity

One centre (4,067 operations) requested that their visual acuity data was not reported after discovering a fault with the extraction of this data. From the 213,808 operations from 100 centres considered for visual acuity analysis, 177,380 (83.0%) operations were performed before 30 June 2018 and had the potential for two months' follow-up. These results are from 99 centres as one centre (50 operations) had none of their operations in this qualifying period. Of these, a postoperative visual acuity was recorded for 134,758 (76.0%) eyes and missing for 42,622 (24.0%) eyes (including all operations from one centre with no postoperative VA data). The year 3 percentages of eyes with a postoperative VA were 77.0%, 73.7% and 75.2% for centres who first participated in audit year 1, audit year 2 and the recently joining year 3 centres respectively. Eligible for postoperative VA analysis are 134,758 operations from 99 contributing centres, which includes one centre with >100 operations and no postoperative VA data.

There was wide variation in the percentage of eyes with postoperative VA by contributing centre; for 16 (16.2%) centres <50% of eyes had a postoperative VA, for 55 (55.5%) centres >80% of eyes had a postoperative VA and for 14 (14.1%) centres >95% of eyes had a postoperative VA, Figures 11a and 11b (page 33) and Appendix 8 (page 62). Influencing this result are operations performed in the latter part of the audit period where not all patients could have sufficient follow-up for all postoperative results to be available. Another factor is discharge to the community for the postoperative refraction and visual acuity assessments, as these measurements are not always sent back to the hospitals for recording on the hospital's EMR system.

Overall, the percentage of first and second treated eyes with postoperative VA data was 77.5% for first treated eyes and 73.8% for second treated eyes. The percentage of first and second treated eyes with postoperative VA data varied between centres, where 82 (82.8%) centres had a higher percentage of first treated eyes with postoperative VA data than second treated eyes, for 18 centres this difference was >10% points and for two centres >25% points, Appendix 9 (page 67).

For the 134,758 eyes eligible for postoperative VA assessment, the best measurement was CDVA in 42,322 (31.4%) eyes, UDVA in 40,238 (29.9%) eyes, PHVA in 27,872 (20.7%) eyes; the best measurement was the same for two of the assessment methods for 22,444 (16.7%) eyes and the same for all three methods in 1,882 (1.4%) eyes.

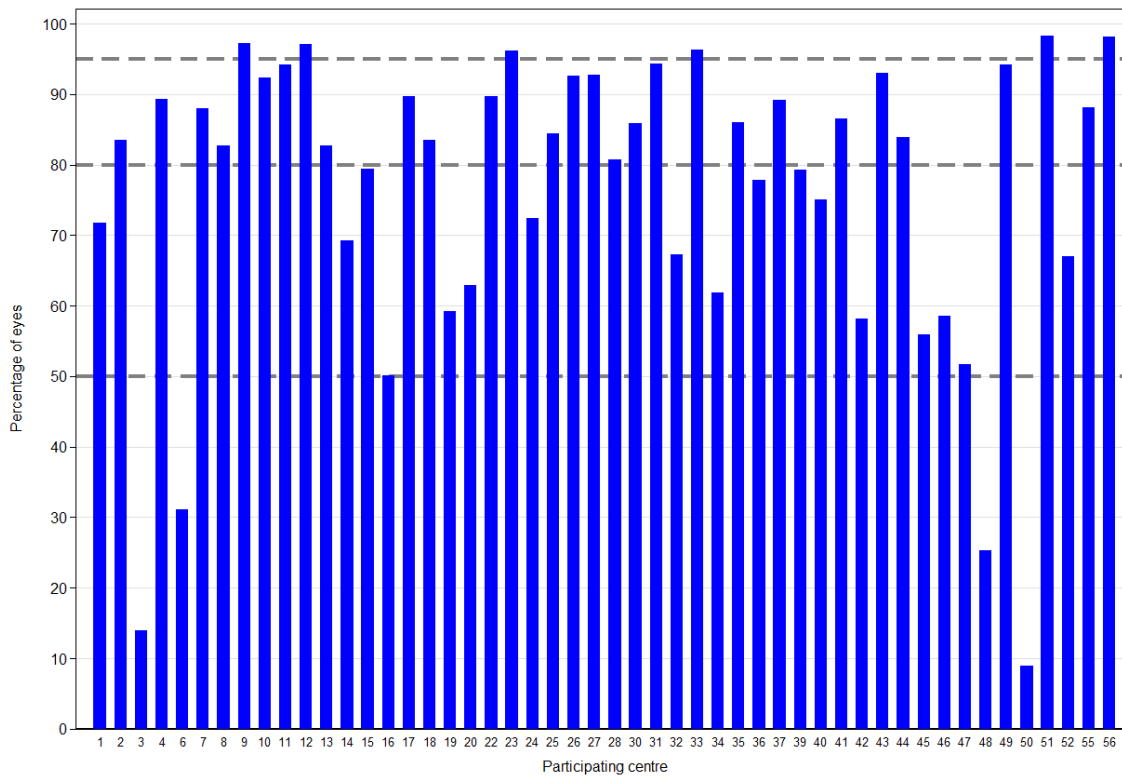
The median postoperative VA was 0.10 LogMAR units (range; -0.30 – NPL) (6/7.5 Snellen equivalent); where 437 (0.3%) eyes were CF, 273 (0.2%) eyes were HM, 57 (<0.1%) eyes were PL and 9 (<0.1%) eyes were NPL.

The postoperative VA was 0.30 LogMAR units (6/12) or better for 121,729 (90.3%) eyes, 0.60 LogMAR units (6/24) or better for 130,062 (96.5%) eyes and 1.0 LogMAR units (6/60) or better for 133,103 (98.8%) eyes.

The postoperative VA was fairly stable across participating centres, although there was some variation where the median postoperative VA was 0.00 LogMAR for 22 (22.4%) centres, 0.10 LogMAR for 47 (48.0%) centres and 0.20 LogMAR for 13 (13.3%) centres. The overall median postoperative VA for centres was 0.10 LogMAR with a range in the centres median postoperative VA of 0.00 – 0.35 LogMAR, Figures 12a and 12b (page 34).

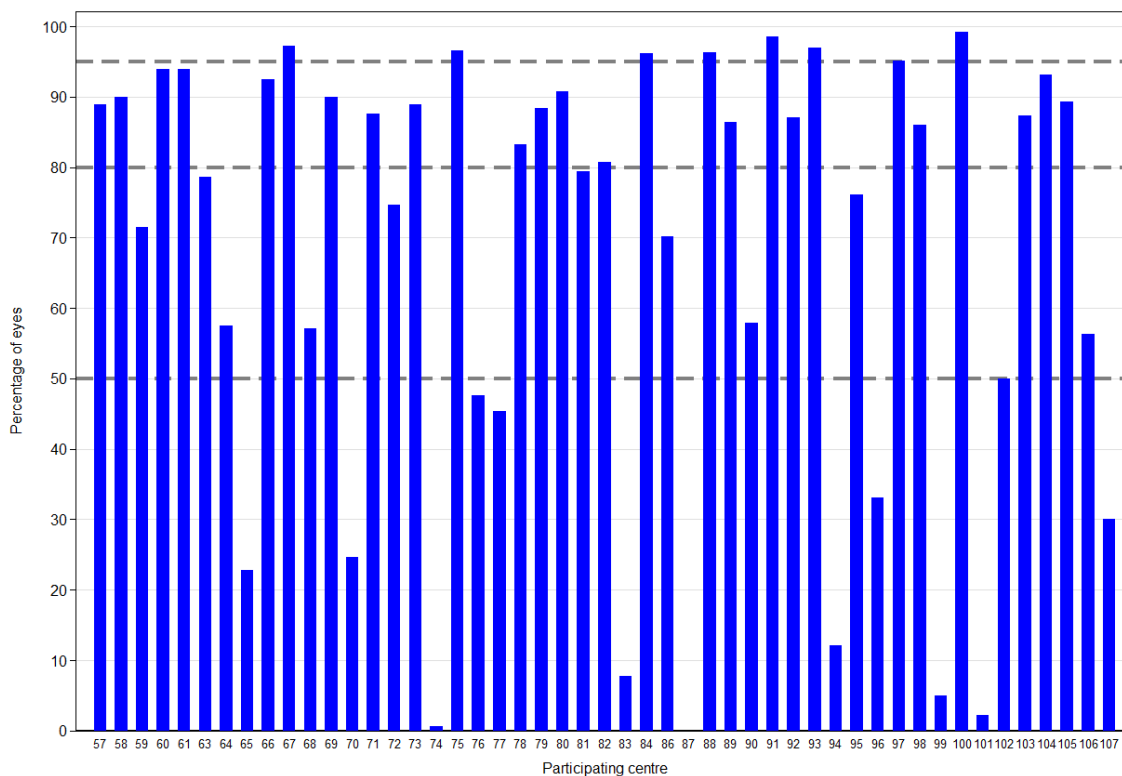
Overall, VA outcomes were as expected, though data completeness remains an area for improvement and results for centres with small numbers will be subject to significant statistical uncertainty and potential bias.

Figure 11a: The percentage of cataract operations supplied to the audit with a valid postoperative VA by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)



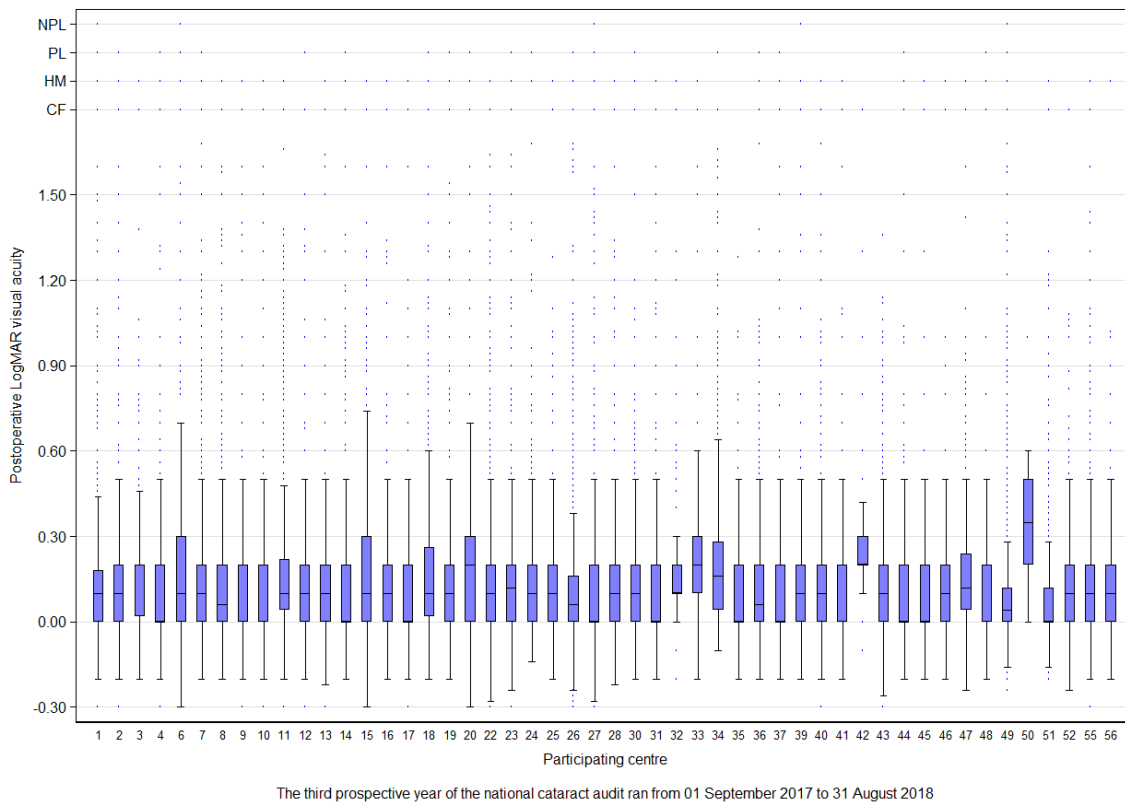
The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

Figure 11b: The percentage of cataract operations supplied to the audit with a valid postoperative VA by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)

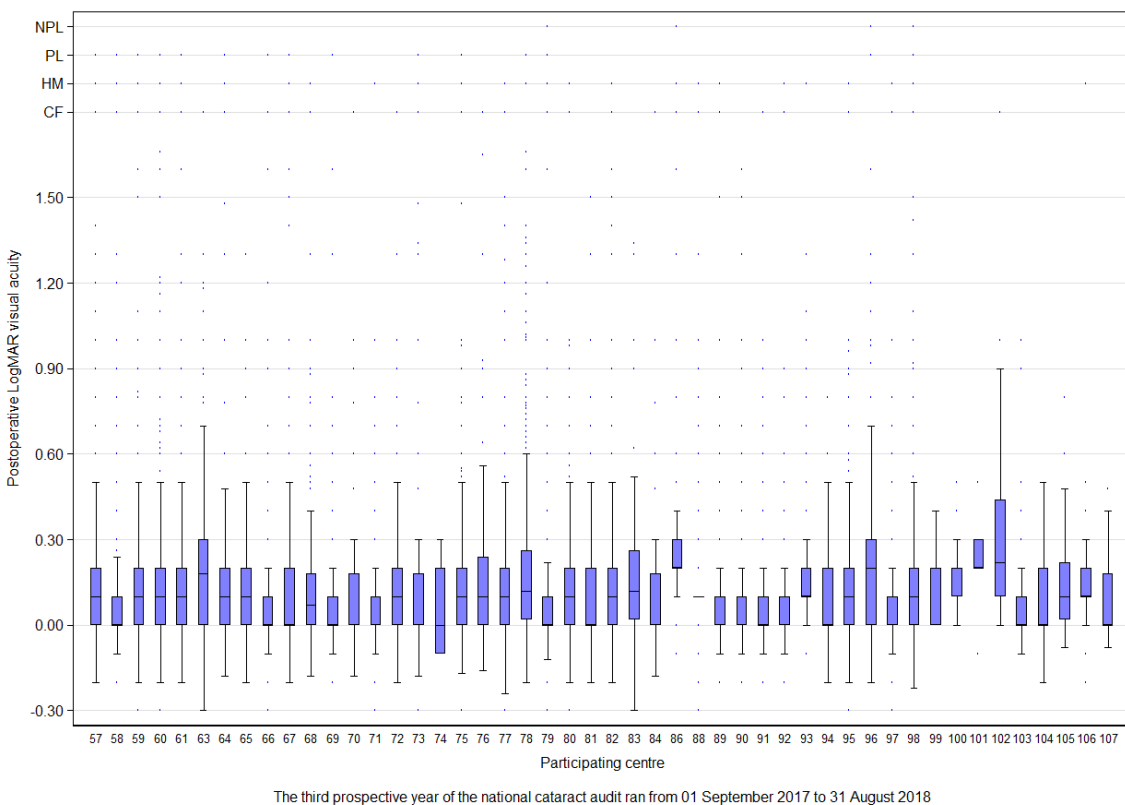


The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

**Figure 12a: Box and whisker plots of postoperative VA by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)**



**Figure 12b: Box and whisker plots of postoperative VA by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)**



8.12 Change in visual acuity

Of the 177,380 eligible cataract operations submitted to the audit performed before 30 June 2018 (excluding the centre who requested that its VA data was not reported), 127,794 (72.1%) eyes had both a preoperative VA and a postoperative VA measurement. The year 3 percentages of eyes with change in VA were 73.0%, 69.4% and 72.7% for centres who first participated in audit year 1, audit year 2 and the recently joining year 3 centres respectively. Eligible for change in VA analysis are 127,794 operations from 98 participating centres. Data completeness for this measure remains stable, averaging around 70%. The audit will continue to encourage centres to collect and record both preoperative and postoperative VA to allow for determination of this measure.

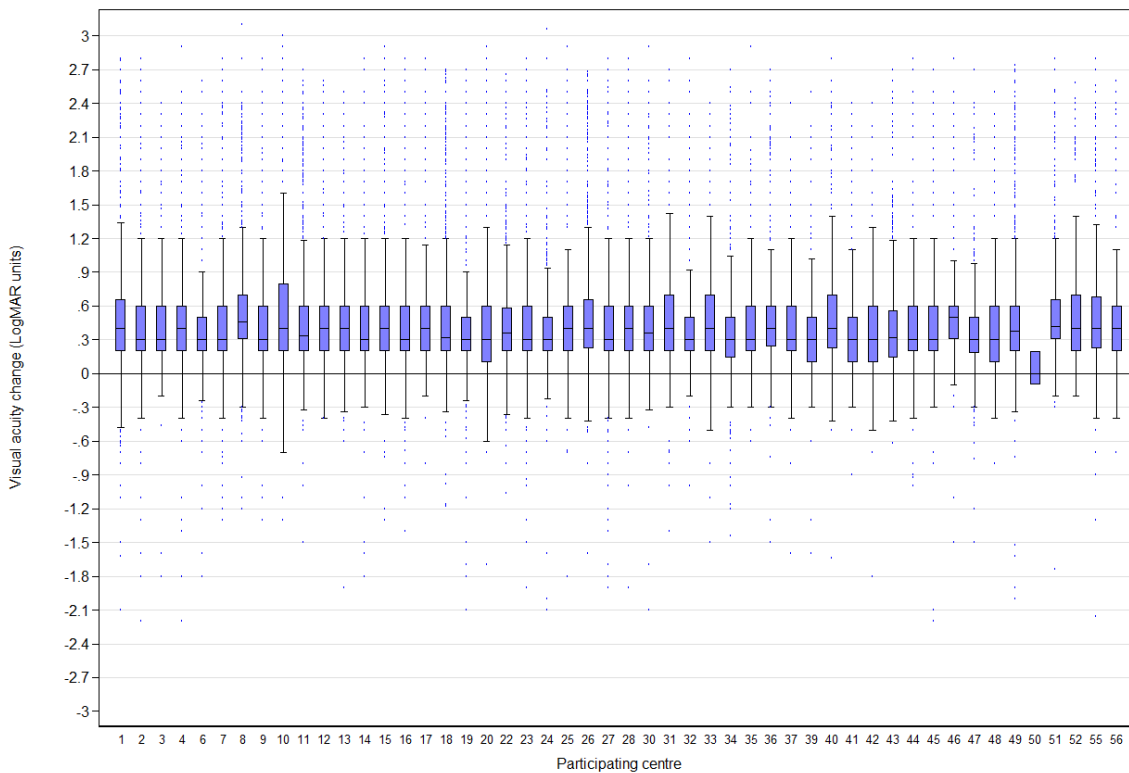
The median change in VA from baseline was a 0.36 LogMAR gain (IQR; 0.20 – 0.60 gain). A loss of >0.10 LogMAR (-1 line) was experienced by 3,505 (2.7%) eyes, a change of ± 0.10 LogMAR (± 1 line) by 11,302 (8.8%) eyes and a gain of >0.10 LogMAR (+1 line) by 112,987 (88.4%) eyes. The change in VA was fairly stable between the participating centres, Figures 13a and 13b (page 36). Overall, the majority of cataract surgery operations resulted in a significant improvement in visual acuity for patients.

75% of eyes with a preoperative VA of 0.00 LogMAR or better had a postoperative VA of 0.00 LogMAR or better and 97% of eyes with a preoperative VA of 0.30 LogMAR or better had a postoperative VA of 0.30 LogMAR or better.

Eyes that had an ocular co-pathology or experienced an intraoperative complication or PCR during surgery had worse postoperative VA than eyes that did not have any of these problems. >90% of eyes without these problems had a postoperative VA of 0.30 LogMAR (6/12 Snellen) or better, Table 4 (page 37).

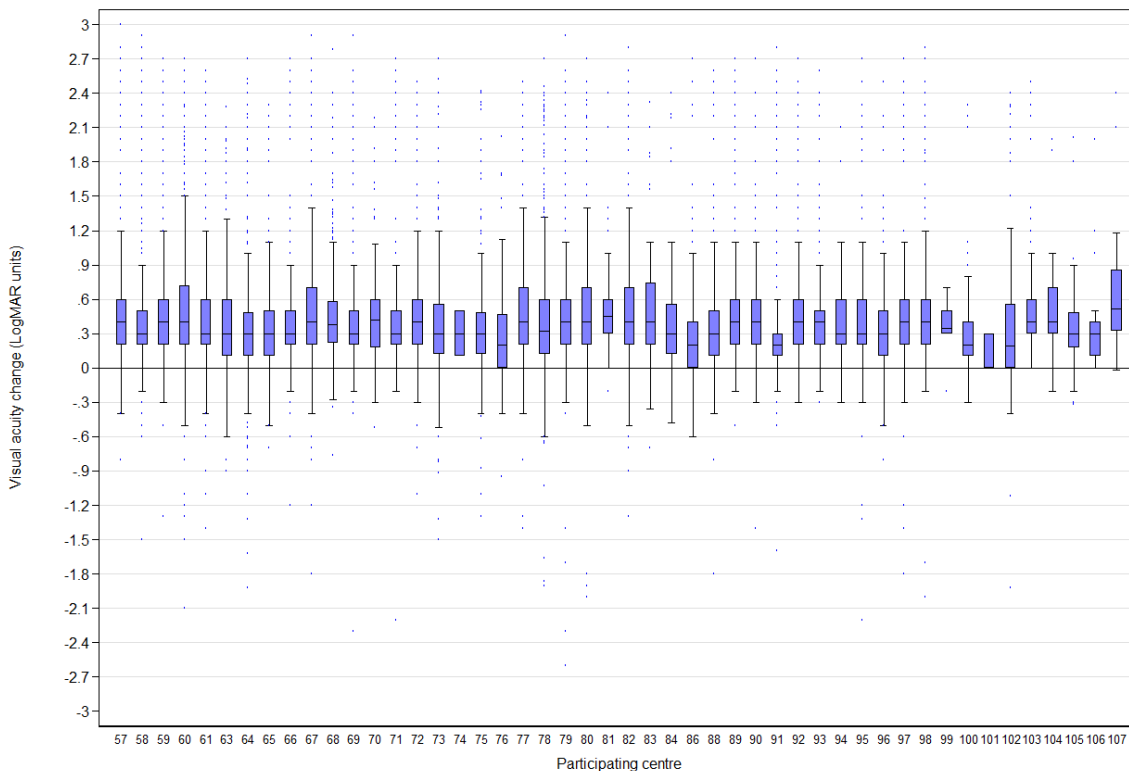
The percentage of operations from each participating centre with preoperative VA, postoperative VA and both pre- and postoperative VA data varied between participating centres, Appendix 8 (page 62).

**Figure 13a: Box and whisker plots of change in VA by participating centre
Established centres with data in the first year audit report (Centres 1 – 56)**



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

**Figure 13b: Box and whisker plots of change in VA by participating centre
Centres joining in audit year 2 (Centres 57 – 87) and audit year 3 (Centres 88 – 108)**



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

Table 4: Postoperative VA by preoperative VA, ocular co-pathology / known risk indicator and intraoperative complications

Percentages are row % (Approximate Snellen)	Postoperative LogMAR visual acuity				
	≤0.00 (6/6 or better)	≤0.18 (6/9 or better)	≤0.30 (6/12 or better)	≤0.60 (6/24 or better)	≤1.00 (6/60 or better)
All eyes (N = 127,794)	41.7	66.0	90.6	96.6	98.8
Preoperative LogMAR VA (Snellen)					
≤0.00 (N = 2,640)	75.5	88.8	98.8	99.7	99.9
≤0.18 (N = 7,655)	62.2	89.0	98.4	99.6	99.9
≤0.30 (N = 43,975)	50.8	75.7	97.6	99.6	99.9
≤0.60 (N = 91,210)	44.5	70.3	95.0	99.4	99.8
≤1.00 (N = 114,806)	43.0	67.9	92.7	98.3	99.7
Ocular co-pathology / risk indicator					
No (N = 71,659)	49.0	74.1	95.8	99.1	99.7
Yes (N = 56,135)	32.6	55.6	83.8	93.5	97.7
Intraoperative complications					
No (N = 124,457)	42.1	66.4	90.9	96.8	98.9
Yes (N = 3,337)	28.5	49.3	79.1	90.2	95.2
PCR					
No (N = 126,245)	41.9	66.3	90.7	96.7	98.9
Yes (N = 1,549)	24.9	42.6	74.8	86.8	92.6

8.13 Case complexity adjusted PCR results

Unadjusted for case complexity PCR rates for the 101 participating centres are shown in Figure 14 (page 39) and an adjusted for case complexity graph in Figure 15 (page 39). None of the participating centres were outliers in the third year of the audit. Details of the unadjusted and adjusted for case complexity PCR results for the 101 participating centres can be found in Appendix 10 (page 72), along with a case complexity index which is the overall predicted probability of PCR for all the cases reported for each centre.

8.14 Case complexity adjusted visual loss results

Of the 217,875 eligible operations, 177,380 operations were performed up to 30 June 2018 and had the potential for two months' follow-up (excluding the centre who requested their VA data was not reported). Of these, 112,690 (63.5%) operations from 67 centres were performed in centres where a preoperative and postoperative VA was recorded for at least 40% of the operations and at least 50 operations.

An unadjusted for case complexity funnel plot of VA Loss is shown in Figure 16 (page 40) and an adjusted for case complexity funnel plot in Figure 17 (page 40). Details of the unadjusted and adjusted for case complexity VA Loss results can be found in Appendix 10 (page 72), along with a case complexity index which is the overall predicted probability of VA Loss for the cases reported by each centre. Centres with <40% operations or <50 operations with both a preoperative and postoperative VA have not been reported as the estimates would be too unreliable.

The percentage rate used in the case complexity adjusted results for VA loss was lowered from 1.5% to 0.9% for audit year 2 to reflect the observed VA loss rate for consultant and career grade surgeons whose results are published in the public domain. The actual observed VA loss rate for the year 3 VA loss sample was 0.7%, which is slightly lower than the percentage rate used for complexity adjustment. These changes in the VA Loss rate are not an unexpected finding as there is variation between centres in the percentage of reported operations, percentage of operations with a preoperative VA, and percentage of operations with a postoperative VA, all of which are necessary for visual loss estimation.

Figure 14: Unadjusted for case complexity PCR funnel plot for participating centres

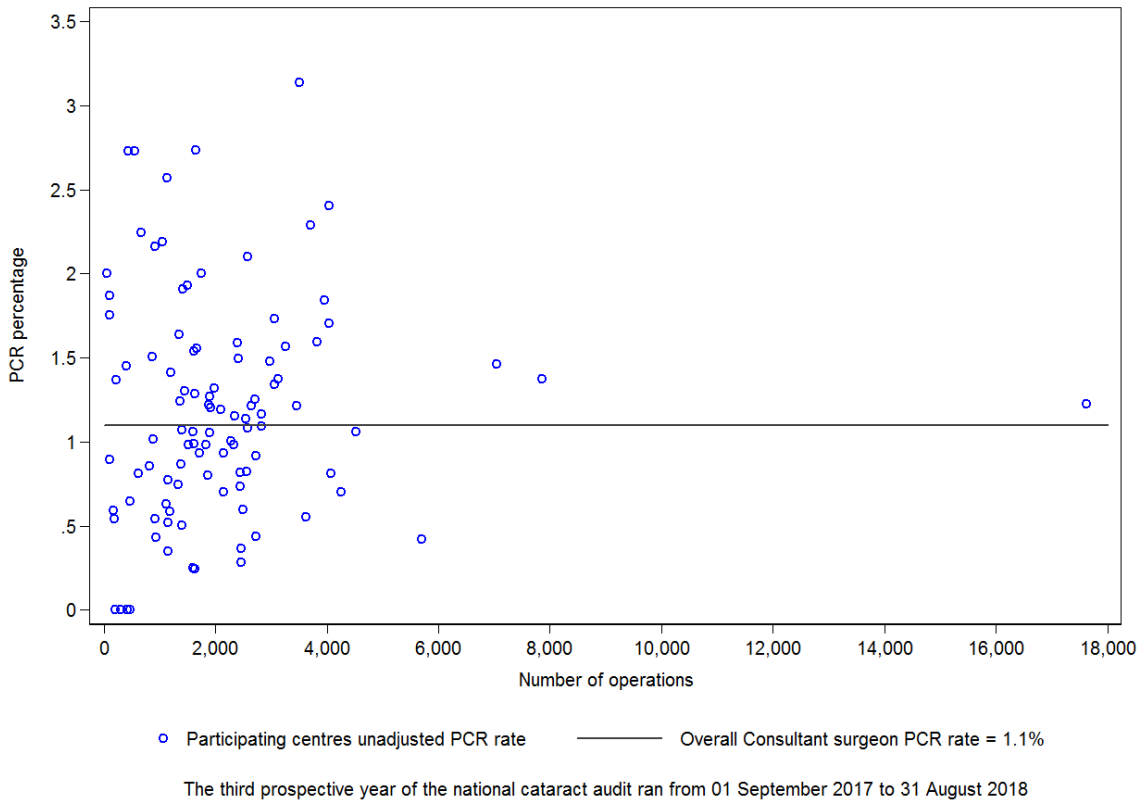
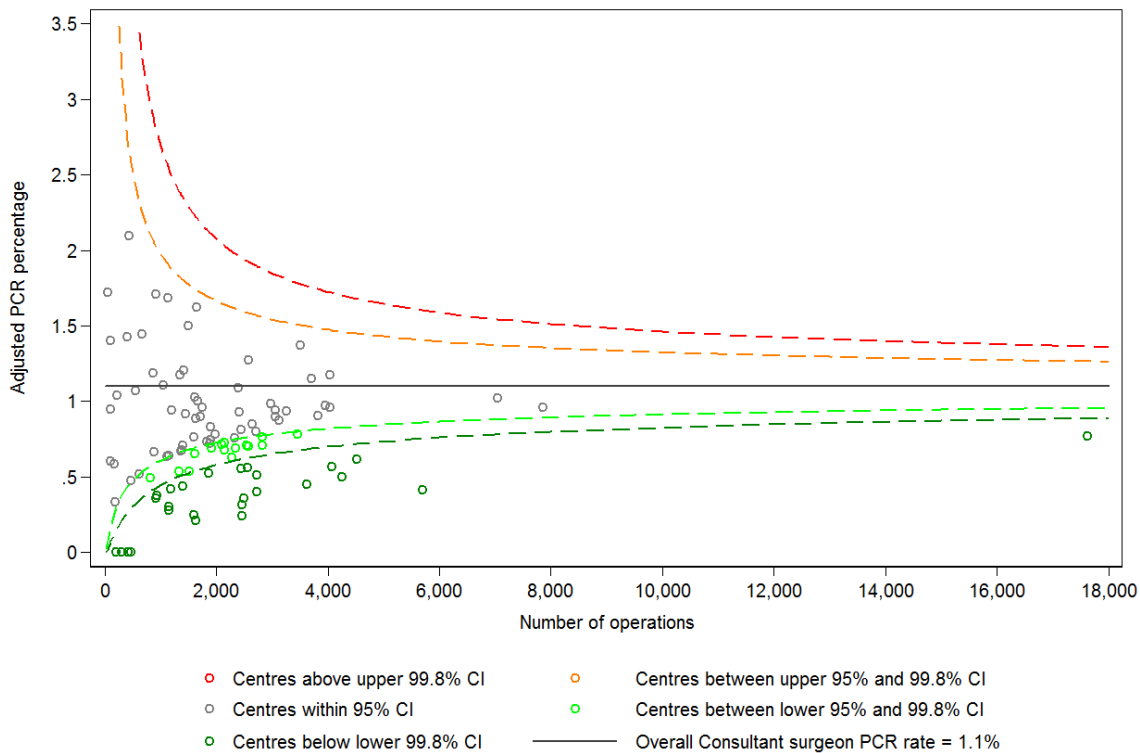
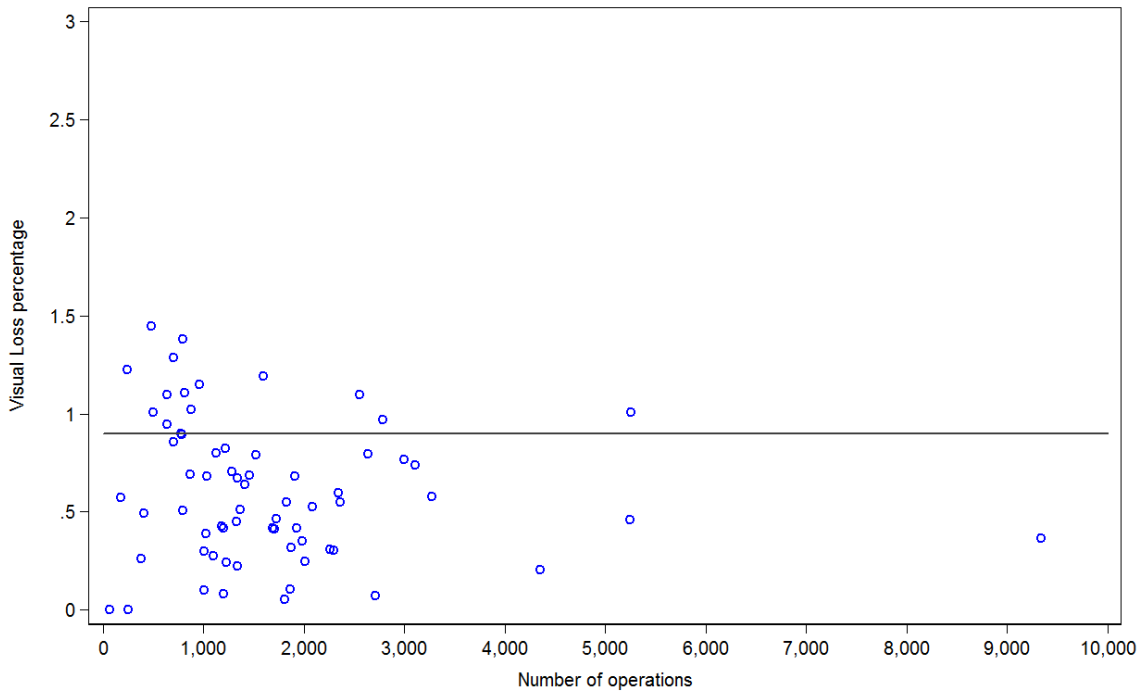


Figure 15: Adjusted for case complexity PCR funnel plot for participating centres



The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018; CI = Confidence Interval

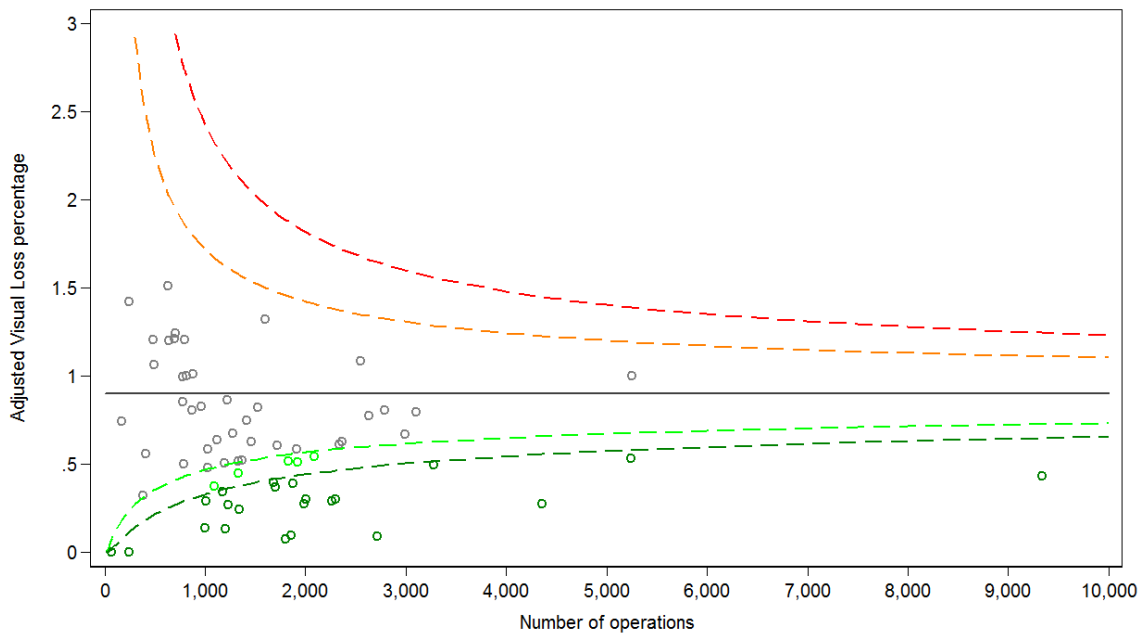
Figure 16: Unadjusted for case complexity VA Loss funnel plot for participating centres



○ Participating centres unadjusted Visual Loss rate — Overall Consultant surgeon Visual Loss rate = 0.9%

The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018

Figure 17: Adjusted for case complexity VA Loss funnel plot for participating centres



○ Centres above upper 99.8% CI ○ Centres between upper 95% and 99.8% CI
 ○ Centres within 95% CI ○ Centres between lower 95% and 99.8% CI
 ○ Centres below lower 99.8% CI — Overall Consultant surgeon VA loss = 0.9%

The third prospective year of the national cataract audit ran from 01 September 2017 to 31 August 2018; CI = Confidence Interval

9. Summary of Key Points

This third annual report from The Royal College of Ophthalmologists' National Ophthalmology Database Audit is the third to report prospectively collected data on cataract surgery for a one-year period.

1. Good progress has been made in terms of expanding the number of centres from around 30, when HQIP funding commenced, to 101 centres (83 NHS trusts and three independent sector treatment providers reporting 18 sites) in this report. Looking ahead, 109 of 119 traditional NHS cataract providers have indicated that they wish to participate in future audit cycles.
2. Named surgeon and centre results are available on the [NOD Audit website](#).
3. Established markers of surgical quality – PCR and VA Loss – are used as metrics for risk-adjusted outcomes. PCR is the most frequent intraoperative complication and is associated with increased postoperative loss of vision. VA Loss is intended to capture all eyes where there has been an adverse outcome, whether or not associated with PCR.
4. Overall, PCR and VA loss have reduced by 38% for PCR and 37% for VA Loss since 2010, Table 1 (page 7). The reduction in PCR complications in cataract surgery since 2010 equates to approximately 3,400 fewer complications annually across the NHS. Cost savings from avoided PCR complications are estimated at approximately £2 million per annum and the avoidance of VA Loss can have multiple benefits for a patient due to the importance of vision in daily life.
5. This is the third cataract audit report to include the reporting of named centre results for all submitted operations with results for named consultant surgeons, shortly to be published as part of the Clinical Outcomes Publication (COP) programme. For the 101 centres included in this report, outcomes have been found to be within the standard HQIP expectation, i.e. risk adjusted outcomes within 3SD of the consultant average. This reflects the high-quality outcomes for patients at participating centres.
6. Case ascertainment overall at most contributing centres, is high although there remain some notable exceptions (Appendix 7, page 56 and Appendix 11, page 77).
7. Data completeness of reported surgery is excellent for PCR (100%), though less so for VA, particularly for postoperative VA. This is an area where many centres could do better, with a few centres having rather poor VA data returns following surgery. The collection of this important postoperative data could be improved (Appendix 8, page 62).
8. Quality improvement drivers in this audit take the form of risk-adjusted results for surgical complications and vision loss from before to after surgery. These key measures are risk-adjusted to acknowledge case complexity and provide credit to surgeons and centres undertaking complex work. Without conscientious completion of risk indicator data, surgeons and centres run the risk of not being given credit for the complexity of the work undertaken. An important message for participants to take on board both when planning surgery and when recoding their patient notes.
9. The RCOphth NOD Audit is aligned to, and is driving, the NHS digital agenda in the move toward electronic working in ophthalmology. It has catalysed a major shift from an initial 30 or so centres to over 100 centres now able to submit data electronically. The majority of these centres collect their data as part of routine clinical activity with no additional effort required for submission of data to the audit. Furthermore, the EMR audit tools allow for real time tracking of adverse surgical events locally which facilitates monitoring of complications by centres and surgeons. In the event of an adverse signal becoming apparent, timely corrective action can be taken to avoid unnecessary harm to patients and avoid centres or surgeons being identified as outliers in national audit reports going forward.

10. Conclusions

- The current report provides assurance that delivery of NHS cataract surgery in the 101 participating centres is of good quality.
- It is encouraging to note that since 2010, when this work feeding back cataract surgical results to centres and surgeons began, there has been a 38% overall reduction in PCR complications and a 37% overall reduction in VA Loss. Progress with quality improvement thus far is providing obvious benefits to over 3,000 patients annually in terms of reduced morbidity as well as significant NHS cost savings from avoided complications of around £2 million annually.
- In the forthcoming period it is planned to further extend the audit coverage to include all traditional NHS centres, and more of the independent providers of cataract surgical care. All providers of NHS funded care are accountable to the public for the quality of services they provide. It is pleasing to note that three independent sector treatment providers with 18 sites have joined the audit and are included in the current report.
- Further outcomes are being considered in order to provide a broader, more patient focused and more easily interpreted assessment of NHS service quality in cataract care.

11. Acknowledgements

The Royal College of Ophthalmologists' National Ophthalmology Database Audit is commissioned by the Healthcare Quality Improvement Partnership (HQIP) and is part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP) and the Clinical Outcomes Publication (COP) programme.

We would like to acknowledge the support and guidance we have received from the NOD Steering Committee (see Appendix 2, page 45), for list of members) which includes professional members, ophthalmologists and optometrists, and patient and public representatives with individual lay members as well as patient support groups being represented. We are particularly grateful to our Patient and Public Representatives who have engaged fully with discussion relating to the design of the audit and the primary and secondary outcomes. Their guidance has helped us to ensure that the audit has relevance for not only the professional readership but also patients, their relatives and carers. We thank all the members of the steering committee for reviewing this report.

We also acknowledge the support of the hospitals that are participating in the prospective audit and thank our medical and non-medical colleagues for the considerable time and effort devoted to data collection. All participating centres are acknowledged in Appendix 3 (page 46) and on the RCOphth NOD Audit website www.nodaudit.org.uk

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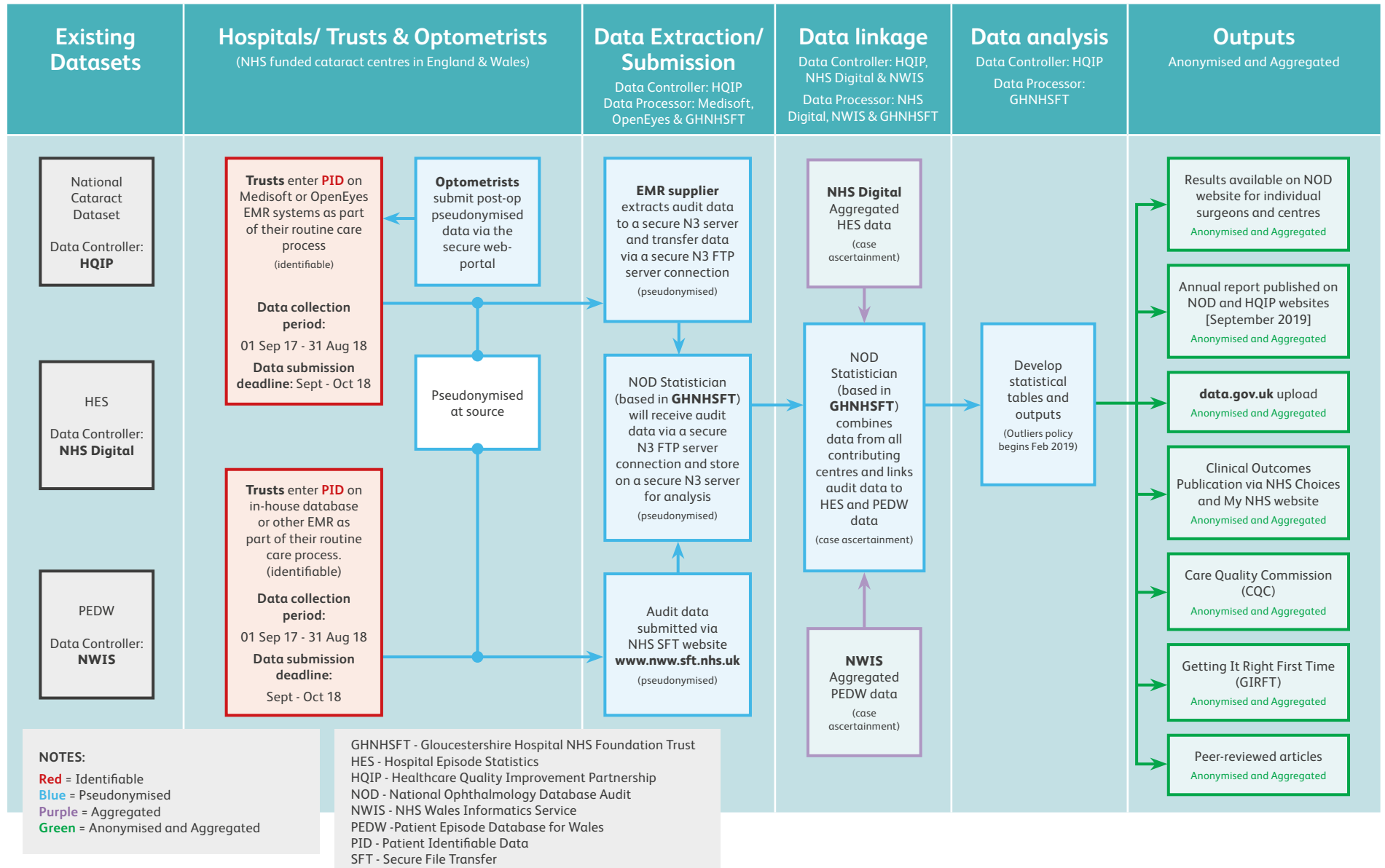
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It is with deep regret that we note the death of our friend and colleague Robert Johnston, who sadly died in September 2016. Without his inspirational vision, determination and career long commitment to quality improvement in ophthalmology this work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

Appendix 1: Data Flow

National Ophthalmology Database Audit – Data Flow



Appendix 2: National Ophthalmology Database Audit Project Steering Group Membership

Name	Designation
Andrew Frost	Cataract Representative The Royal College of Ophthalmologists
Anthony King	Cataract Representative The Royal College of Ophthalmologists
Beth Barnes	Head of Professional Support The Royal College of Ophthalmologists
Chris Rogers	Independent Statistician The University of Bristol
David Parkins	Past President The College of Optometrists
David Yorston	Cataract Representative The Royal College of Ophthalmologists
Helen Lee	Policy and Campaigns Manager Royal National Institute of Blind People
Janet Bax	Patient Representative The Patients Association
John Sparrow	Chairman Clinical Lead for RCOphth National Ophthalmology Database Audit
Kathy Evans	Chief Executive The Royal College of Ophthalmologists
Matt Broom	Lay Group Representative The Royal College of Ophthalmologists and Vision UK
Melanie Hingorani	Cataract Representative The Royal College of Ophthalmologists
Raghu Ram	Wales Representative The Royal College of Ophthalmologists
Sasha Hewitt	Associate Director of Quality and Development Healthcare Quality Improvement Partnership (HQIP)
Tasneem Hoosain	Project Manager Healthcare Quality Improvement Partnership (HQIP)

Appendix 3: Eligible cataract surgical centres in England and Wales

Category	Organisation name	Data collection system
Centres first included in the year 1 report	Aintree University Hospital NHS Foundation Trust	Medisoft
	Barking, Havering and Redbridge University Hospitals NHS Trust	Medisoft
	Barnsley Hospital NHS Foundation Trust	In-house
	Barts Health NHS Trust	Medisoft
	Bedford Hospital NHS Trust – Moorfields ¹	Medisoft
	Blackpool Teaching Hospitals NHS Foundation Trust ⁷	Medisoft
	Bradford Teaching Hospitals NHS Foundation Trust ²	Medisoft
	Calderdale and Huddersfield NHS Foundation Trust	Medisoft
	Cardiff and Vale University Health Board	Medisoft
	Chesterfield Royal Hospital NHS Foundation Trust	Medisoft
	Croydon Health Services NHS Trust – Moorfields ¹	Medisoft
	Epsom and St Helier University Hospitals NHS Trust	Medisoft
	Frimley Health NHS Foundation Trust	Medisoft
	Gloucestershire Hospitals NHS Foundation Trust	Medisoft
	Hampshire Hospitals NHS Foundation Trust	Medisoft
	Harrogate and District NHS Foundation Trust	Medisoft
	Isle of Wight NHS Trust	Medisoft
	King's College Hospital NHS Foundation Trust	Medisoft
	Leeds Teaching Hospitals NHS Trust	Medisoft
	London North West University Healthcare NHS Trust	In-house
	Manchester University NHS Foundation Trust	Medisoft
	Mid Cheshire Hospitals NHS Foundation Trust	Medisoft
	Mid Essex Hospital Services NHS Trust	Medisoft
	Moorfields Eye Hospital NHS Foundation Trust ¹	OpenEyes
	Norfolk and Norwich University Hospitals NHS Foundation Trust	Medisoft
	Northern Devon Healthcare NHS Trust	Medisoft
	North West Anglia NHS Foundation Trust ³	Medisoft
	Nottingham University Hospitals NHS Trust	Medisoft
	Oxford University Hospitals NHS Trust	Medisoft
	University Hospitals Plymouth NHS Trust	Medisoft
	Royal Berkshire NHS Foundation Trust	Medisoft
	Royal Cornwall Hospitals NHS Trust	Medisoft
	Royal Free London NHS Foundation Trust	Medisoft

Appendix 3 continued: Eligible cataract surgical centres in England and Wales

Category	Organisation name	Data collection system
Centres first included in the year 1 report	Royal United Hospital Bath NHS Trust	Medisoft
	Salisbury NHS Foundation Trust	Medisoft
	Sandwell and West Birmingham Hospitals NHS Trust	Medisoft
	Sheffield Teaching Hospitals NHS Foundation Trust	Medisoft
	Shrewsbury and Telford Hospital NHS Trust	Medisoft
	South Tees Hospitals NHS Foundation Trust	Medisoft
	South Warwickshire NHS Foundation Trust	Medisoft
	St Helens and Knowsley Hospitals NHS Trust	Medisoft
	The Hillingdon Hospitals NHS Foundation Trust	Medisoft
	The Mid Yorkshire Hospitals NHS Trust	Medisoft
	The Newcastle Upon Tyne Hospitals NHS Foundation Trust	Medisoft
	The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	Medisoft
	University Hospital Southampton NHS Foundation Trust	Medisoft
	University Hospitals Birmingham NHS Foundation Trust ⁴	Medisoft
	University Hospitals Bristol NHS Foundation Trust	Medisoft
	University Hospitals Coventry and Warwickshire NHS Trust	Medisoft
	University Hospitals of Morecambe Bay NHS Foundation Trust ⁸	Medisoft
	Warrington and Halton Hospitals NHS Foundation Trust	Medisoft
	Wirral University Teaching Hospital NHS Foundation Trust	Medisoft
	Wrightington, Wigan and Leigh NHS Foundation Trust	Medisoft
Yeovil District Hospital NHS Foundation Trust	Medisoft	
York Teaching Hospital NHS Foundation Trust	In-house	
Centres first included in the year 2 report	Bolton NHS Foundation Trust	OpenEyes
	Cambridge University Hospitals NHS Foundation Trust	EPIC
	County Durham and Darlington NHS Foundation Trust	Medisoft
	Cwm Taf University Health Board	Medisoft
	East Kent Hospitals University NHS Foundation Trust	OpenEyes
	East Lancashire Hospitals NHS Trust ⁹	Medisoft
	East Sussex Healthcare NHS Trust ⁶	Medisoft
	Great Western Hospitals NHS Foundation Trust	Medisoft
	Imperial College Healthcare NHS Trust	Medisoft
	James Paget University Hospitals NHS Foundation Trust	Medisoft

Appendix 3 continued: Eligible cataract surgical centres in England and Wales

Category	Organisation name	Data collection system
Centres first included in the year 2 report	Kingston Hospital NHS Trust	Medisoft
	Northampton General Hospital NHS Trust	In-house
	Northern Lincolnshire and Goole Hospitals NHS Foundation Trust	In-house
	Portsmouth Hospitals NHS Trust	Medisoft
	Royal Surrey County Hospital NHS Foundation Trust	In-house
	Sherwood Forest Hospitals NHS Foundation Trust	Medisoft
	Southport and Ormskirk Hospital NHS Trust	Medisoft
	SpaMedica – Bolton	Medisoft
	SpaMedica – Liverpool	Medisoft
	SpaMedica – Manchester	Medisoft
	SpaMedica – Newton-le-willows	Medisoft
	SpaMedica – Wakefield	Medisoft
	SpaMedica – Wirral	Medisoft
	Stockport NHS Foundation Trust	Medisoft
	East Suffolk and North Essex NHS Foundation Trust ⁵	Medisoft
	The Princess Alexandra Hospital NHS Trust	Medisoft
	The Rotherham NHS Foundation Trust	In-house
	Torbay and South Devon NHS Foundation Trust	Medisoft
	United Lincolnshire Hospitals NHS Trust	In-house
	Wye Valley NHS Trust	Medisoft
Centres first included in the year 3 report	Abertawe Bro Morgannwg University Health Board	OpenEyes
	Aneurin Bevan University Health Board	In-house
	Brighton and Sussex University Hospitals NHS Trust	Medisoft
	Care UK (Emersons Green NHS Treatment Centre)	Medisoft
	Care UK (North East London NHS Treatment Centre)	Medisoft
	Care UK (Peninsula NHS Treatment Centre)	Medisoft
	Care UK (Rochdale Ophthalmology Clinical Assessment and Treatment Service)	Medisoft
	Care UK (SH Devizes NHS Treatment Centre)	Medisoft
	Care UK (Shepton Mallet NHS Treatment Centre)	Medisoft
	Care UK (Southampton NHS Treatment Centre)	Medisoft
	Care UK (St. Mary's NHS Treatment Centre)	Medisoft
	Care UK (Will Adams NHS Treatment Centre)	Medisoft

Appendix 3 continued: Eligible cataract surgical centres in England and Wales

Category	Organisation name	Data collection system
Centres first included in the year 3 report	East Cheshire NHS Trust	Medisoft
	North Cumbria University Hospital NHS Trust	Medisoft
	North Middlesex University Hospital NHS Trust	Medisoft
	Royal Liverpool and Broadgreen University Hospitals NHS Trust	Medisoft
	SpaMedica (Birmingham)	Medisoft
	SpaMedica (Sheffield)	Medisoft
	St Stephens Gate Medical Practice	In-house
	Surrey and Sussex Healthcare NHS Trust	Medisoft
	The Dudley Group NHS Foundation Trust	Medisoft
Submitted data, but for <50 eligible cases	SpaMedica (Skelmersdale)	Medisoft
	Taunton and Somerset NHS Foundation Trust ¹⁰	Medisoft
	The Royal Wolverhampton NHS Trust ¹⁰	Medisoft
	Queen Victoria Hospital NHS Foundation Trust ¹⁰	Medisoft
Signed up to participate in the audit, but yet to submit data	Ashford and St Peter's Hospitals NHS Foundation Trust	TBC
	Buckinghamshire Healthcare NHS Trust	Medisoft
	City Hospitals Sunderland NHS Foundation Trust	TBC
	Dorset County Hospital NHS Foundation Trust	TBC
	George Eliot Hospital NHS Trust	Medisoft
	Guy's and St Thomas' NHS Foundation Trust	OpenEyes
	Hull and East Yorkshire Hospitals NHS Trust	TBC
	Hywel Dda University Health Board	Medisoft
	Kettering General Hospital NHS Foundation Trust	TBC
	Luton and Dunstable Hospital NHS Foundation Trust	TBC
	Maidstone and Tunbridge Wells NHS Trust	TBC
	Milton Keynes Hospital NHS Foundation Trust	TBC
	Pennine Acute Hospitals NHS Trust	TBC
	Powys Teaching Health Board	TBC
	Royal Devon and Exeter NHS Foundation Trust	TBC
	Southend University Hospital NHS Foundation Trust	TBC
	The Queen Elizabeth Hospital King's Lynn NHS Foundation Trust	TBC
	University Hospitals of Leicester NHS Trust	TBC
University Hospitals of North Midlands NHS Trust	TBC	
West Hertfordshire Hospitals NHS Trust	TBC	

Appendix 3 continued: Eligible cataract surgical centres in England and Wales

Category	Organisation name	Data collection system
Yet to sign up or declined participation	Betsi Cadwaladr University Health Board	TBC
	Chelsea and Westminster Hospital NHS Foundation Trust	TBC
	Countess of Chester Hospital NHS Foundation Trust	TBC
	Doncaster and Bassetlaw Hospitals NHS Foundation Trust	TBC
	East and North Hertfordshire NHS Trust	TBC
	Lancashire Teaching Hospitals NHS Foundation Trust	TBC
	University Hospitals of Derby and Burton NHS Foundation Trust	TBC
	West Suffolk NHS Foundation Trust	OpenEyes
	Worcestershire Acute Hospitals NHS Trust	Medisoft
	Western Sussex Hospitals NHS Trust	OpenEyes

1: Data combined and reported as Moorfields Eye Hospital NHS Foundation Trust.

2: Includes patients from Airedale NHS Foundation Trust.

3: This is a new NHS Trust formed from a merger of two participating NHS Trusts that both had data in the year 1 prospective report, these NHS Trusts were Peterborough and Stamford Hospitals NHS Foundation Trust and Hinchingbrooke Health Care NHS Trust.

4: This is a new NHS Trust formed from a merger of two participating NHS Trusts, University Hospitals Birmingham NHS Foundation Trust who have contributed to the audit since year 1 and Heart of England NHS Foundation Trust who first contributed in year 2.

5: This is a new NHS Trust formed from a merger of two NHS Trusts, The Ipswich Hospital NHS Trust who first contributed to year 2 and Colchester Hospital University NHS Foundation Trust who did not contribute data while a separate entity.

6: This centre participated in the year 1 prospective audit, but due to a data extraction problem the data from this centre could not be included in the year 1 report.

7: This centre had sufficient eligible cases for inclusion in the year 1 report, but did not submit ≥ 50 eligible operations for year 2 and did not have any data extracted for year 3.

8: This centre had sufficient eligible cases for inclusion in both the year 1 and 2 report, but did not have any data extracted for year 3 due to non-use of the centres EMR during the third year of the audit.

9: This centre had sufficient eligible cases for inclusion in the year 2 report, but did not have any data extracted for year 3 due to non-use of the centres EMR during the third year of the audit.

10: These centres have signed up to participate and have the EMR in use in their centre, but due to < 50 operations being recorded on the EMR their data was not extracted.

TBC – To be confirmed.

Appendix 4: Interpreting the graphs

Among the results there are three types of graphs. The labelling of centres is a ranking of the total number of operations contributed by each centre and calculated for the number of operations eligible in the first year the centre has sufficient operations for reporting. Centres 1 – 56 are the centres that were included in the first audit year report, where centre 1 had the most operations and centre 56 the fewest. Centres 57 – 87 are the centres first appearing in the second audit year report, where centre 57 had the most operations and centre 87 the fewest. Centres 88 – 108 are the centres first appearing in the third audit year report, where centre 88 had the most operations and centre 108 the fewest. Some centre numbers have become redundant due to mergers of NHS Trusts or one NHS Trust taking over the ophthalmology service in another NHS Trust.

- Bar charts – the horizontal axis consists of the categorical element, usually contributing centre. When bar charts are sub-divided by another category, the vertical height of each bar indicates the quantity of interest for that bar chart as read from the vertical axis. Some bar charts have horizontal dashed reference lines at specific points on the y-axis, these relate to cut-off points used in the reporting of results, for example 50%. Figures 3a and 3b (page 22) are examples of a bar chart
- Box and Whisker plots – the spread for the variable of interest is shown for each of the contributing centres. The central line is the median or ‘middle’ value. The box outlines the inter quartile range (25% and 75% centiles), and the horizontal lines above and below the inter quartile range display either the position of the furthest value or a value at a ‘reasonable’ stretch from the middle. Extreme values are the dots beyond that. Figures 4a and 4b (page 23) are examples of a Box and Whisker plot
- Funnel plots – the spread of dots on these looks like a funnel going from left to right. Each dot represents a result for a centre as read off the vertical axis (proportion or rate). The funnel effect results from increasing statistical precision as the numbers get higher going along the horizontal axis, for example Figure 14 (page 39). Some of the plots have lines on them showing what is expected. A result above the top line (three standard deviations) would be deemed unacceptably high, for example Figure 15 (page 39)

Appendix 5: Case Definitions

Eligible Cataract Surgery Criteria

- Operation performed between 01 September 2017 – 31 August 2018
- Operation performed in an NHS hospital in England or Wales
- Operation performed in adults (aged 18 or above)
- Operation included a phacoemulsification procedure
- Operative data includes a surgeon identifier and valid surgeon grade
- Operation included a ‘cataract’ indication for surgery (see the [NOD Audit website](#) for details)
- Operation without any of the ineligible indications for surgery (see [NOD Audit website](#) for details)
- Operation did not include certain operative procedures (see the [NOD Audit website](#) for details)
- 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
- Operation not for a traumatic injury
- Operations in eyes with certain current or historic diagnosis (see the [NOD Audit website](#) for details)
- A minimum of 50 eligible cataract operations for each participated centre

PCR – Posterior Capsule Rupture or Vitreous Prolapse or both

PCR was deemed to have occurred if any of the following intraoperative complications are recorded during surgery: zonule rupture – vitreous loss, PC rupture ± vitreous loss, vitreous to the section at end of surgery, vitreous loss, nuclear/ epinuclear fragment into vitreous, intraocular lens (IOL) into the vitreous, lens fragments into vitreous, or if any of the following occurred.

- The operation includes any of ‘sponge and scissors vitrectomy’, ‘automated anterior vitrectomy’ or ‘scleral fixed IOL’
- The operative procedure includes ‘fraxiom lensectomy ± IOL’ with a previous or concurrent phacoemulsification procedure
- The operative procedure includes ‘removal of retained lens fragments’ combined with a pars plana vitrectomy
- If either of ‘vitreous to the section’ or ‘vitreous in the anterior chamber’ were recorded within eight weeks of cataract surgery, this includes the day of cataract surgery in the time frame
- If there is a record of a dropped nucleus operation with 90 days of cataract surgery, this includes the day of cataract surgery in the time frame

Appendix 5 continued: Case Definitions

Visual Acuity (VA)

Visual acuity measurements are reported using the LogMAR scale with numeric substitutions of 2.10, 2.40, 2.70 and 3.00 for the ability to count fingers (CF), the ability to distinguish hand movements (HM), perception of light (PL) and no perception of light (NPL) respectively.

Preoperative VA was defined as the better of corrected distance visual acuity (CDVA) and uncorrected distance visual acuity (UDVA) recorded within a six month 'time window' prior to surgery. Where there are multiple occasions of measurement the VA measurement closest to the date of surgery is used and measurements recorded on the same day as cataract surgery are considered as preoperative measurements.

Postoperative VA was defined as the best measurement of CDVA or UDVA or pinhole visual acuity (PHVA) within the 'time window' of between eight days and six months of cataract surgery (inclusive).

Postoperative VA results were restricted to operations performed up to 30 June 2018 to allow for at least two months' potential follow-up. A further restriction was applied to the VA Loss results where only centres with <40% missing pre and postoperative VA data were included.

Visual loss was defined as:

- For eyes with a preoperative VA of <1.00 LogMAR, a loss of ≥ 0.30 LogMAR (doubling or worse of the visual angle) between the preoperative and postoperative VA measurements
- For eyes with a preoperative VA of ≥ 1.00 LogMAR and <CF, VA loss is designated if the postoperative VA is HM, PL or NPL
- For eyes with a preoperative VA of CF, VA loss is designated if the postoperative VA is PL or NPL
- For eyes with a preoperative VA of HM, VA loss is designated if the postoperative VA is NPL
- For eyes with a preoperative VA of PL or NPL no VA loss is considered

Appendix 5 continued: Case Definitions

LogMAR VA is a continuous scale which allows arithmetic operations and parametric statistical methods to be employed in the analysis. Conversion between LogMAR and approximate Snellen scores, and their interpretations, are as follows:

Approximate Snellen to LogMAR Conversion

LogMAR	Snellen	VA Interpretation
-0.1	6/5	Excellent
0.0	6/6	Very Good
0.2	6/9	Good
0.3	6/12	Reasonably Good
0.5	6/18	Moderate
0.6	6/24	Moderate Sight Impairment
0.8	6/36	Sight Impairment
0.9	6/48	Sight Impairment
1.0	6/60	UK Severe Sight Impairment
1.1	5/60	UK Severe Sight Impairment
1.2	4/60	UK Severe Sight Impairment
1.3	3/60	WHO Severe Sight Impairment
2.1	Count Fingers (CF)	WHO Severe Sight Impairment
2.4	Hand Movements (HM)	WHO Severe Sight Impairment
2.7	Perception of Light (PL)	WHO Severe Sight Impairment
3.0	No Perception of Light (NPL)	WHO Severe Sight Impairment

WHO is World Health Organisation.

Appendix 6: Glossary

Abbreviation	Description
CDVA	Corrected distance visual acuity
CF	The ability to count fingers
CI	Confidence Interval
COP	Clinical Outcomes Publication
EMR	Electronic Medical Record
HM	The ability to distinguish hand movements
HQIP	Healthcare Quality Improvement Partnership
IMD	Index of Multiple Deprivation is the measure of relative deprivation for small areas in England
IOL	Intraocular lens is an artificial lens generally inserted into the capsule of the lens after cataract removal
IQR	Inter Quartile Range
NCAPOP	National Clinical Audit and Patient Outcomes Programme
NHS	National Health Service
NOD	National Ophthalmology Database
NPL	No perception of light
NWIS	National Wales Information Service
PCR	Posterior capsule rupture is a break in the posterior capsule of the lens, usually as a complication of cataract surgery. It may allow vitreous to move forward into the anterior chamber of the eye
PHVA	Pinhole visual acuity. The pinhole is an eye shield with several small holes which allow light rays to reach the retina without the interference of optical problems of the eye. It is used to test visual acuity
PL	Perception light
RCOphth	The Royal College of Ophthalmologists
UDVA	Uncorrected distance visual acuity
UK	United Kingdom
VA	Visual acuity is the sharpness of vision, measured by the ability to distinguish letters or numbers at a given distance according to a fixed standard. We have reported VA using the LogMAR scale (base 10 Log of the reciprocal of the visual angle). A normal LogMAR VA is 0.0 and the number increases as vision gets worse. LogMAR=0.3 would be at the boundary for driving a car and 1.0 would be at the level of registrable severe sight impairment. A postoperative VA of 0.3 or better is often used as a measure of a favourable outcome from surgery
Yes / No	Yes or No

Appendix 7: The number of eligible operations and the proportion performed by each grade of surgeon

Appendix 7 table: The number of eligible operations with the percentage performed by each grade of surgeon for the participating centre

						The percentage of operations performed by			
Centre name	Centre number	Date of first cataract operation during the audit period	Number of eligible operations	Estimate of cases submitted to the audit (%)*	Number of surgeons	Consultant surgeons	Career grade non-consultant surgeons	More experienced trainee surgeons	Less experienced trainee surgeons
Moorfields Eye Hospital NHS Foundation Trust	1	01/09/2017	17,621	96.2	223	49.5	6.9	42.7	0.9
The Newcastle upon Tyne Hospitals NHS Foundation Trust	2	01/09/2017	7,863	98.4	60	67.6	5.3	25.4	1.7
Norfolk and Norwich University Hospitals NHS Foundation Trust	3	01/09/2017	4,263	99.1	32	62.6	17.0	20.4	0.0
Leeds Teaching Hospitals NHS Trust	4	01/09/2017	4,520	98.6	50	57.0	2.7	22.4	17.8
York Teaching Hospital NHS Foundation Trust	5	01/09/2017	4,067	100.0	32	84.6	0.0	11.8	3.7
Oxford University Hospitals NHS Foundation Trust	6	01/09/2017	3,717	98.8	43	36.7	14.9	47.7	0.8
University Hospitals Bristol NHS Foundation Trust	7	01/09/2017	3,958	99.2	64	55.4	0.0	44.6	0.0
Gloucestershire Hospitals NHS Foundation Trust	8	01/09/2017	3,453	100.0	29	64.1	15.2	15.5	5.2
Sheffield Teaching Hospitals NHS Foundation Trust	9	01/09/2017	3,260	100.0	44	62.2	8.8	15.9	13.1
Sandwell and West Birmingham Hospitals NHS Trust	10	01/09/2017	4,038	96.5	78	45.2	9.2	41.5	4.1
University Hospital Southampton NHS Foundation Trust	11	01/09/2017	2,978	87.9	56	70.9	2.1	25.5	1.5
Royal Berkshire NHS Foundation Trust	12	01/09/2017	2,585	56.3	33	60.2	1.4	32.1	6.2
Calderdale and Huddersfield NHS Foundation Trust	13	01/09/2017	2,148	98.9	25	77.5	8.8	13.1	0.7
Mid Cheshire Hospitals NHS Foundation Trust	14	01/09/2017	2,833	100.0	26	58.2	28.3	10.8	2.6
The Mid Yorkshire Hospitals NHS Trust	15	01/09/2017	1,975	99.6	15	64.4	32.1	0.3	3.2
Cardiff & Vale University LHB	16	04/09/2017	2,412	96.4	34	61.8	0.0	38.2	0.0
Epsom and St Helier University Hospitals NHS Trust	17	01/09/2017	2,573	98.9	27	62.3	0.0	31.3	6.4
Barts Health NHS Trust	18	01/09/2017	3,819	99.3	39	56.6	3.0	28.1	12.3
Frimley Health NHS Foundation Trust	19	01/09/2017	3,130	98.7	30	53.8	9.5	24.9	11.8

Appendix 7 continued: The number of eligible operations and the proportion performed by each grade of surgeon

Appendix 7 table continued: The number of eligible operations with the percentage performed by each grade of surgeon for the participating centre

						The percentage of operations performed by			
Centre name	Centre number	Date of first cataract operation during the audit period	Number of eligible operations	Estimate of cases submitted to the audit (%)*	Number of surgeons	Consultant surgeons	Career grade non-consultant surgeons	More experienced trainee surgeons	Less experienced trainee surgeons
Bradford Teaching Hospitals NHS Foundation Trust	20	01/09/2017	2,094	98.5	33	72.1	0.0	24.6	3.2
University Hospitals Plymouth NHS Trust	22	04/09/2017	2,504	94.9	19	43.2	24.2	30.2	2.5
University Hospitals Birmingham NHS Foundation Trust	23	01/09/2017	4,045	99.2	62	64.5	5.1	29.8	0.6
Hampshire Hospitals NHS Foundation Trust	24	01/09/2017	2,334	77.0	21	86.1	0.8	13.0	0.0
Royal Cornwall Hospitals NHS Trust	25	01/09/2017	1,671	98.2	17	68.3	19.9	11.1	0.7
Manchester University NHS Foundation Trust	26	05/09/2017	3,056	56.1	65	41.6	8.7	42.1	7.7
King's College Hospital NHS Foundation Trust	27	01/09/2017	7,041	95.4	72	75.1	6.2	15.0	3.7
Shrewsbury and Telford Hospital NHS Trust	28	01/09/2017	2,837	95.9	34	79.0	8.3	7.5	5.2
The Hillingdon Hospitals NHS Foundation Trust	30	01/09/2017	1,750	100.0	23	34.2	8.3	37.8	19.7
Aintree University Hospital NHS Foundation Trust	31	05/09/2017	1,129	98.8	23	68.6	0.0	30.5	0.9
Royal United Hospitals Bath NHS Foundation Trust	32	01/09/2017	1,523	100.0	13	55.4	8.8	14.4	21.3
Chesterfield Royal Hospital NHS Foundation Trust	33	01/09/2017	1,644	98.9	13	86.1	13.9	0.0	0.0
Mid Essex Hospital Services NHS Trust	34	01/09/2017	1,501	99.8	15	72.3	23.3	4.2	0.2
Harrogate and District NHS Foundation Trust	35	01/09/2017	1,158	99.8	12	50.8	25.0	5.7	18.5
North West Anglia NHS Foundation Trust	36	01/09/2017	2,709	99.7	24	73.9	8.2	15.6	2.3
Northern Devon Healthcare NHS Trust	37	01/09/2017	1,400	100.0	10	56.6	15.1	28.3	0.0
Wirral University Teaching Hospital NHS Foundation Trust	39	04/09/2017	922	98.6	17	73.1	0.1	24.6	2.2
South Warwickshire NHS Foundation Trust	40	04/09/2017	1,872	99.7	8	69.7	30.3	0.0	0.0
Isle of Wight NHS Trust	41	04/09/2017	1,342	93.8	9	52.8	46.9	0.2	0.0

Appendix 7 continued: The number of eligible operations and the proportion performed by each grade of surgeon

Appendix 7 table continued: The number of eligible operations with the percentage performed by each grade of surgeon for the participating centre

						The percentage of operations performed by			
Centre name	Centre number	Date of first cataract operation during the audit period	Number of eligible operations	Estimate of cases submitted to the audit (%)*	Number of surgeons	Consultant surgeons	Career grade non-consultant surgeons	More experienced trainee surgeons	Less experienced trainee surgeons
St Helens and Knowsley Teaching Hospitals NHS Trust	42	01/09/2017	1,459	74.0	14	70.9	11.3	12.2	5.6
Wrightington, Wigan and Leigh NHS Foundation Trust	43	05/09/2017	1,160	99.1	6	88.9	11.1	0.0	0.0
Warrington and Halton Hospitals NHS Foundation Trust	44	01/09/2017	1,193	81.3	17	76.8	3.9	9.0	10.4
South Tees Hospitals NHS Foundation Trust	45	01/09/2017	2,342	76.5	25	56.6	0.0	43.4	0.0
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	46	01/09/2017	2,559	64.3	24	78.4	0.0	13.8	7.8
Barking, Havering and Redbridge University Hospitals NHS Trust	47	01/09/2017	1,623	73.2	18	80.8	1.7	14.8	2.8
Royal Free London NHS Foundation Trust	48	04/09/2017	1,894	47.6	37	59.1	8.1	22.7	10.1
University Hospitals Coventry and Warwickshire NHS Trust	49	01/09/2017	2,726	94.7	43	38.6	40.0	13.5	7.9
Barnsley Hospital NHS Foundation Trust	50	02/11/2017	169	13.3	2	100.0	0.0	0.0	0.0
Salisbury NHS Foundation Trust	51	04/09/2017	1,205	99.4	13	86.1	0.1	13.7	0.2
London North West University Healthcare NHS Trust	52	05/09/2017	549	89.8	14	36.4	0.0	43.0	20.6
Nottingham University Hospitals NHS Trust	55	04/09/2017	1,889	57.8	46	52.6	0.4	44.8	2.2
Yeovil District Hospital NHS Foundation Trust	56	04/09/2017	924	100.0	7	97.9	2.1	0.0	0.0
SpaMedica (Manchester)	57	04/09/2017	3,620	100.0	12	100.0	0.0	0.0	0.0
SpaMedica (Wakefield)	58	02/09/2017	5,708	100.0	13	100.0	0.0	0.0	0.0
East Sussex Healthcare NHS Trust	59	01/09/2017	3,054	100.0	21	74.4	10.5	8.8	6.3
Imperial College Healthcare NHS Trust	60	01/09/2017	3,506	98.1	73	42.7	0.0	40.2	17.1
Portsmouth Hospitals NHS Trust	61	01/09/2017	2,393	97.4	29	71.7	4.6	21.5	2.2
Cambridge University Hospitals NHS Foundation Trust	63	01/09/2017	2,289	97.0	35	45.3	0.0	54.7	0.0

Appendix 7 continued: The number of eligible operations and the proportion performed by each grade of surgeon

Appendix 7 table continued: The number of eligible operations with the percentage performed by each grade of surgeon for the participating centre

						The percentage of operations performed by			
Centre name	Centre number	Date of first cataract operation during the audit period	Number of eligible operations	Estimate of cases submitted to the audit (%)*	Number of surgeons	Consultant surgeons	Career grade non-consultant surgeons	More experienced trainee surgeons	Less experienced trainee surgeons
East Kent Hospitals University NHS Foundation Trust	64	01/09/2017	2,553	93.9	24	46.0	41.6	12.3	0.0
East Suffolk and North Essex NHS Foundation Trust	65	01/09/2017	2,638	44.5	14	69.9	1.2	28.6	0.3
SpaMedica (Wirral)	66	06/09/2017	2,472	100.0	9	100.0	0.0	0.0	0.0
County Durham and Darlington NHS Foundation Trust	67	04/09/2017	1,615	98.3	20	67.9	14.1	12.6	5.4
United Lincolnshire Hospitals NHS Trust	68	01/09/2017	1,635	47.0	14	79.6	0.0	20.4	0.0
SpaMedica (Newton-le-Willows)	69	04/09/2017	1,634	100.0	5	100.0	0.0	0.0	0.0
Northampton General Hospital NHS Trust	70	01/09/2017	1,892	82.4	23	69.5	16.0	14.5	0.0
SpaMedica (Liverpool)	71	01/09/2017	1,396	100.0	6	100.0	0.0	0.0	0.0
James Paget University Hospitals NHS Foundation Trust	72	01/09/2017	1,829	90.1	14	78.0	10.2	9.9	1.9
Bolton NHS Foundation Trust	73	01/09/2017	1,908	99.9	19	42.3	33.9	17.1	6.6
Kingston Hospital NHS Foundation Trust	74	01/09/2017	1,344	66.2	18	72.5	11.2	11.2	5.1
Northern Lincolnshire and Goole NHS Foundation Trust	75	01/09/2017	862	34.1	18	66.1	17.3	16.6	0.0
The Rotherham NHS Foundation Trust	76	12/12/2017	615	61.1	8	89.8	2.4	7.8	0.0
Torbay and South Devon NHS Foundation Trust	77	04/09/2017	1,413	98.2	24	64.7	11.7	18.7	5.0
Great Western Hospitals NHS Foundation Trust	78	01/09/2017	1,605	86.1	19	82.0	6.4	11.4	0.2
SpaMedica (Bolton)	79	05/09/2017	2,737	100.0	11	100.0	0.0	0.0	0.0
The Princess Alexandra Hospital NHS Trust	80	01/09/2017	668	92.8	10	74.4	9.0	16.6	0.0
Wye Valley NHS Trust	81	06/09/2017	112	5.6	3	83.0	0.0	17.0	0.0
Cwm Taf University LHB	82	01/09/2017	1,370	100.0	16	59.4	25.8	11.8	3.0

Appendix 7 continued: The number of eligible operations and the proportion performed by each grade of surgeon

Appendix 7 table continued: The number of eligible operations with the percentage performed by each grade of surgeon for the participating centre

						The percentage of operations performed by			
Centre name	Centre number	Date of first cataract operation during the audit period	Number of eligible operations	Estimate of cases submitted to the audit (%)*	Number of surgeons	Consultant surgeons	Career grade non-consultant surgeons	More experienced trainee surgeons	Less experienced trainee surgeons
Sherwood Forest Hospitals NHS Foundation Trust	83	11/09/2017	1,150	63.0	11	73.8	11.8	14.3	0.1
Royal Surrey County Hospital NHS Foundation Trust	84	01/09/2017	310	17.9	11	94.5	1.9	3.5	0.0
Southport and Ormskirk Hospital NHS Trust	86	01/09/2017	818	90.8	10	37.8	52.1	0.0	10.1
Stockport NHS Foundation Trust	87	05/09/2017	107	6.1	6	72.9	19.6	0.0	7.5
Care UK (Shepton Mallet NHS Treatment Centre)	88	04/09/2017	2,466	100.0	3	100.0	0.0	0.0	0.0
Care UK (St Marys NHS Treatment Centre)	89	01/09/2017	2,455	99.8	9	100.0	0.0	0.0	0.0
Care UK (Emersons Green NHS Treatment Centre)	90	01/09/2017	2,446	100.0	2	100.0	0.0	0.0	0.0
Care UK (Will Adams NHS Treatment Centre)	91	01/09/2017	2,142	100.0	8	100.0	0.0	0.0	0.0
SpaMedica (Sheffield)	92	07/11/2017	1,718	100.0	11	100.0	0.0	0.0	0.0
Care UK (Peninsula NHS Treatment Centre)	93	02/09/2017	1,604	100.0	3	100.0	0.0	0.0	0.0
North Cumbria University Hospitals NHS Trust	94	05/09/2017	1,385	53.8	11	71.8	24.9	0.0	3.3
Care UK (Rochdale Ophthalmology Clinical Assessment and Treatment Centre)	95	04/09/2017	1,115	100.0	6	100.0	0.0	0.0	0.0
Royal Liverpool and Broadgreen University Hospitals NHS Trust	96	04/09/2017	1,051	37.7	39	39.3	3.9	50.9	5.9
Care UK (North East London NHS Treatment Centre)	97	04/09/2017	930	98.5	4	100.0	0.0	0.0	0.0
North Middlesex University Hospital NHS Trust	98	01/11/2017	887	88.0	11	73.5	0.5	15.4	10.6
Brighton and Sussex University Hospitals NHS Trust	99	24/10/2017	466	16.1	21	60.7	7.3	32.0	0.0
Care UK (SH Devides NHS Treatment Centre)	100	11/09/2017	470	100.0	1	100.0	0.0	0.0	0.0
Surrey and Sussex Healthcare NHS Trust	101	12/09/2017	440	19.6	5	85.0	0.0	5.0	10.0
Aneurin Bevan University HB	102	28/02/2018	427	36.7	20	86.2	4.7	4.4	4.7

Appendix 7 continued: The number of eligible operations and the proportion performed by each grade of surgeon

Appendix 7 table continued: The number of eligible operations with the percentage performed by each grade of surgeon for the participating centre

						The percentage of operations performed by			
Centre name	Centre number	Date of first cataract operation during the audit period	Number of eligible operations	Estimate of cases submitted to the audit (%)*	Number of surgeons	Consultant surgeons	Career grade non-consultant surgeons	More experienced trainee surgeons	Less experienced trainee surgeons
Care UK (Southampton NHS Treatment Centre)	103	14/09/2017	413	34.7	3	100.0	0.0	0.0	0.0
SpaMedica (Birmingham)	104	11/06/2018	219	99.1	4	100.0	0.0	0.0	0.0
St Stephens Gate Medical Practice	105	14/11/2017	202	**	2	100.0	0.0	0.0	0.0
The Dudley Group NHS Foundation Trust	106	12/02/2018	185	24.2	12	76.2	0.0	22.2	1.6
Abertawe Bro Morgannwg University Health Board	107	12/10/2017	114	2.5	9	55.3	5.3	39.5	0.0
East Cheshire NHS Trust	108	08/08/2018	50	52.7	5	90.0	0.0	10.0	0.0
Overall for all centres	N/A	01/09/2017	217,875	84.5	1,992	68.1	8.2	20.1	3.6

*The estimate of the proportion of cases submitted to the audit is derived from the number of completed cataract operations supplied to NHS Digital or NWIS for the audit period. This estimation uses a pro rata calculation for a centre's denominator where the proportion of time during the audit cycle that a centre had been recording cataract operations was multiplied by the number of cataract operations supplied to NHS Digital or NWIS. The numerator was the number of operations a centre had supplied to the audit. Centres that had more operations submitted to the national audit than in the NHS Digital or NWIS data were all assumed to have a complete submission rate as the actual rate was not possible to estimate.

**1 centre had no data in the NHS Digital data.

Appendix 8: Preoperative, postoperative and change in VA percentages

Appendix 8 table: The percentage of eyes with preoperative VA, postoperative VA and change in VA data for participating centres in the audit

Centre name	Centre number	Estimate of cases submitted to the audit (%)*	Number of eligible operations**	% with preoperative VA data	Number of operations eligible for postoperative VA results	% with postoperative VA data	% with change in VA data
Moorfields Eye Hospital NHS Foundation Trust	1	96.2	17,621	73.6	14,362	71.8	65.0
The Newcastle upon Tyne Hospitals NHS Foundation Trust	2	98.4	7,863	94.2	6,610	83.5	79.4
Norfolk and Norwich University Hospitals NHS Foundation Trust	3	99.1	4,263	94.5	3,467	14.0	13.6
Leeds Teaching Hospitals NHS Trust	4	98.6	4,520	97.2	3,769	89.4	86.9
Oxford University Hospitals NHS Foundation Trust	6	98.8	3,717	92.4	3,107	31.1	29.1
University Hospitals Bristol NHS Foundation Trust	7	99.2	3,958	98.3	3,209	88.0	86.8
Gloucestershire Hospitals NHS Foundation Trust	8	100.0	3,453	92.8	2,985	82.7	78.4
Sheffield Teaching Hospitals NHS Foundation Trust	9	100.0	3,260	97.6	2,770	97.2	95.1
Sandwell and West Birmingham Hospitals NHS Trust	10	96.5	4,038	94.2	3,560	92.4	87.2
University Hospital Southampton NHS Foundation Trust	11	87.9	2,978	96.4	2,493	94.2	90.6
Royal Berkshire NHS Foundation Trust	12	56.3	2,585	97.6	2,095	97.1	95.8
Calderdale and Huddersfield NHS Foundation Trust	13	98.9	2,148	97.1	1,823	82.7	80.1
Mid Cheshire Hospitals NHS Foundation Trust	14	100.0	2,833	93.7	2,369	69.3	64.2
The Mid Yorkshire Hospitals NHS Trust	15	99.6	1,975	98.5	1,702	79.5	78.4
Cardiff & Vale University LHB	16	96.4	2,412	89.6	2,165	50.2	45.5
Epsom and St Helier University Hospitals NHS Trust	17	98.9	2,573	96.9	2,122	89.8	87.7
Barts Health NHS Trust	18	99.3	3,819	90.0	3,132	83.5	75.5
Frimley Health NHS Foundation Trust	19	98.7	3,130	97.2	2,589	59.3	57.4
Bradford Teaching Hospitals NHS Foundation Trust	20	98.5	2,094	94.5	1,721	62.9	59.3
University Hospitals Plymouth NHS Trust	22	94.9	2,504	98.8	2,157	89.7	88.6
University Hospitals Birmingham NHS Foundation Trust	23	99.2	4,045	96.8	3,215	96.2	93.1
Hampshire Hospitals NHS Foundation Trust	24	77.0	2,334	95.2	1,989	72.4	68.8

Appendix 8 table continued: The percentage of eyes with preoperative VA, postoperative VA and change in VA data for participating centres in the audit

Centre name	Centre number	Estimate of cases submitted to the audit (%)*	Number of eligible operations**	% with preoperative VA data	Number of operations eligible for postoperative VA results	% with postoperative VA data	% with change in VA data
Royal Cornwall Hospitals NHS Trust	25	98.2	1,671	90.5	1,422	84.5	79.0
Manchester University NHS Foundation Trust	26	56.1	3,056	97.8	2,537	92.6	90.5
King's College Hospital NHS Foundation Trust	27	95.4	7,041	96.4	5,875	92.7	89.4
Shrewsbury and Telford Hospital NHS Trust	28	95.9	2,837	84.7	2,323	80.8	68.7
The Hillingdon Hospitals NHS Foundation Trust	30	100.0	1,750	97.1	1,431	86.0	83.6
Aintree University Hospital NHS Foundation Trust	31	98.8	1,129	93.3	924	94.4	88.1
Royal United Hospitals Bath NHS Foundation Trust	32	100.0	1,523	89.0	1,304	67.3	61.0
Chesterfield Royal Hospital NHS Foundation Trust	33	98.9	1,644	96.3	1,378	96.4	92.8
Mid Essex Hospital Services NHS Trust	34	99.8	1,501	87.0	1,236	61.9	55.1
Harrogate and District NHS Foundation Trust	35	99.8	1,158	95.9	941	86.0	83.0
North West Anglia NHS Foundation Trust	36	99.7	2,709	97.5	2,240	77.8	76.0
Northern Devon Healthcare NHS Trust	37	100.0	1,400	98.6	1,160	89.1	88.8
Wirral University Teaching Hospital NHS Foundation Trust	39	98.6	922	80.2	769	79.3	62.9
South Warwickshire NHS Foundation Trust	40	99.7	1,872	97.4	1,606	75.1	73.3
Isle of Wight NHS Trust	41	93.8	1,342	91.6	1,107	86.5	79.6
St Helens and Knowsley Teaching Hospitals NHS Trust	42	74.0	1,459	98.1	1,305	58.2	57.0
Wrightington, Wigan and Leigh NHS Foundation Trust	43	99.1	1,160	99.4	942	93.0	92.4
Warrington and Halton Hospitals NHS Foundation Trust	44	81.3	1,193	96.7	954	84.0	81.8
South Tees Hospitals NHS Foundation Trust	45	76.5	2,342	96.4	1,913	55.9	54.0
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	46	64.3	2,559	92.3	2,129	58.6	54.9
Barking, Havering and Redbridge University Hospitals NHS Trust	47	73.2	1,623	86.9	1,303	51.7	45.3
Royal Free London NHS Foundation Trust	48	47.6	1,894	96.0	1,564	25.3	24.6
University Hospitals Coventry and Warwickshire NHS Trust	49	94.7	2,726	96.0	2,301	94.3	90.6
Barnsley Hospital NHS Foundation Trust	50	13.3	169	11.2	134	9.0	2.2

Appendix 8 table continued: The percentage of eyes with preoperative VA, postoperative VA and change in VA data for participating centres in the audit

Centre name	Centre number	Estimate of cases submitted to the audit (%)*	Number of eligible operations**	% with preoperative VA data	Number of operations eligible for postoperative VA results	% with postoperative VA data	% with change in VA data
Salisbury NHS Foundation Trust	51	99.4	1,205	99.4	1,027	98.3	97.9
London North West University Healthcare NHS Trust	52	89.8	549	73.2	461	67.0	52.1
Nottingham University Hospitals NHS Trust	55	57.8	1,889	87.9	1,564	88.2	77.8
Yeovil District Hospital NHS Foundation Trust	56	100.0	924	100.0	805	98.1	98.1
SpaMedica (Manchester)	57	100.0	3,620	99.8	3,053	88.9	88.8
SpaMedica (Wakefield)	58	100.0	5,708	99.9	4,849	89.9	89.8
East Sussex Healthcare NHS Trust	59	100.0	3,054	89.4	2,579	71.5	65.4
Imperial College Healthcare NHS Trust	60	98.1	3,506	92.9	2,929	93.9	87.1
Portsmouth Hospitals NHS Trust	61	97.4	2,393	96.6	2,016	93.9	90.6
Cambridge University Hospitals NHS Foundation Trust	63	97.0	2,289	86.9	1,938	78.6	69.1
East Kent Hospitals University NHS Foundation Trust	64	93.9	2,553	85.5	2,053	57.6	49.8
East Suffolk and North Essex NHS Foundation Trust	65	44.5	2,638	94.4	2,238	22.7	21.9
SpaMedica (Wirral)	66	100.0	2,472	99.9	2,025	92.5	92.5
County Durham and Darlington NHS Foundation Trust	67	98.3	1,615	92.4	1,447	97.3	92.0
United Lincolnshire Hospitals NHS Trust	68	47.0	1,635	94.8	1,372	57.1	54.0
SpaMedica (Newton-le-Willows)	69	100.0	1,634	99.9	1,367	90.1	90.0
Northampton General Hospital NHS Trust	70	82.4	1,892	70.7	1,594	24.7	17.6
SpaMedica (Liverpool)	71	100.0	1,396	100.0	1,143	87.6	87.6
James Paget University Hospitals NHS Foundation Trust	72	90.1	1,829	88.4	1,483	74.7	69.0
Bolton NHS Foundation Trust	73	99.9	1,908	99.4	1,598	89.0	88.4
Kingston Hospital NHS Foundation Trust	74	66.2	1,344	26.0	1,152	0.6	0.2
Northern Lincolnshire and Goole NHS Foundation Trust	75	34.1	862	76.2	861	96.6	74.2
The Rotherham NHS Foundation Trust	76	61.1	615	95.8	483	47.6	45.1
Torbay and South Devon NHS Foundation Trust	77	98.2	1,413	93.9	1,107	45.4	43.5
Great Western Hospitals NHS Foundation Trust	78	86.1	1,605	91.0	1,286	83.2	74.6
SpaMedica (Bolton)	79	100.0	2,737	100.0	2,178	88.4	88.3
The Princess Alexandra Hospital NHS Trust	80	92.8	668	97.3	563	90.8	88.3

Appendix 8 table continued: The percentage of eyes with preoperative VA, postoperative VA and change in VA data for participating centres in the audit

Centre name	Centre number	Estimate of cases submitted to the audit (%)*	Number of eligible operations**	% with preoperative VA data	Number of operations eligible for postoperative VA results	% with postoperative VA data	% with change in VA data
Wye Valley NHS Trust	81	5.6	112	76.8	112	79.5	62.5
Cwm Taf University LHB	82	100.0	1,370	81.8	1,082	80.8	64.6
Sherwood Forest Hospitals NHS Foundation Trust	83	63.0	1,150	61.8	987	7.8	5.2
Royal Surrey County Hospital NHS Foundation Trust	84	17.9	310	97.7	262	96.2	93.5
Southport and Ormskirk Hospital NHS Trust	86	90.8	818	58.7	682	70.2	38.7
Stockport NHS Foundation Trust	87	6.1	107	8.4	107	0.0	0.0
Care UK (Shepton Mallet NHS Treatment Centre)	88	100.0	2,466	99.1	2,079	96.3	95.5
Care UK (St Marys NHS Treatment Centre)	89	99.8	2,455	99.8	2,094	86.4	86.2
Care UK (Emersons Green NHS Treatment Centre)	90	100.0	2,446	99.6	2,175	58.0	57.7
Care UK (Will Adams NHS Treatment Centre)	91	100.0	2,142	99.3	1,761	98.6	97.9
SpaMedica (Sheffield)	92	100.0	1,718	100.0	1,258	87.0	87.0
Care UK (Peninsula NHS Treatment Centre)	93	100.0	1,604	95.5	1,287	97.0	93.4
North Cumbria University Hospitals NHS Trust	94	53.8	1,385	97.5	1,109	12.1	11.9
Care UK (Rochdale Ophthalmology Clinical Assessment and Treatment Centre)	95	100.0	1,115	98.6	931	76.2	75.4
Royal Liverpool and Broadgreen University Hospitals NHS Trust	96	37.7	1,051	92.4	756	33.1	32.1
Care UK (North East London NHS Treatment Centre)	97	98.5	930	88.2	766	95.2	82.6
North Middlesex University Hospital NHS Trust	98	88.0	887	74.3	642	86.0	63.1
Brighton and Sussex University Hospitals NHS Trust	99	16.1	466	98.5	119	5.0	5.0
Care UK (SH Devizes NHS Treatment Centre)	100	100.0	470	100.0	385	99.2	99.2
Surrey and Sussex Healthcare NHS Trust	101	19.6	440	67.3	395	2.3	0.8
Aneurin Bevan University HB	102	36.7	427	95.3	262	50.0	46.6
Care UK (Southampton NHS Treatment Centre)	103	34.7	413	86.7	286	87.4	86.0
SpaMedica (Birmingham)	104	99.1	219	100.0	29	93.1	93.1
St Stephens Gate Medical Practice	105	-	202	99.5	196	89.3	88.8

Appendix 8 table continued: The percentage of eyes with preoperative VA, postoperative VA and change in VA data for participating centres in the audit

Centre name	Centre number	Estimate of cases submitted to the audit (%)*	Number of eligible operations**	% with preoperative VA data	Number of operations eligible for postoperative VA results	% with postoperative VA data	% with change in VA data
The Dudley Group NHS Foundation Trust	106	24.2	185	33.0	135	56.3	17.0
Abertawe Bro Morgannwg University Health Board	107	2.5	114	83.3	103	30.1	30.1
East Cheshire NHS Trust	108	52.7	50	6.0	0	0.0	0.0
Overall for all centres	N/A	84.5	213,808	91.9	177,380	76.0	72.1

*The estimate of the proportion of cases submitted to the audit is derived from the number of completed cataract operations supplied to NHS Digital or NWIS for the audit period. This estimation uses a pro rata calculation for a centre's denominator where the proportion of time during the audit cycle that a centre had been recording cataract operations was multiplied by the number of cataract operations supplied to NHS Digital or NWIS. The numerator was the number of operations a centre had supplied to the audit. Centres that had more operations submitted to the national audit than in the NHS Digital or NWIS data were all assumed to have a complete submission rate as the actual rate was not possible to estimate.

**1 centre's VA data not included.

Appendix 9: The percentage of first and second treated eyes with postoperative VA data

Appendix 9 table: The percentage of first and second treated eyes with postoperative VA data for participating centres in the audit

Centre name	Centre number	Number of operations eligible for postoperative VA results	% with preoperative VA data	Number of first treated eyes	% first treated eyes with postoperative VA data	Number of second treated eyes	% second treated eyes with postoperative VA data
Moorfields Eye Hospital NHS Foundation Trust	1	14,362	71.8	9,170	70.2	5,192	74.5
The Newcastle upon Tyne Hospitals NHS Foundation Trust	2	6,610	83.5	3,795	86.7	2,815	79.2
Norfolk and Norwich University Hospitals NHS Foundation Trust	3	3,467	14.0	1,990	15.7	1,477	11.7
Leeds Teaching Hospitals NHS Trust	4	3,769	89.4	2,018	95.9	1,751	81.8
Oxford University Hospitals NHS Foundation Trust	6	3,107	31.1	1,914	34.6	1,193	25.3
University Hospitals Bristol NHS Foundation Trust	7	3,209	88.0	1,858	89.0	1,351	86.5
Gloucestershire Hospitals NHS Foundation Trust	8	2,985	82.7	1,737	94.5	1,248	66.2
Sheffield Teaching Hospitals NHS Foundation Trust	9	2,770	97.2	1,746	96.7	1,024	97.9
Sandwell and West Birmingham Hospitals NHS Trust	10	3,560	92.4	2,039	92.8	1,521	91.8
University Hospital Southampton NHS Foundation Trust	11	2,493	94.2	1,403	96.1	1,090	91.7
Royal Berkshire NHS Foundation Trust	12	2,095	97.1	1,143	97.1	952	97.1
Calderdale and Huddersfield NHS Foundation Trust	13	1,823	82.7	952	90.3	871	74.4
Mid Cheshire Hospitals NHS Foundation Trust	14	2,369	69.3	1,422	70.6	947	67.4
The Mid Yorkshire Hospitals NHS Trust	15	1,702	79.5	938	85.7	764	71.9
Cardiff & Vale University LHB	16	2,165	50.2	1,285	51.0	880	49.0
Epsom and St Helier University Hospitals NHS Trust	17	2,122	89.8	1,212	90.7	910	88.6
Barts Health NHS Trust	18	3,132	83.5	1,878	86.3	1,254	79.3
Frimley Health NHS Foundation Trust	19	2,589	59.3	1,472	62.4	1,117	55.2
Bradford Teaching Hospitals NHS Foundation Trust	20	1,721	62.9	948	66.0	773	59.1
University Hospitals Plymouth NHS Trust	22	2,157	89.7	1,189	95.7	968	82.3
University Hospitals Birmingham NHS Foundation Trust	23	3,215	96.2	1,915	96.7	1,300	95.5
Hampshire Hospitals NHS Foundation Trust	24	1,989	72.4	1,129	72.5	860	72.3

Appendix 9 table continued: The percentage of first and second treated eyes with postoperative VA data for participating centres in the audit

Centre name	Centre number	Number of operations eligible for postoperative VA results	% with preoperative VA data	Number of first treated eyes	% first treated eyes with postoperative VA data	Number of second treated eyes	% second treated eyes with postoperative VA data
Royal Cornwall Hospitals NHS Trust	25	1,422	84.5	777	95.8	645	70.9
Manchester University NHS Foundation Trust	26	2,537	92.6	1,468	93.9	1,069	90.9
King's College Hospital NHS Foundation Trust	27	5,875	92.7	3,425	93.8	2,450	91.2
Shrewsbury and Telford Hospital NHS Trust	28	2,323	80.8	1,358	83.8	965	76.5
The Hillingdon Hospitals NHS Foundation Trust	30	1,431	86.0	810	88.9	621	82.1
Aintree University Hospital NHS Foundation Trust	31	924	94.4	549	95.3	375	93.1
Royal United Hospitals Bath NHS Foundation Trust	32	1,304	67.3	706	70.3	598	63.9
Chesterfield Royal Hospital NHS Foundation Trust	33	1,378	96.4	849	96.2	529	96.6
Mid Essex Hospital Services NHS Trust	34	1,236	61.9	702	62.3	534	61.4
Harrogate and District NHS Foundation Trust	35	941	86.0	571	84.2	370	88.6
North West Anglia NHS Foundation Trust	36	2,240	77.8	1,318	81.3	922	72.9
Northern Devon Healthcare NHS Trust	37	1,160	89.1	683	88.1	477	90.6
Wirral University Teaching Hospital NHS Foundation Trust	39	769	79.3	384	77.9	385	80.8
South Warwickshire NHS Foundation Trust	40	1,606	75.1	888	81.6	718	67.0
Isle of Wight NHS Trust	41	1,107	86.5	619	86.9	488	86.1
St Helens and Knowsley Teaching Hospitals NHS Trust	42	1,305	58.2	730	60.3	575	55.5
Wrightington, Wigan and Leigh NHS Foundation Trust	43	942	93.0	548	95.1	394	90.1
Warrington and Halton Hospitals NHS Foundation Trust	44	954	84.0	559	86.0	395	81.0
South Tees Hospitals NHS Foundation Trust	45	1,913	55.9	1,050	58.8	863	52.5
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	46	2,129	58.6	1,268	60.9	861	55.2
Barking, Havering and Redbridge University Hospitals NHS Trust	47	1,303	51.7	881	53.8	422	47.2
Royal Free London NHS Foundation Trust	48	1,564	25.3	931	35.3	633	10.6
University Hospitals Coventry and Warwickshire NHS Trust	49	2,301	94.3	1,288	94.1	1,013	94.5
Barnsley Hospital NHS Foundation Trust	50	134	9.0	100	11.0	34	2.9

Appendix 9 table continued: The percentage of first and second treated eyes with postoperative VA data for participating centres in the audit

Centre name	Centre number	Number of operations eligible for postoperative VA results	% with preoperative VA data	Number of first treated eyes	% first treated eyes with postoperative VA data	Number of second treated eyes	% second treated eyes with postoperative VA data
Salisbury NHS Foundation Trust	51	1,027	98.3	597	99.0	430	97.4
London North West University Healthcare NHS Trust	52	461	67.0	295	68.5	166	64.5
Nottingham University Hospitals NHS Trust	55	1,564	88.2	1,032	89.1	532	86.3
Yeovil District Hospital NHS Foundation Trust	56	805	98.1	478	98.3	327	97.9
SpaMedica (Manchester)	57	3,053	88.9	1,688	94.0	1,365	82.7
SpaMedica (Wakefield)	58	4,849	89.9	2,664	93.6	2,185	85.5
East Sussex Healthcare NHS Trust	59	2,579	71.5	1,536	73.3	1,043	68.7
Imperial College Healthcare NHS Trust	60	2,929	93.9	1,730	94.7	1,199	92.7
Portsmouth Hospitals NHS Trust	61	2,016	93.9	1,097	94.1	919	93.7
Cambridge University Hospitals NHS Foundation Trust	63	1,938	78.6	1,301	79.4	637	76.9
East Kent Hospitals University NHS Foundation Trust	64	2,053	57.6	1,269	63.6	784	47.8
East Suffolk and North Essex NHS Foundation Trust	65	2,238	22.7	1,430	25.7	808	17.6
SpaMedica (Wirral)	66	2,025	92.5	1,152	94.3	873	90.3
County Durham and Darlington NHS Foundation Trust	67	1,447	97.3	893	97.5	554	96.9
United Lincolnshire Hospitals NHS Trust	68	1,372	57.1	1,054	56.6	318	58.5
SpaMedica (Newton-le-Willows)	69	1,367	90.1	804	92.5	563	86.5
Northampton General Hospital NHS Trust	70	1,594	24.7	987	24.0	607	25.9
SpaMedica (Liverpool)	71	1,143	87.6	674	89.2	469	85.3
James Paget University Hospitals NHS Foundation Trust	72	1,483	74.7	954	74.9	529	74.3
Bolton NHS Foundation Trust	73	1,598	89.0	930	91.5	668	85.5
Kingston Hospital NHS Foundation Trust	74	1,152	0.6	735	0.8	417	0.2
Northern Lincolnshire and Goole NHS Foundation Trust	75	861	96.6	544	96.9	317	96.2
The Rotherham NHS Foundation Trust	76	483	47.6	298	57.0	185	32.4
Torbay and South Devon NHS Foundation Trust	77	1,107	45.4	704	50.9	403	36.0
Great Western Hospitals NHS Foundation Trust	78	1,286	83.2	779	84.5	507	81.3
SpaMedica (Bolton)	79	2,178	88.4	1,289	87.7	889	89.3
The Princess Alexandra Hospital NHS Trust	80	563	90.8	352	90.6	211	91.0

Appendix 9 table continued: The percentage of first and second treated eyes with postoperative VA data for participating centres in the audit

Centre name	Centre number	Number of operations eligible for postoperative VA results	% with preoperative VA data	Number of first treated eyes	% first treated eyes with postoperative VA data	Number of second treated eyes	% second treated eyes with postoperative VA data
Wye Valley NHS Trust	81	112	79.5	72	83.3	40	72.5
Cwm Taf University LHB	82	1,082	80.8	713	81.3	369	79.7
Sherwood Forest Hospitals NHS Foundation Trust	83	987	7.8	676	10.7	311	1.6
Royal Surrey County Hospital NHS Foundation Trust	84	262	96.2	147	94.6	115	98.3
Southport and Ormskirk Hospital NHS Trust	86	682	70.2	396	71.5	286	68.5
Stockport NHS Foundation Trust	87	107	0.0	70	0.0	37	0.0
Care UK (Shepton Mallet NHS Treatment Centre)	88	2,079	96.3	1,137	98.1	942	94.2
Care UK (St Marys NHS Treatment Centre)	89	2,094	86.4	1,177	92.5	917	78.5
Care UK (Emersons Green NHS Treatment Centre)	90	2,175	58.0	1,274	58.2	901	57.6
Care UK (Will Adams NHS Treatment Centre)	91	1,761	98.6	930	98.1	831	99.2
SpaMedica (Sheffield)	92	1,258	87.0	802	87.9	456	85.5
Care UK (Peninsula NHS Treatment Centre)	93	1,287	97.0	780	97.8	507	95.7
North Cumbria University Hospitals NHS Trust	94	1,109	12.1	737	14.1	372	8.1
Care UK (Rochdale Ophthalmology Clinical Assessment and Treatment Centre)	95	931	76.2	502	95.0	429	54.1
Royal Liverpool and Broadgreen University Hospitals NHS Trust	96	756	33.1	480	34.6	276	30.4
Care UK (North East London NHS Treatment Centre)	97	766	95.2	421	96.0	345	94.2
North Middlesex University Hospital NHS Trust	98	642	86.0	426	85.2	216	87.5
Brighton and Sussex University Hospitals NHS Trust	99	119	5.0	66	9.1	53	0.0
Care UK (SH Devizes NHS Treatment Centre)	100	385	99.2	225	99.6	160	98.8
Surrey and Sussex Healthcare NHS Trust	101	395	2.3	267	3.0	128	0.8
Aneurin Bevan University HB	102	262	50.0	153	54.9	109	43.1
Care UK (Southampton NHS Treatment Centre)	103	286	87.4	174	85.6	112	90.2
SpaMedica (Birmingham)	104	29	93.1	24	95.8	5	80.0
St Stephens Gate Medical Practice	105	196	89.3	109	92.7	87	85.1

Appendix 9 table continued: The percentage of first and second treated eyes with postoperative VA data for participating centres in the audit

Centre name	Centre number	Number of operations eligible for postoperative VA results	% with preoperative VA data	Number of first treated eyes	% first treated eyes with postoperative VA data	Number of second treated eyes	% second treated eyes with postoperative VA data
The Dudley Group NHS Foundation Trust	106	135	56.3	104	59.6	31	45.2
Abertawe Bro Morgannwg University Health Board	107	103	30.1	99	29.3	4	50.0
East Cheshire NHS Trust	108	0	0.0	0	0.0	0	0.0
Overall for all centres	N/A	177,380	76.0	104,842	77.5	72,538	73.8

Note: Both eyes from a patient undergoing immediate sequential bilateral cataract surgery are included as 'first treated' eyes.

Appendix 10: Case complexity PCR and VA Loss

Appendix 10 table: Posterior capsular rupture and VA Loss results for participating centres in the audit

Centre name	Centre number	Posterior Capsular Rupture Overall Consultant Surgeon PCR rate = 1.1%				Visual Acuity Loss Overall Consultant Surgeon VA Loss rate = 0.9%			
		Number of operations	Unadjusted PCR rate (%)	Case complexity index (%)	Adjusted PCR rate (%)	Number of operations	Unadjusted VA Loss rate (%)	Case complexity index (%)	Adjusted VA Loss rate (%)
Moorfields Eye Hospital NHS Foundation Trust	1	17,621	1.2	1.8	0.8	9,338	0.4	0.8	0.4
The Newcastle upon Tyne Hospitals NHS Foundation Trust	2	7,863	1.4	1.6	1.0	5,246	0.5	0.8	0.5
Norfolk and Norwich University Hospitals NHS Foundation Trust	3	4,263	0.7	1.5	0.5				
Leeds Teaching Hospitals NHS Trust	4	4,520	1.1	1.9	0.6	3,276	0.6	1.1	0.5
York Teaching Hospital NHS Foundation Trust	5	4,067	0.8	1.6	0.6				
Oxford University Hospitals NHS Foundation Trust	6	3,717	2.3	2.2	1.2				
University Hospitals Bristol NHS Foundation Trust	7	3,958	1.8	2.1	1.0	2,786	1.0	1.1	0.8
Gloucestershire Hospitals NHS Foundation Trust	8	3,453	1.2	1.7	0.8	2,339	0.6	0.9	0.6
Sheffield Teaching Hospitals NHS Foundation Trust	9	3,260	1.6	1.8	0.9	2,635	0.8	0.9	0.8
Sandwell and West Birmingham Hospitals NHS Trust	10	4,038	2.4	2.2	1.2	3,106	0.7	0.8	0.8
University Hospital Southampton NHS Foundation Trust	11	2,978	1.5	1.7	1.0	2,259	0.3	1.0	0.3
Royal Berkshire NHS Foundation Trust	12	2,585	1.1	1.7	0.7	2,007	0.2	0.7	0.3
Calderdale and Huddersfield NHS Foundation Trust	13	2,148	0.9	1.5	0.7	1,461	0.7	1.0	0.6
Mid Cheshire Hospitals NHS Foundation Trust	14	2,833	1.2	1.8	0.7	1,522	0.8	0.9	0.8
The Mid Yorkshire Hospitals NHS Trust	15	1,975	1.3	1.8	0.8	1,334	0.7	1.2	0.5
Cardiff & Vale University LHB	16	2,412	1.5	1.8	0.9				
Epsom and St Helier University Hospitals NHS Trust	17	2,573	2.1	1.8	1.3	1,860	0.1	1.0	0.1
Barts Health NHS Trust	18	3,819	1.6	1.9	0.9	2,364	0.5	0.8	0.6
Frimley Health NHS Foundation Trust	19	3,130	1.4	1.7	0.9				
Bradford Teaching Hospitals NHS Foundation Trust	20	2,094	1.2	1.8	0.7				
University Hospitals Plymouth NHS Trust	22	2,504	0.6	1.8	0.4	1,911	0.7	1.0	0.6
University Hospitals Birmingham NHS Foundation Trust	23	4,045	1.7	2.0	1.0	2,993	0.8	1.0	0.7
Hampshire Hospitals NHS Foundation Trust	24	2,334	1.0	1.4	0.8	1,368	0.5	0.9	0.5

Appendix 10 table continued: Posterior capsular rupture and VA Loss results for participating centres in the audit

		Posterior Capsular Rupture Overall Consultant Surgeon PCR rate = 1.1%				Visual Acuity Loss Overall Consultant Surgeon VA Loss rate = 0.9%			
Centre name	Centre number	Number of operations	Unadjusted PCR rate (%)	Case complexity index (%)	Adjusted PCR rate (%)	Number of operations	Unadjusted VA Loss rate (%)	Case complexity index (%)	Adjusted VA Loss rate (%)
Royal Cornwall Hospitals NHS Trust	25	1,671	1.6	1.7	1.0	1,124	0.8	1.1	0.6
Manchester University NHS Foundation Trust	26	3,056	1.7	2.0	0.9	2,297	0.3	0.9	0.3
King's College Hospital NHS Foundation Trust	27	7,041	1.5	1.6	1.0	5,252	1.0	0.9	1.0
Shrewsbury and Telford Hospital NHS Trust	28	2,837	1.1	1.6	0.8	1,596	1.2	0.8	1.3
The Hillingdon Hospitals NHS Foundation Trust	30	1,750	2.0	2.3	1.0	1,196	0.4	0.7	0.5
Aintree University Hospital NHS Foundation Trust	31	1,129	2.6	1.7	1.7	814	1.1	1.0	1.0
Royal United Hospitals Bath NHS Foundation Trust	32	1,523	1.0	2.0	0.5	796	1.4	1.0	1.2
Chesterfield Royal Hospital NHS Foundation Trust	33	1,644	2.7	1.9	1.6	1,279	0.7	0.9	0.7
Mid Essex Hospital Services NHS Trust	34	1,501	1.9	1.4	1.5				
Harrogate and District NHS Foundation Trust	35	1,158	0.5	1.9	0.3	781	0.9	0.9	0.9
North West Anglia NHS Foundation Trust	36	2,709	1.3	1.7	0.8	1,702	0.4	1.0	0.4
Northern Devon Healthcare NHS Trust	37	1,400	1.1	1.7	0.7	1,030	0.7	1.0	0.6
Wirral University Teaching Hospital NHS Foundation Trust	39	922	0.5	1.7	0.4	484	1.4	1.1	1.2
South Warwickshire NHS Foundation Trust	40	1,872	0.8	1.7	0.5	1,178	0.4	1.1	0.3
Isle of Wight NHS Trust	41	1,342	0.7	1.5	0.5	881	1.0	0.9	1.0
St Helens and Knowsley Teaching Hospitals NHS Trust	42	1,459	1.3	1.6	0.9				
Wrightington, Wigan and Leigh NHS Foundation Trust	43	1,160	0.8	1.3	0.6	870	0.7	0.8	0.8
Warrington and Halton Hospitals NHS Foundation Trust	44	1,193	0.6	1.5	0.4	780	0.9	0.8	1.0
South Tees Hospitals NHS Foundation Trust	45	2,342	1.2	1.8	0.7				
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	46	2,559	0.8	1.6	0.6				
Barking, Havering and Redbridge University Hospitals NHS Trust	47	1,623	1.5	1.6	1.0				
Royal Free London NHS Foundation Trust	48	1,894	1.3	1.7	0.8				
University Hospitals Coventry and Warwickshire NHS Trust	49	2,726	0.9	2.0	0.5	2,085	0.5	0.9	0.5

Appendix 10 table continued: Posterior capsular rupture and VA Loss results for participating centres in the audit

		Posterior Capsular Rupture Overall Consultant Surgeon PCR rate = 1.1%				Visual Acuity Loss Overall Consultant Surgeon VA Loss rate = 0.9%			
Centre name	Centre number	Number of operations	Unadjusted PCR rate (%)	Case complexity index (%)	Adjusted PCR rate (%)	Number of operations	Unadjusted VA Loss rate (%)	Case complexity index (%)	Adjusted VA Loss rate (%)
Barnsley Hospital NHS Foundation Trust	50	169	0.6	1.1	0.6				
Salisbury NHS Foundation Trust	51	1,205	1.4	1.6	0.9	1,005	0.3	0.9	0.3
London North West University Healthcare NHS Trust	52	549	2.7	2.8	1.1				
Nottingham University Hospitals NHS Trust	55	1,889	1.2	1.9	0.7	1,217	0.8	0.9	0.9
Yeovil District Hospital NHS Foundation Trust	56	924	2.2	1.4	1.7	790	0.5	0.9	0.5
SpaMedica (Manchester)	57	3,620	0.6	1.3	0.5	2,711	0.1	0.7	0.1
SpaMedica (Wakefield)	58	5,708	0.4	1.1	0.4	4,356	0.2	0.7	0.3
East Sussex Healthcare NHS Trust	59	3,054	1.3	1.6	0.9	1,686	0.4	0.9	0.4
Imperial College Healthcare NHS Trust	60	3,506	3.1	2.5	1.4	2,552	1.1	0.9	1.1
Portsmouth Hospitals NHS Trust	61	2,393	1.6	1.6	1.1	1,827	0.5	1.0	0.5
Cambridge University Hospitals NHS Foundation Trust	63	2,289	1.0	1.8	0.6	1,339	0.2	0.8	0.2
East Kent Hospitals University NHS Foundation Trust	64	2,553	1.1	1.8	0.7				
East Suffolk and North Essex NHS Foundation Trust	65	2,638	1.2	1.6	0.8				
SpaMedica (Wirral)	66	2,472	0.4	1.3	0.3	1,873	0.3	0.7	0.4
County Durham and Darlington NHS Foundation Trust	67	1,615	1.0	1.7	0.7	1,330	0.5	0.9	0.4
United Lincolnshire Hospitals NHS Trust	68	1,635	1.3	1.6	0.9				
SpaMedica (Newton-le-Willows)	69	1,634	0.2	1.3	0.2	1,230	0.2	0.8	0.3
Northampton General Hospital NHS Trust	70	1,892	1.1	1.6	0.7				
SpaMedica (Liverpool)	71	1,396	0.5	1.3	0.4	1,001	0.1	0.6	0.1
James Paget University Hospitals NHS Foundation Trust	72	1,829	1.0	1.5	0.7	1,024	0.4	0.7	0.5
Bolton NHS Foundation Trust	73	1,908	1.2	1.9	0.7	1,413	0.6	0.8	0.7
Kingston Hospital NHS Foundation Trust	74	1,344	1.6	1.5	1.2				
Northern Lincolnshire and Goole NHS Foundation Trust	75	862	1.5	1.4	1.2	639	1.1	0.8	1.2
The Rotherham NHS Foundation Trust	76	615	0.8	1.7	0.5				
Torbay and South Devon NHS Foundation Trust	77	1,413	1.9	1.7	1.2				
Great Western Hospitals NHS Foundation Trust	78	1,605	1.1	1.5	0.8	959	1.1	1.2	0.8
SpaMedica (Bolton)	79	2,737	0.4	1.2	0.4	1,924	0.4	0.7	0.5

Appendix 10 table continued: Posterior capsular rupture and VA Loss results for participating centres in the audit

		Posterior Capsular Rupture Overall Consultant Surgeon PCR rate = 1.1%				Visual Acuity Loss Overall Consultant Surgeon VA Loss rate = 0.9%			
Centre name	Centre number	Number of operations	Unadjusted PCR rate (%)	Case complexity index (%)	Adjusted PCR rate (%)	Number of operations	Unadjusted VA Loss rate (%)	Case complexity index (%)	Adjusted VA Loss rate (%)
The Princess Alexandra Hospital NHS Trust	80	668	2.2	1.7	1.4	497	1.0	0.9	1.1
Wye Valley NHS Trust	81	112	0.9	1.6	0.6	70	0.0	1.1	0.0
Cwm Taf University LHB	82	1,370	1.2	2.0	0.7	699	1.3	1.0	1.2
Sherwood Forest Hospitals NHS Foundation Trust	83	1,150	0.3	1.4	0.3				
Royal Surrey County Hospital NHS Foundation Trust	84	310	0.0	1.3	0.0	245	1.2	0.8	1.4
Southport and Ormskirk Hospital NHS Trust	86	818	0.9	1.9	0.5				
Stockport NHS Foundation Trust	87	107	1.9	1.5	1.4				
Care UK (Shepton Mallet NHS Treatment Centre)	88	2,466	0.3	1.3	0.2	1,986	0.4	1.1	0.3
Care UK (St Marys NHS Treatment Centre)	89	2,455	0.8	1.1	0.8	1,804	0.1	0.6	0.1
Care UK (Emersons Green NHS Treatment Centre)	90	2,446	0.7	1.5	0.6				
Care UK (Will Adams NHS Treatment Centre)	91	2,142	0.7	1.1	0.7	1,724	0.5	0.7	0.6
SpaMedica (Sheffield)	92	1,718	0.9	1.1	0.9	1,095	0.3	0.7	0.4
Care UK (Peninsula NHS Treatment Centre)	93	1,604	0.2	1.1	0.2	1,202	0.1	0.6	0.1
North Cumbria University Hospitals NHS Trust	94	1,385	0.9	1.4	0.7				
Care UK (Rochdale Ophthalmology Clinical Assessment and Treatment Centre)	95	1,115	0.6	1.1	0.6	702	0.9	0.6	1.2
Royal Liverpool and Broadgreen University Hospitals NHS Trust	96	1,051	2.2	2.2	1.1				
Care UK (North East London NHS Treatment Centre)	97	930	0.4	1.3	0.4	633	0.9	0.6	1.5
North Middlesex University Hospital NHS Trust	98	887	1.0	1.7	0.7	405	0.5	0.8	0.6
Brighton and Sussex University Hospitals NHS Trust	99	466	0.6	1.5	0.5				
Care UK (SH Devizes NHS Treatment Centre)	100	470	0.0	1.7	0.0	382	0.3	0.7	0.3
Surrey and Sussex Healthcare NHS Trust	101	440	2.7	1.4	2.1				
Aneurin Bevan University HB	102	427	0.0	2.2	0.0				
Care UK (Southampton NHS Treatment Centre)	103	413	1.5	1.1	1.4	246	0.0	0.5	0.0
SpaMedica (Birmingham)	104	219	1.4	1.5	1.0				
St Stephens Gate Medical Practice	105	202	0.0	1.2	0.0	174	0.6	0.7	0.7

Appendix 10 table continued: Posterior capsular rupture and VA Loss results for participating centres in the audit

		Posterior Capsular Rupture Overall Consultant Surgeon PCR rate = 1.1%				Visual Acuity Loss Overall Consultant Surgeon VA Loss rate = 0.9%			
Centre name	Centre number	Number of operations	Unadjusted PCR rate (%)	Case complexity index (%)	Adjusted PCR rate (%)	Number of operations	Unadjusted VA Loss rate (%)	Case complexity index (%)	Adjusted VA Loss rate (%)
The Dudley Group NHS Foundation Trust	106	185	0.5	1.8	0.3				
Abertawe Bro Morgannwg University Health Board	107	114	1.8	2.0	0.9				
East Cheshire NHS Trust	108	50	2.0	1.3	1.7				

The case complexity index is an estimate of the overall predicted probability of the adverse event based on the reported case complexity.

Appendix 11: Cataract audit years 1, 2 and 3 case ascertainment and percentage of eyes with VA data

Appendix 11 table: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

		Case ascertainment %*			Preoperative VA %			Postoperative VA %		
Centre name	Centre number	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Moorfields Eye Hospital NHS Foundation Trust	1	99.2	100.0	96.2	72.8	72.7	73.6	69.7	69.9	71.8
The Newcastle upon Tyne Hospitals NHS Foundation Trust	2	97.4	99.4	98.4	97.6	96.1	94.2	84.8	84.5	83.5
Norfolk and Norwich University Hospitals NHS Foundation Trust	3	100.0	100.0	99.1	95.0	96.0	94.5	13.5	15.7	14.0
Leeds Teaching Hospitals NHS Trust	4	100.0	100.0	98.6	99.0	98.6	97.2	85.8	86.5	89.4
York Teaching Hospital NHS Foundation Trust	5	89.9	91.8	100.0	***	***	***	***	***	***
Oxford University Hospitals NHS Foundation Trust	6	99.9	98.9	98.8	92.7	89.4	92.4	64.5	67.9	31.1
University Hospitals Bristol NHS Foundation Trust	7	100.0	100.0	99.2	98.8	98.4	98.3	89.1	89.0	88.0
Gloucestershire Hospitals NHS Foundation Trust	8	100.0	100.0	100.0	93.9	92.8	92.8	93.2	86.0	82.7
Sheffield Teaching Hospitals NHS Foundation Trust	9	79.7	100.0	100.0	97.6	97.4	97.6	93.1	96.4	97.2
Sandwell and West Birmingham Hospitals NHS Trust	10	89.2	94.5	96.5	89.7	92.7	94.2	90.0	92.3	92.4
University Hospital Southampton NHS Foundation Trust	11	100.0	100.0	87.9	95.1	94.8	96.4	84.5	89.5	94.2
Royal Berkshire NHS Foundation Trust	12	60.9	62.1	56.3	98.8	99.0	97.6	93.2	96.2	97.1
Calderdale and Huddersfield NHS Foundation Trust	13	100.0	100.0	98.9	91.7	95.3	97.1	79.0	82.5	82.7
Mid Cheshire Hospitals NHS Foundation Trust	14	98.9	98.7	100.0	95.6	93.8	93.7	74.4	73.6	69.3
The Mid Yorkshire Hospitals NHS Trust	15	99.7	99.6	99.6	92.1	96.8	98.5	82.0	80.5	79.5
Cardiff & Vale University LHB	16	NPE	92.7	96.4	93.4	94.4	89.6	37.0	45.4	50.2
Epsom and St Helier University Hospitals NHS Trust	17	100.0	100.0	98.9	97.5	98.2	96.9	90.7	90.7	89.8
Barts Health NHS Trust	18	89.0	91.6	99.3	90.7	87.0	90.0	77.5	82.5	83.5
Frimley Health NHS Foundation Trust	19	92.1	100.0	98.7	98.9	96.5	97.2	52.2	52.7	59.3
Bradford Teaching Hospitals NHS Foundation Trust	20	100.0	94.9	98.5	88.2	84.6	94.5	38.8	42.5	62.9
University Hospitals Plymouth NHS Trust	22	84.7	99.1	94.9	96.9	99.2	98.8	71.6	92.8	89.7
University Hospitals Birmingham NHS Foundation Trust	23	96.0	99.1	99.2	97.6	97.9	96.8	96.7	97.1	96.2

Appendix 11 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

Centre name	Centre number	Case ascertainment %*			Preoperative VA %			Postoperative VA %		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Hampshire Hospitals NHS Foundation Trust	24	60.4	74.6	77.0	96.6	96.8	95.2	82.0	73.1	72.4
Royal Cornwall Hospitals NHS Trust	25	100.0	100.0	98.2	98.2	97.7	90.5	75.2	85.0	84.5
Manchester University NHS Foundation Trust	26	46.1	61.3	56.1	98.1	97.6	97.8	92.7	90.7	92.6
King's College Hospital NHS Foundation Trust	27	62.6	83.7	95.4	97.6	96.3	96.4	88.1	86.3	92.7
Shrewsbury and Telford Hospital NHS Trust	28	100.0	100.0	95.9	94.4	87.3	84.7	78.6	76.0	80.8
The Hillingdon Hospitals NHS Foundation Trust	30	99.4	99.3	100.0	98.6	98.6	97.1	95.0	82.3	86.0
Aintree University Hospital NHS Foundation Trust	31	99.9	100.0	98.8	92.2	90.6	93.3	78.5	82.5	94.4
Royal United Hospitals Bath NHS Foundation Trust	32	94.9	97.9	100.0	83.7	90.3	89.0	53.5	56.6	67.3
Chesterfield Royal Hospital NHS Foundation Trust	33	99.9	98.1	98.9	96.2	93.0	96.3	97.1	95.5	96.4
Mid Essex Hospital Services NHS Trust	34	93.7	97.2	99.8	94.1	79.4	87.0	72.2	63.6	61.9
Harrogate and District NHS Foundation Trust	35	100.0	100.0	99.8	96.8	97.9	95.9	86.9	84.8	86.0
North West Anglia NHS Foundation Trust	36	100.0	100.0	99.7	96.3	97.2	97.5	85.1	85.3	77.8
Northern Devon Healthcare NHS Trust	37	99.9	100.0	100.0	99.4	99.4	98.6	88.8	91.6	89.1
Wirral University Teaching Hospital NHS Foundation Trust	39	100.0	100.0	98.6	84.8	71.5	80.2	76.1	77.1	79.3
South Warwickshire NHS Foundation Trust	40	100.0	100.0	99.7	98.2	98.7	97.4	84.3	76.5	75.1
Isle of Wight NHS Trust	41	96.1	100.0	93.8	88.7	87.6	91.6	82.1	81.1	86.5
St Helens and Knowsley Teaching Hospitals NHS Trust	42	62.4	73.9	74.0	96.9	96.6	98.1	71.3	66.5	58.2
Wrightington, Wigan and Leigh NHS Foundation Trust	43	64.6	98.1	99.1	96.6	99.2	99.4	73.8	94.1	93.0
Warrington and Halton Hospitals NHS Foundation Trust	44	69.1	89.3	81.3	98.1	94.5	96.7	10.7	22.8	84.0
South Tees Hospitals NHS Foundation Trust	45	26.3	57.6	76.5	98.5	98.4	96.4	53.6	66.1	55.9
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	46	32.9	64.1	64.3	99.3	97.9	92.3	71.1	81.2	58.6
Barking, Havering and Redbridge University Hospitals NHS Trust	47	36.8	64.3	73.2	92.8	85.7	86.9	30.6	52.8	51.7
Royal Free London NHS Foundation Trust	48	17.4	44.4	47.6	93.5	95.8	96.0	16.0	42.8	25.3
University Hospitals Coventry and Warwickshire NHS Trust	49	26.6	93.6	94.7	91.8	92.4	96.0	22.5	83.7	94.3

Appendix 11 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

Centre name	Centre number	Case ascertainment %*			Preoperative VA %			Postoperative VA %		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Barnsley Hospital NHS Foundation Trust	50	NPE	69.2	13.3	79.3	78.0	11.2	35.8	17.6	9.0
Salisbury NHS Foundation Trust	51	47.6	99.9	99.4	99.6	98.4	99.4	88.4	97.5	98.3
London North West University Healthcare NHS Trust	52	54.3	92.0	89.8	61.0	85.0	73.2	24.3	94.7	67.0
Blackpool Teaching Hospitals NHS Foundation Trust	53	12.6	**	**	87.0	**	**	52.0	**	**
University Hospitals of Morecambe Bay NHS Foundation Trust	54	11.1	7.0	**	88.9	89.4	**	32.6	3.5	**
Nottingham University Hospitals NHS Trust	55	7.9	35.6	57.8	94.8	90.1	87.9	89.4	83.1	88.2
Yeovil District Hospital NHS Foundation Trust	56	54.7	97.7	100.0	98.7	99.3	100.0	57.1	83.5	98.1
SpaMedica (Manchester)	57		100.0	100.0		100.0	99.8		91.2	88.9
SpaMedica (Wakefield)	58		100.0	100.0		99.9	99.9		90.8	89.9
East Sussex Healthcare NHS Trust	59		99.7	100.0		90.6	89.4		76.4	71.5
Imperial College Healthcare NHS Trust	60		100.0	98.1		95.2	92.9		93.0	93.9
Portsmouth Hospitals NHS Trust	61		100.0	97.4		93.2	96.6		93.3	93.9
Cambridge University Hospitals NHS Foundation Trust	63		100.0	97.0		73.7	86.9		80.2	78.6
East Kent Hospitals University NHS Foundation Trust	64		88.2	93.9		82.9	85.5		43.9	57.6
East Suffolk and North Essex NHS Foundation Trust	65		49.1	44.5		91.8	94.4		10.2	22.7
SpaMedica (Wirral)	66		100.0	100.0		99.9	99.9		93.1	92.5
County Durham and Darlington NHS Foundation Trust	67		100.0	98.3		96.0	92.4		97.3	97.3
United Lincolnshire Hospitals NHS Trust	68		46.7	47.0		93.9	94.8		62.6	57.1
SpaMedica (Newton-le-Willows)	69		100.0	100.0		100.0	99.9		91.7	90.1
Northampton General Hospital NHS Trust	70		77.9	82.4		71.2	70.7		17.1	24.7
SpaMedica (Liverpool)	71		100.0	100.0		100.0	100.0		88.8	87.6
James Paget University Hospitals NHS Foundation Trust	72		77.1	90.1		86.6	88.4		47.7	74.7
Bolton NHS Foundation Trust	73		86.1	99.9		94.7	99.4		80.3	89.0
Kingston Hospital NHS Foundation Trust	74		47.7	66.2		52.8	26.0		18.9	0.6
Northern Lincolnshire and Goole NHS Foundation Trust	75		34.1	34.1		77.7	76.2		94.9	96.6
The Rotherham NHS Foundation Trust	76		36.5	61.1		97.0	95.8		21.3	47.6
Torbay and South Devon NHS Foundation Trust	77		71.3	98.2		97.3	93.9		54.4	45.4

Appendix 11 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

Centre name	Centre number	Case ascertainment %*			Preoperative VA %			Postoperative VA %		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Great Western Hospitals NHS Foundation Trust	78		38.5	86.1		99.0	91.0		87.4	83.2
SpaMedica (Bolton)	79		100.0	100.0		100.0	100.0		93.8	88.4
The Princess Alexandra Hospital NHS Trust	80		40.2	92.8		98.9	97.3		72.6	90.8
Wye Valley NHS Trust	81		22.4	5.6		61.6	76.8		69.5	79.5
Cwm Taf University LHB	82		34.5	100.0		57.2	81.8		64.7	80.8
Sherwood Forest Hospitals NHS Foundation Trust	83		30.4	63.0		42.1	61.8		4.3	7.8
Royal Surrey County Hospital NHS Foundation Trust	84		13.3	17.9		98.8	97.7		94.3	96.2
East Lancashire Hospitals NHS Trust	85		18.8	**		3.1	**		0.0	**
Southport and Ormskirk Hospital NHS Trust	86		64.9	90.8		9.8	58.7		17.4	70.2
Stockport NHS Foundation Trust	87		18.2	6.1		14.1	8.4		0.0	0.0
Care UK (Shepton Mallet NHS Treatment Centre)	88			100.0			99.1			96.3
Care UK (St Marys NHS Treatment Centre)	89			99.8			99.8			86.4
Care UK (Emersons Green NHS Treatment Centre)	90			100.0			99.6			58.0
Care UK (Will Adams NHS Treatment Centre)	91			100.0			99.3			98.6
SpaMedica (Sheffield)	92			100.0			100.0			87.0
Care UK (Peninsula NHS Treatment Centre)	93			100.0			95.5			97.0
North Cumbria University Hospitals NHS Trust	94			53.8			97.5			12.1
Care UK (Rochdale Ophthalmology Clinical Assessment and Treatment Centre)	95			100.0			98.6			76.2
Royal Liverpool and Broadgreen University Hospitals NHS Trust	96			37.7			92.4			33.1
Care UK (North East London NHS Treatment Centre)	97			98.5			88.2			95.2
North Middlesex University Hospital NHS Trust	98			88.0			74.3			86.0
Brighton and Sussex University Hospitals NHS Trust	99			16.1			98.5			5.0
Care UK (SH Devizes NHS Treatment Centre)	100			100.0			100.0			99.2
Surrey and Sussex Healthcare NHS Trust	101			19.6			67.3			2.3
Aneurin Bevan University HB	102			36.7			95.3			50.0
Care UK (Southampton NHS Treatment Centre)	103			34.7			86.7			87.4

Appendix 11 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

		Case ascertainment %*			Preoperative VA %			Postoperative VA %		
Centre name	Centre number	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
SpaMedica (Birmingham)	104			99.1			100.0			93.1
St Stephens Gate Medical Practice	105			NPE			99.5			89.3
The Dudley Group NHS Foundation Trust	106			24.2			33.0			56.3
Abertawe Bro Morgannwg University Health Board	107			2.5			83.3			30.1
East Cheshire NHS Trust	108			52.7			6.0			N/A
Overall for all centres	N/A	84.4	85.7	84.5	92.1	91.6	91.9	75.4	75.7	76.0

*The estimate of the proportion of cases submitted to the audit is derived from the number of completed cataract operations supplied to NHS Digital or NWIS for the audit period. This estimation uses a pro rata calculation for a centre's denominator where the proportion of time during the audit cycle that a centre had been recording cataract operations was multiplied by the number of cataract operations supplied to NHS Digital or NWIS. The numerator was the number of operations a centre had supplied to the audit. Centres that had more operations submitted to the national audit than in the NHS Digital or NWIS data were all assumed to have a complete submission rate as the actual rate was not possible to estimate. NPE = Not possible to estimate due to the audit not receiving the number of completed cases from NHS Digital or NWIS.

**These centres have participated in an audit year and then due to issues with data collection not participated in the following audit year.

***This centre requested that their VA data was not reported after identifying a fault with the extraction of the VA data.

Appendix 12: The percentage of eyes with VA data at different time intervals

Appendix 12 table: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

Centre name	Centre number	Preoperative VA					Postoperative VA				
		Number of eligible operations	6 months %	5 months %	4 months %	3 months %	Number of eligible operations	3 months %	4 months %	5 months %	6 months %
Moorfields Eye Hospital NHS Foundation Trust	1	17,621	73.6	72.7	70.2	63.1	14,362	69.4	70.4	71.2	71.8
The Newcastle upon Tyne Hospitals NHS Foundation Trust	2	7,863	94.2	92.2	85.8	73.9	6,610	81.0	82.4	83.1	83.5
Norfolk and Norwich University Hospitals NHS Foundation Trust	3	4,263	94.5	92.9	89.8	83.0	3,467	12.6	13.2	13.6	14.0
Leeds Teaching Hospitals NHS Trust	4	4,520	97.2	96.0	90.2	72.4	3,769	87.5	88.4	88.9	89.4
Oxford University Hospitals NHS Foundation Trust	6	3,717	92.4	89.7	84.3	73.0	3,107	24.1	27.6	29.7	31.1
University Hospitals Bristol NHS Foundation Trust	7	3,958	98.3	96.2	90.5	79.9	3,209	78.8	84.3	87.5	88.0
Gloucestershire Hospitals NHS Foundation Trust	8	3,453	92.8	87.3	73.6	56.1	2,985	79.9	81.6	82.4	82.7
Sheffield Teaching Hospitals NHS Foundation Trust	9	3,260	97.6	96.5	94.7	91.3	2,770	96.3	96.8	97.1	97.2
Sandwell and West Birmingham Hospitals NHS Trust	10	4,038	94.2	93.0	91.1	88.0	3,560	89.9	91.1	91.8	92.4
University Hospital Southampton NHS Foundation Trust	11	2,978	96.4	95.3	91.4	84.5	2,493	89.3	91.9	93.7	94.2
Royal Berkshire NHS Foundation Trust	12	2,585	97.6	96.7	95.3	90.3	2,095	96.7	96.8	96.9	97.1
Calderdale and Huddersfield NHS Foundation Trust	13	2,148	97.1	95.5	92.3	83.8	1,823	78.2	80.9	82.2	82.7
Mid Cheshire Hospitals NHS Foundation Trust	14	2,833	93.7	92.9	91.5	88.8	2,369	65.6	67.5	68.5	69.3
The Mid Yorkshire Hospitals NHS Trust	15	1,975	98.5	97.9	97.2	94.6	1,702	75.3	77.6	78.8	79.5
Cardiff & Vale University LHB	16	2,412	89.6	89.0	88.1	87.4	2,165	47.3	48.6	49.4	50.2
Epsom and St Helier University Hospitals NHS Trust	17	2,573	96.9	96.3	94.1	75.1	2,122	88.6	89.2	89.6	89.8
Barts Health NHS Trust	18	3,819	90.0	88.5	85.5	79.7	3,132	77.6	80.6	82.3	83.5
Frimley Health NHS Foundation Trust	19	3,130	97.2	96.7	95.2	92.6	2,589	46.3	53.2	56.7	59.3
Bradford Teaching Hospitals NHS Foundation Trust	20	2,094	94.5	92.5	88.3	80.0	1,721	56.9	60.4	61.5	62.9
University Hospitals Plymouth NHS Trust	22	2,504	98.8	97.9	96.1	93.1	2,157	86.3	88.9	89.4	89.7
University Hospitals Birmingham NHS Foundation Trust	23	4,045	96.8	94.5	87.9	81.9	3,215	90.7	94.2	96.0	96.2

Appendix 12 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

Centre name	Centre number	Preoperative VA					Postoperative VA				
		Number of eligible operations	6 months %	5 months %	4 months %	3 months %	Number of eligible operations	3 months %	4 months %	5 months %	6 months %
Hampshire Hospitals NHS Foundation Trust	24	2,334	95.2	93.3	88.9	83.2	1,989	68.8	70.4	71.7	72.4
Royal Cornwall Hospitals NHS Trust	25	1,671	90.5	83.1	74.1	63.2	1,422	82.8	83.7	84.2	84.5
Manchester University NHS Foundation Trust	26	3,056	97.8	97.5	97.0	95.8	2,537	91.8	92.3	92.6	92.6
King's College Hospital NHS Foundation Trust	27	7,041	96.4	93.0	87.8	79.5	5,875	90.9	91.8	92.3	92.7
Shrewsbury and Telford Hospital NHS Trust	28	2,837	84.7	76.4	65.0	53.0	2,323	77.5	78.9	80.0	80.8
The Hillingdon Hospitals NHS Foundation Trust	30	1,750	97.1	95.0	90.9	84.3	1,431	77.6	81.6	84.8	86.0
Aintree University Hospital NHS Foundation Trust	31	1,129	93.3	90.9	86.3	72.7	924	91.9	93.3	93.9	94.4
Royal United Hospitals Bath NHS Foundation Trust	32	1,523	89.0	87.9	85.8	82.2	1,304	63.8	65.5	66.9	67.3
Chesterfield Royal Hospital NHS Foundation Trust	33	1,644	96.3	94.2	88.3	79.4	1,378	95.9	96.3	96.4	96.4
Mid Essex Hospital Services NHS Trust	34	1,501	87.0	86.4	85.7	84.1	1,236	58.4	60.0	60.9	61.9
Harrogate and District NHS Foundation Trust	35	1,158	95.9	94.1	92.7	91.6	941	85.1	85.3	85.5	86.0
North West Anglia NHS Foundation Trust	36	2,709	97.5	96.5	94.9	91.8	2,240	72.2	75.4	77.1	77.8
Northern Devon Healthcare NHS Trust	37	1,400	98.6	96.5	94.1	89.9	1,160	88.1	88.6	88.9	89.1
Wirral University Teaching Hospital NHS Foundation Trust	39	922	80.2	76.1	70.8	64.9	769	76.7	78.0	79.2	79.3
South Warwickshire NHS Foundation Trust	40	1,872	97.4	95.7	91.8	85.0	1,606	53.9	63.3	71.4	75.1
Isle of Wight NHS Trust	41	1,342	91.6	89.6	87.8	86.9	1,107	86.1	86.2	86.4	86.5
St Helens and Knowsley Teaching Hospitals NHS Trust	42	1,459	98.1	97.7	97.0	94.9	1,305	55.8	56.9	57.6	58.2
Wrightington, Wigan and Leigh NHS Foundation Trust	43	1,160	99.4	98.4	96.1	88.4	942	91.6	92.4	92.7	93.0
Warrington and Halton Hospitals NHS Foundation Trust	44	1,193	96.7	95.6	93.0	87.6	954	79.2	80.3	82.8	84.0
South Tees Hospitals NHS Foundation Trust	45	2,342	96.4	95.2	93.1	89.6	1,913	51.6	53.6	55.3	55.9
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	46	2,559	92.3	87.2	80.9	74.2	2,129	52.2	56.0	57.7	58.6
Barking, Havering and Redbridge University Hospitals NHS Trust	47	1,623	86.9	85.4	82.2	78.3	1,303	46.8	49.7	50.6	51.7
Royal Free London NHS Foundation Trust	48	1,894	96.0	95.2	93.5	89.9	1,564	22.0	23.7	24.7	25.3
University Hospitals Coventry and Warwickshire NHS Trust	49	2,726	96.0	94.2	90.6	84.8	2,301	93.5	93.9	94.1	94.3

Appendix 12 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

Centre name	Centre number	Preoperative VA					Postoperative VA				
		Number of eligible operations	6 months %	5 months %	4 months %	3 months %	Number of eligible operations	3 months %	4 months %	5 months %	6 months %
Barnsley Hospital NHS Foundation Trust	50	169	11.2	10.7	5.9	5.3	134	8.2	9.0	9.0	9.0
Salisbury NHS Foundation Trust	51	1,205	99.4	98.6	97.0	93.6	1,027	97.9	98.2	98.2	98.3
London North West University Healthcare NHS Trust	52	549	73.2	68.3	66.1	61.2	461	65.1	65.7	66.8	67.0
Nottingham University Hospitals NHS Trust	55	1,889	87.9	79.6	65.1	49.6	1,564	85.7	86.7	87.1	88.2
Yeovil District Hospital NHS Foundation Trust	56	924	100.0	100.0	99.8	99.6	805	97.8	97.9	98.1	98.1
SpaMedica (Manchester)	57	3,620	99.8	99.5	99.1	97.6	3,053	87.7	88.4	88.8	88.9
SpaMedica (Wakefield)	58	5,708	99.9	99.5	98.9	97.5	4,849	88.8	89.5	89.7	89.9
East Sussex Healthcare NHS Trust	59	3,054	89.4	84.5	76.3	65.8	2,579	55.4	63.0	67.6	71.5
Imperial College Healthcare NHS Trust	60	3,506	92.9	89.1	82.5	71.0	2,929	91.4	93.0	93.7	93.9
Portsmouth Hospitals NHS Trust	61	2,393	96.6	94.7	91.2	83.9	2,016	93.7	93.8	93.9	93.9
Cambridge University Hospitals NHS Foundation Trust	63	2,289	86.9	81.8	75.1	69.6	1,938	72.1	74.7	76.7	78.6
East Kent Hospitals University NHS Foundation Trust	64	2,553	85.5	80.8	75.0	65.3	2,053	53.6	55.4	56.5	57.6
East Suffolk and North Essex NHS Foundation Trust	65	2,638	94.4	93.1	92.6	91.0	2,238	16.4	19.0	21.4	22.7
SpaMedica (Wirral)	66	2,472	99.9	99.7	99.1	98.1	2,025	91.5	92.1	92.3	92.5
County Durham and Darlington NHS Foundation Trust	67	1,615	92.4	87.3	73.6	52.6	1,447	96.5	97.2	97.3	97.3
United Lincolnshire Hospitals NHS Trust	68	1,635	94.8	94.8	94.8	94.7	1,372	53.9	55.2	56.6	57.1
SpaMedica (Newton-le-Willows)	69	1,634	99.9	99.5	99.2	98.0	1,367	89.2	89.8	90.1	90.1
Northampton General Hospital NHS Trust	70	1,892	70.7	69.9	67.7	60.4	1,594	22.4	23.9	24.5	24.7
SpaMedica (Liverpool)	71	1,396	100.0	99.8	99.6	98.4	1,143	86.5	87.1	87.4	87.6
James Paget University Hospitals NHS Foundation Trust	72	1,829	88.4	85.0	77.5	69.2	1,483	74.1	74.4	74.4	74.7
Bolton NHS Foundation Trust	73	1,908	99.4	98.2	96.1	92.3	1,598	87.7	88.5	88.8	89.0
Kingston Hospital NHS Foundation Trust	74	1,344	26.0	24.2	22.0	19.0	1,152	0.2	0.3	0.5	0.6
Northern Lincolnshire and Goole NHS Foundation Trust	75	862	76.2	74.8	71.0	63.9	861	96.3	96.6	96.6	96.6
The Rotherham NHS Foundation Trust	76	615	95.8	94.8	93.2	90.7	483	46.2	47.4	47.6	47.6
Torbay and South Devon NHS Foundation Trust	77	1,413	93.9	91.9	88.7	83.2	1,107	38.7	41.5	43.9	45.4
Great Western Hospitals NHS Foundation Trust	78	1,605	91.0	86.2	79.8	73.4	1,286	81.2	82.4	83.0	83.4
SpaMedica (Bolton)	79	2,737	100.0	99.7	99.2	98.1	2,178	87.2	88.0	88.3	88.4

Appendix 12 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

Centre name	Centre number	Preoperative VA					Postoperative VA				
		Number of eligible operations	6 months %	5 months %	4 months %	3 months %	Number of eligible operations	3 months %	4 months %	5 months %	6 months %
The Princess Alexandra Hospital NHS Trust	80	668	97.3	96.6	94.9	91.5	563	88.6	89.5	90.2	90.8
Wye Valley NHS Trust	81	112	76.8	73.2	63.4	42.9	112	75.0	78.6	78.6	79.5
Cwm Taf University LHB	82	1,370	81.8	80.9	79.0	76.9	1,082	79.1	80.1	80.7	80.8
Sherwood Forest Hospitals NHS Foundation Trust	83	1,150	61.8	60.1	55.5	47.2	987	3.6	5.0	6.3	7.8
Royal Surrey County Hospital NHS Foundation Trust	84	310	97.7	95.5	89.7	71.6	262	94.7	95.0	95.4	96.2
Southport and Ormskirk Hospital NHS Trust	86	818	58.7	57.8	56.2	52.9	682	68.5	69.2	69.6	70.2
Stockport NHS Foundation Trust	87	107	8.4	8.4	6.5	4.7	107	0.0	0.0	0.0	0.0
Care UK (Shepton Mallet NHS Treatment Centre)	88	2,466	99.1	98.1	96.6	91.2	2,079	96.2	96.3	96.3	96.3
Care UK (St Marys NHS Treatment Centre)	89	2,455	99.8	99.5	99.2	98.6	2,094	86.1	86.3	86.3	86.4
Care UK (Emersons Green NHS Treatment Centre)	90	2,446	99.6	99.2	98.0	95.4	2,175	55.4	56.9	57.6	58.0
Care UK (Will Adams NHS Treatment Centre)	91	2,142	99.3	97.9	95.7	90.2	1,761	98.5	98.5	98.5	98.6
SpaMedica (Sheffield)	92	1,718	100.0	100.0	99.8	98.8	1,258	86.5	86.9	87.0	87.0
Care UK (Peninsula NHS Treatment Centre)	93	1,604	95.5	88.5	81.0	75.0	1,287	95.4	96.6	96.8	97.0
North Cumbria University Hospitals NHS Trust	94	1,385	97.5	94.2	92.7	91.8	1,109	8.5	10.2	11.1	12.1
Care UK (Rochdale Ophthalmology Clinical Assessment and Treatment Centre)	95	1,115	98.6	97.6	94.6	87.6	931	74.8	75.3	75.8	76.2
Royal Liverpool and Broadgreen University Hospitals NHS Trust	96	1,051	92.4	90.2	88.0	84.4	756	29.6	31.5	32.5	33.1
Care UK (North East London NHS Treatment Centre)	97	930	88.2	82.2	75.5	63.7	766	94.1	94.6	95.0	95.2
North Middlesex University Hospital NHS Trust	98	887	74.3	64.4	52.8	40.8	642	82.9	83.6	85.4	86.0
Brighton and Sussex University Hospitals NHS Trust	99	466	98.5	98.3	98.1	94.6	119	3.4	4.2	5.0	5.0
Care UK (SH Devizes NHS Treatment Centre)	100	470	100.0	100.0	99.4	98.1	385	99.2	99.2	99.2	99.2
Surrey and Sussex Healthcare NHS Trust	101	440	67.3	62.5	58.9	55.2	395	2.0	2.0	2.3	2.3
Aneurin Bevan University HB	102	427	95.3	94.1	92.3	86.2	262	47.7	49.6	50.0	50.0
Care UK (Southampton NHS Treatment Centre)	103	413	86.7	86.4	85.2	82.8	286	85.3	87.1	87.4	87.4
SpaMedica (Birmingham)	104	219	100.0	100.0	100.0	100.0	29	93.1	93.1	93.1	93.1

Appendix 12 table continued: The percentage of eyes with visual acuity measurements at different time intervals for participating centres in the audit

		Preoperative VA					Postoperative VA				
Centre name	Centre number	Number of eligible operations	6 months %	5 months %	4 months %	3 months %	Number of eligible operations	3 months %	4 months %	5 months %	6 months %
St Stephens Gate Medical Practice	105	202	99.5	99.0	98.5	96.5	196	89.3	89.3	89.3	89.3
The Dudley Group NHS Foundation Trust	106	185	33.0	28.6	26.5	25.4	135	51.9	53.3	54.8	56.3
Abertawe Bro Morgannwg University Health Board	107	114	83.3	83.3	83.3	81.6	103	30.1	30.1	30.1	30.1
East Cheshire NHS Trust	108	50	6.0	6.0	6.0	6.0	0	0.0	0.0	0.0	0.0
Overall for all centres	N/A	213,808	91.9	89.9	86.3	79.8	177,380	72.7	74.4	75.4	76.0

Appendix 13: Operative procedures combined with phacoemulsification ± IOL

Operative procedure	Frequency
Insertion of pupil ring expander	1,920
Automated anterior vitrectomy	1,515
Insertion of iris hooks	1,368
Limbal relaxing incisions / opposite clear corneal incisions	883
Intravitreal injection	841
Capsular tension ring	788
Capsulectomy	582
Stretching of the iris	364
Synaechiolysis	347
Injection of bleb (antimetabolite)	260
Insertion of CyPass implant	254
Injection into anterior chamber	231
Intraoperative phenylephrine	216
Pars plana vitrectomy	155
I/C Miochol	85
Sphincterotomy	61
Washout of anterior chamber	39
Suture of cornea	31
Removal of retained lens fragments	21
IOL exchange	19
Incision of cornea	18
Examination under anaesthesia	17
Fragmatone lensectomy	11
Sub-conjunctival injection	11
IOL removal	10
Anterior chamber paracentesis	8
Peripheral iridectomy	8
Anterior chamber of eye and/or lens operations	7
Orbital floor injection	6
Removal cornea sutures	6
Subtenon steroid injection	5
Other operation on iris	4
Scleral-fixed IOL	4
Broad iridectomy	3
Other conjunctiva operation	3
Insertion of punctal plug	2
Drainage of supra-choroidal haemorrhage	1
IOL polish	1
Perfect capsule	1
Punctual cautery	1
Removal of IOL from vitreous cavity	1
Removal of stent from Baerveldt tube	1

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