National Cataract Surgery Registry

Ministry of Health Malaysia

THE THIRD REPORT OF THE NATIONAL CATARACT SURGERY REGISTRY 2004

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ACKNOWLEDGMENTS

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Dr. Jamaiyah Haniff	Head Clinical Registry Unit Kuala Lumpur Hospital
S/N Lee Poe Poay	Secretariat to NCSR Advisory Committee

ABOUT NATIONAL CATARACT SURGERY REGISTRY

INTRODUCTION

The National Cataract Surgery Registry is a disease outcome registry. It is a prospective, ongoing systematic collection of data pertaining to patients who have had cataract surgery. Data collected include demography, operative events, post-operative visual outcomes and probable causes for poor outcome. These data are used to calculate cataract surgery rates and to evaluate surgical outcome. Such information is useful for performance audit in each participating ophthalmology department, leading to improvement in cataract surgery service, and to assist Ministry of Health, non-governmental organization, private eye care providers and industry in blindness prevention programme planning and evaluation in the country. Analyzed data is presented in report and is disseminated to contributors and other users of the registry at a timely and regular fashion.

NCSR was established in January 2002. In the first year, there are 30 source data producers (SDP) /participating centres in the registry consisting of 28 ophthalmology departments from the Ministry of Health Hospitals, Hospital Angkatan Tentera Kem Terendak, and Universiti Sains Malaysia Hospital. In the year 2003, there were 32 SDP, with addition of Hospital Kuala Lipis, Hospital Selayang and Klinik Azman , but with temporary exclusion of Hospital Miri, due to the absent of ophthalmologist and thus a small number of cataract surgery performed.

OBJECTIVES

The objectives of National Cataract Surgery Registery are to:

1 Determine the frequency and distribution of cataract surgery in Malaysia. These are useful measures of the health burden arising of cataract and its treatment provision in the country
2 Determine the outcomes, and factors influencing outcomes of cataract surgery. This serves the needs of outcome assessment.
3 Evaluate cataract surgery services. This serves the need of accountability.
4 Stimulate and facilitate research on cataract and its management.

The objectives listed above, while typical of any cataract surgery registry, is clearly rather ambitious and certainly cannot be met right away. Thus the registry is implemented in phases.

Phase 1 of the proposed cataract surgery register shall be limited to Public Hospitals only.
Phase 2 of the proposed cataract surgery register shall expand the coverage of Phase 1 to include university, private hospitals and private ophthalmologists in the country.

SPONSORS OF NCSR

Ophthalmology Service, Ministry of Health
Clinical Research Centre, Ministry of Health

CLINICAL RESEARCH CENTRE

The Clinical Research Centre is the designated collaborating unit to the NCSR. It provides the functional capacity to support the operations of the NCSR.

The CRC is the clinical research arm of the Ministry of Health. Apart from the NCSR, CRC currently also supports the National Renal Registry, National Cancer Registry, National Neonatal Registry, National Mental Health Registry, National HIV/AIDS Treatment Registry and National Transplant Registry.

In recent years, CRC has emerged to become the preferred collaborating partner for medical professional groups to establish disease and treatment registries in the country. This is because CRC possesses sophisticated facility and equipment, state of the art technology, and most importantly the trained human resources such as registry managers, epidemiologists, statisticians, information technology professionals and other supporting staff skilled in registry operations. These resources are consolidated in the Disease and Treatment Registry Unit in the CRC. The unit specializes in assisting medical professionals to establish and operate their registries.

Staff of the Clinical Research Centre (CRC) and Cataract Surgery Registry Unit (CSRU) of Clinical Registry Unit (CRU)

Director	Dr. Zaki Morad B Mohamad Zaher
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Head of CRU	Dr. Jamaiyah Binti Haniff
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Assistant Network Administrator	Mr. Adlan Ab. Rahman
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Webmaster/Desktop publisher	Mr. Patrick Lum See Kai
Programmer	Mr. Sebastian Thoo
Statistician	Ms. Teh Poh Geok

CRC

Research that matters to patients

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LIST OF FIGURE

ABBREVIATIONS

CF	Counting finger
CI	Confidence interval
CMO	Cystoid macular oedema
CSRU	Cataract surgery registry unit
ECCE	Extracapsular cataract extraction
HM	Hand movement
IOL	Intraocular lens
ICCE	Intracapsular cataract extraction
NPL	No perception of light
PCO	Posterior capsule opacification
PCR	Posterior capsule rapture
PE	Phacoemulsification
PL	Perception of light
SDP	Source data producers
VA	Visual acuity
ZD	Zonular dialysis

GLOSSARY

Advisory Committee	A committee, board, council, panel or group thereof that is established by the sponsors of the registry to govern the registry. The Advisory Committee shall direct and control the activities of the designated collaborating unit, which manages the day-to-day operations of the registry.
Advisory Committee member	An individual appointed to serve on an advisory committee. Members may have relevant expertise and/or represent the interest of SDP, users or donor.
Chairperson	An advisory committee member who is appointed to preside at committee meetings and ensure that all rules of order and conduct are maintained during each session.
Disease Register	The ongoing systematic collection, analysis and interpretation of a specific disease data essential to the planning, implementation and evaluation of clinical and public health practice, closely integrated with dissemination of these data to those who need to know. The final link in the chain is the application of these data to the management, prevention and control of the disease. A registration system includes a functional capacity for data collection, analysis and dissemination linked to clinical and public health programs.
Secretary	The individual responsible for an advisory committee's overall administrative management. He/she is ordinarily a staff provided by the designated collaborating unit for the purpose.
Source data producer	The individuals or institutions that report the required data to the registry.
Sponsor	The individuals or institutions that own the registry.

REGISTRY METHODS

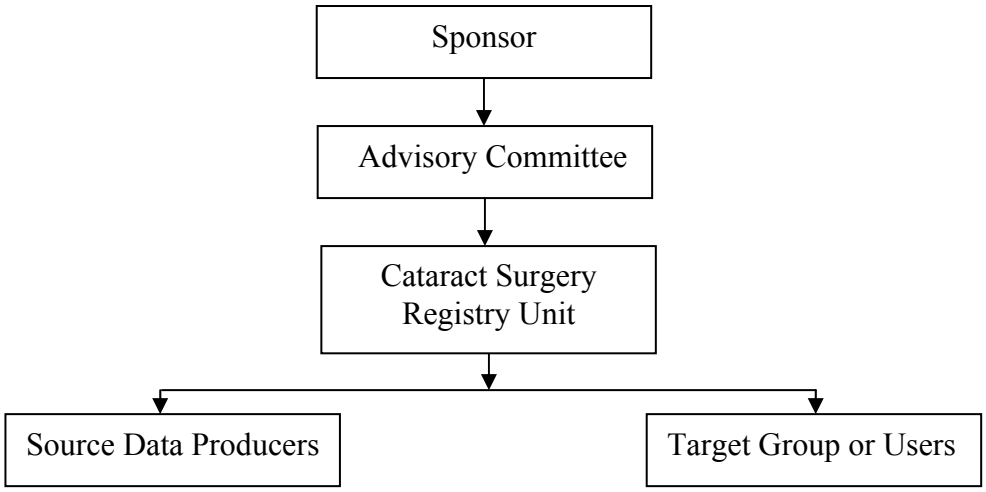
The following aspects of registry methods are described below.

1. Organization and Administrative structure
2. Data standards
3. Data flow process
4. Legal aspects and confidentiality

1. ORGANISATION AND ADMINISTRATIVE STRUCTURE

In brief, the organizational structure of NCSR consists of sponsors, advisory committee, cataract surgery registry unit (CSRU), source data producers and target groups/users. The Ophthalmology Service and the Clinical Research Centre, both of the MOH, jointly sponsor the registry. The NCSR is governed by an advisory committee who oversees the operations of registry. The cataract surgery registry unit, which is based at the Clinical Research Centre, MOH, provides the functional capacity to support the operation of NCSR. The source data producers are Departments of Ophthalmology, both public and private, who provide data on patients who have had cataract surgeries. The users or target groups are individuals or institutions to which the regular registry reports are addressed.

The description of the duties and functions of each entity depicted follows.



Sponsor

The registry is jointly sponsored by the Ophthalmology Service and the Clinical Research Centre; both of the MOH.

Sponsors shall

- Be responsible to Director General of Health, MOH for the effective, efficient and responsive operations of the registry.
- Provide leadership and direction for the registry.
- Establish an Advisory Committee, jointly chair the committee and appoint members to the Advisory committee. Membership should represent all interested parties. These must include source data producers, Target groups or users and representative from the Cataract Surgery Registry Unit.
- Provide the financial, human and information resources required, if necessary with financial contribution from industry or donor agencies.

Advisory Committee
An Advisory Committee for cataract surgery register shall be established by sponsors to oversee the operations of registry. Interested parties including source data producers and target groups or users are represented on this committee.

The Committee shall

- Provide leadership and direction for cataract surgery registry.
- Ensure the continuing relevance of registry.
- Determine policy and procedures for the operations of the registry.
- Designate a collaborating unit to be the Cataract Surgery Registry Unit.
- Oversee the progress of registry.
- Facilitate access to data sources.
- Galvanize commitment of all stakeholders.

Cataract Surgery Registry Unit (CSRU)
The CSRU in the Clinical Research Centre (CRC) is established to provide functional capacity to support the operation of the NCSR. Here, the collection and analysis of data, and feedback of information collected are performed. CSRU is a sophisticated unit staffed by epidemiologist, statistician, information technology personnel and other supporting staff.

To achieve the objectives of the NCSR, the function of CSRU is to ensure:

1. The complete enumeration of all cataract surgery done at the SDP centres
2. The validity of the data collected

Source Data Producers (SDP)
These are individual Departments of Ophthalmology who collects the required data. It is the most costly and difficult element of the system. As the data collected has to be systematic and uniform, and producers of source data need to be trained and motivated to ensure high data quality.

There are 30 Ophthalmology departments under Ministry of Health (MOH), one under Ministry of Defence and 3 in the local universities. Of these public operated ophthalmology departments, 32 registered as source data producers in the year 2003. This gives a coverage rate of 91% in the government hospitals. If only the MOH hospitals are taken into account, the coverage rate is 97%. Of the 32 SDPs, 30 participated for the full year.

Users or Target groups
These are the individuals or institutions to which the regular registry reports are addressed.
They include

- Public health practitioner
- Health provider
- Industry
- Decision maker
- Researcher
- Press and public

It is their needs for information to assist in planning and implementing disease management, control and prevention activity that justify the investment in registry.

2.DATA STANDARDS

The data collected are patient demography, cause of cataract, first or second eye surgery, prior intra-ocular surgery, pre-existing ocular co-morbidity and systemic co-morbidity, pre-operative unaided and refracted vision, surgeon's status, type of admission (day care or non day care surgery), urgency of surgery, type of anesthesia, types of sedation, types of IOL (placement of IOL, material, foldable or non-foldable), and intra-ocular complication, post-operative complications, post-operative best corrected visual acuity by 12 weeks, and possible factors contributing to post-operative refracted VA of worse than 6/12.

3.DATA FLOW PROCESS

Inclusion criteria

All patients, regardless of age, who have undergone cataract surgery, including those who have combined cataract surgery, are included in the registry. Patients who have their lens removal, decided by surgeons while performing the other surgeries, usually during vitreo-retinal surgery were excluded.

Data Collection On Clinical Record Forms

Three clinical record forms are used in NCSR. They are:

i. Pre-clerking record
ii. Operative records
iii. Cataract surgery outcomes through 12 weeks post-op record

These forms are used as medical records in the day-to-day patient care at the eye departments, with duplicate copies to be sent to CSRU. By doing so, there is no additional work in data collection.

The pre-clerking records gather information on patient demography, cause of cataract, first or second eye surgery, prior intra-ocular surgery, pre-existing ocular co-morbidity and systemic co-morbidity, pre-operative unaided and refracted vision; the operative record forms capture data related to surgical procedure, surgeon's status, type of admission (day care or non day care surgery), urgency of surgery, type of anesthesia, both local and systemic sedation, types of IOL (placement of IOL, material, foldable or non-foldable), and intra-ocular complication, and the cataract outcome records collect data on post-operative complications and post-operative best corrected visual acuity by 12 weeks, as well as the possible factors contributing to post-operative refracted VA of worse than 6/12. Refer appendix 1 for the clinical record forms.

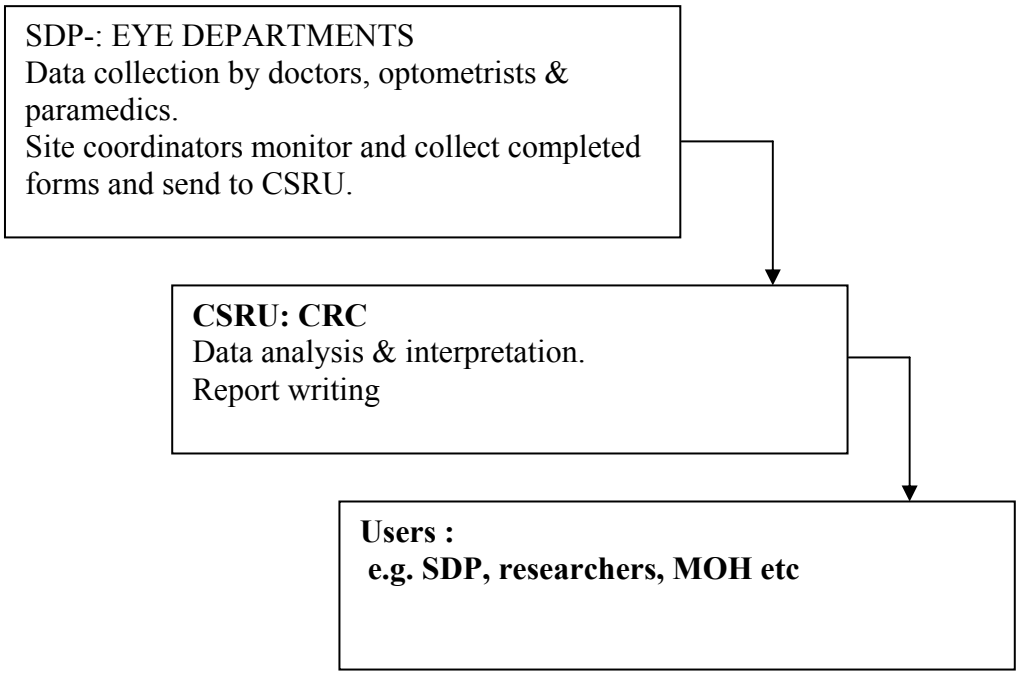
The data transferred to CSRU are kept strictly confidential with access only to authorized individual working in the CSRU.

Data flow

Doctors complete the pre-clerking forms while doing pre-clerking of patients. Upon completion of surgery, the operative records are entered. Post-operative findings and visual outcome findings are filled in the post-operative records by 12 ± 2 weeks post-op. Site coordinators ensure completeness of case ascertainment and completeness of data collection. She/he will send the completed forms, together with the operating list to CSRU in a monthly basis.

Data submission by SDP is tracked by CSRU computer system, which flags any late submission and automatically sends a reminder.

An instruction manual is used as reference and is available at http://www.crc.gov.my/ncsr website . It is also used as a training manual to new doctors and other new staff who join the eye department.



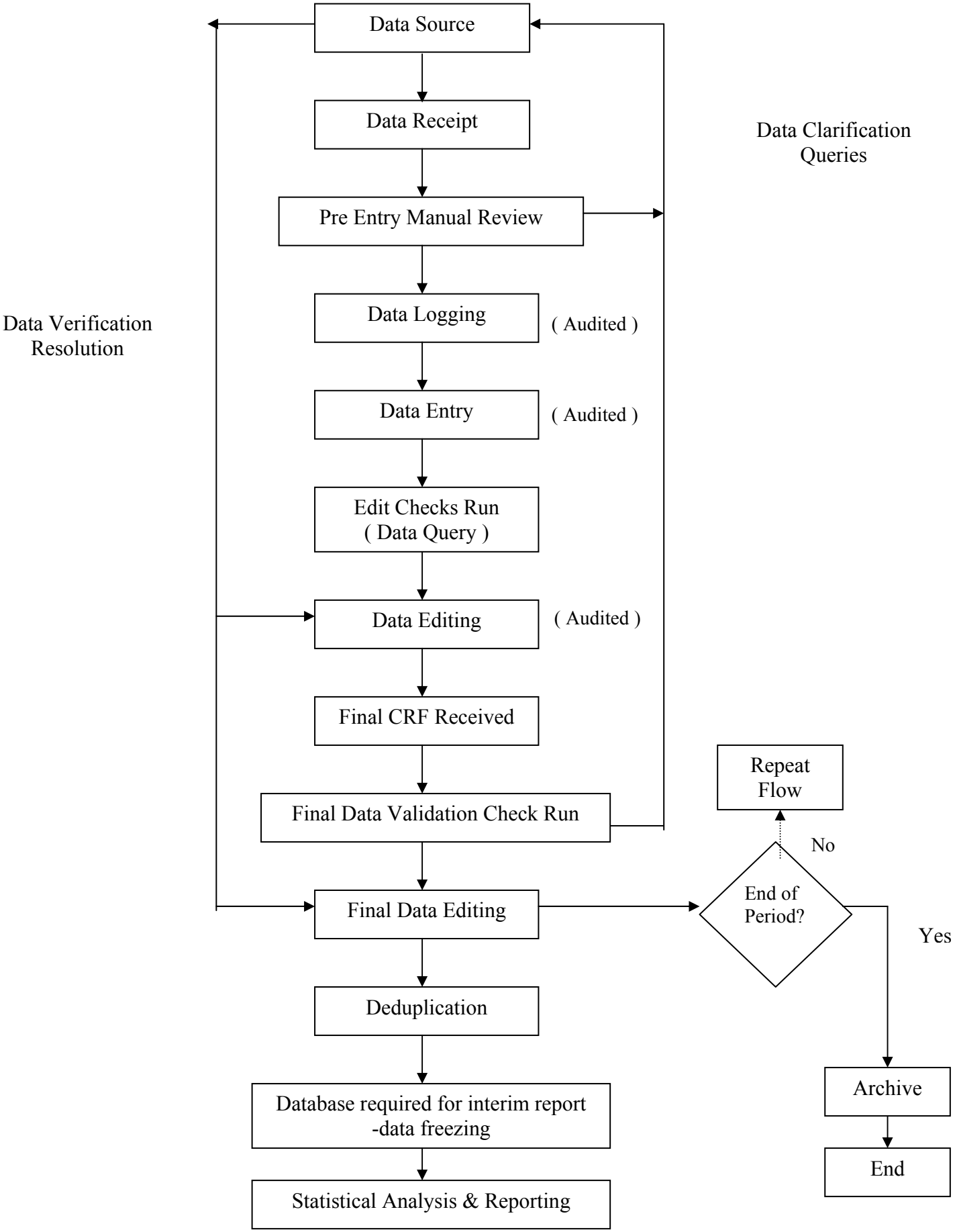
Data Management At CSRU

Visual review, data entry,data update and edit checks

Data received by the CSRU were logged- in and manually reviewed to check for completeness and error. Data without apparent problems were entered into the registry database. Edit checks were performed periodically to identify potential data errors, such as missing data, non-allowed values, out of range numeric values, inconsistent data and error with deduplication. Data queries that are resolved are then updated to the database.

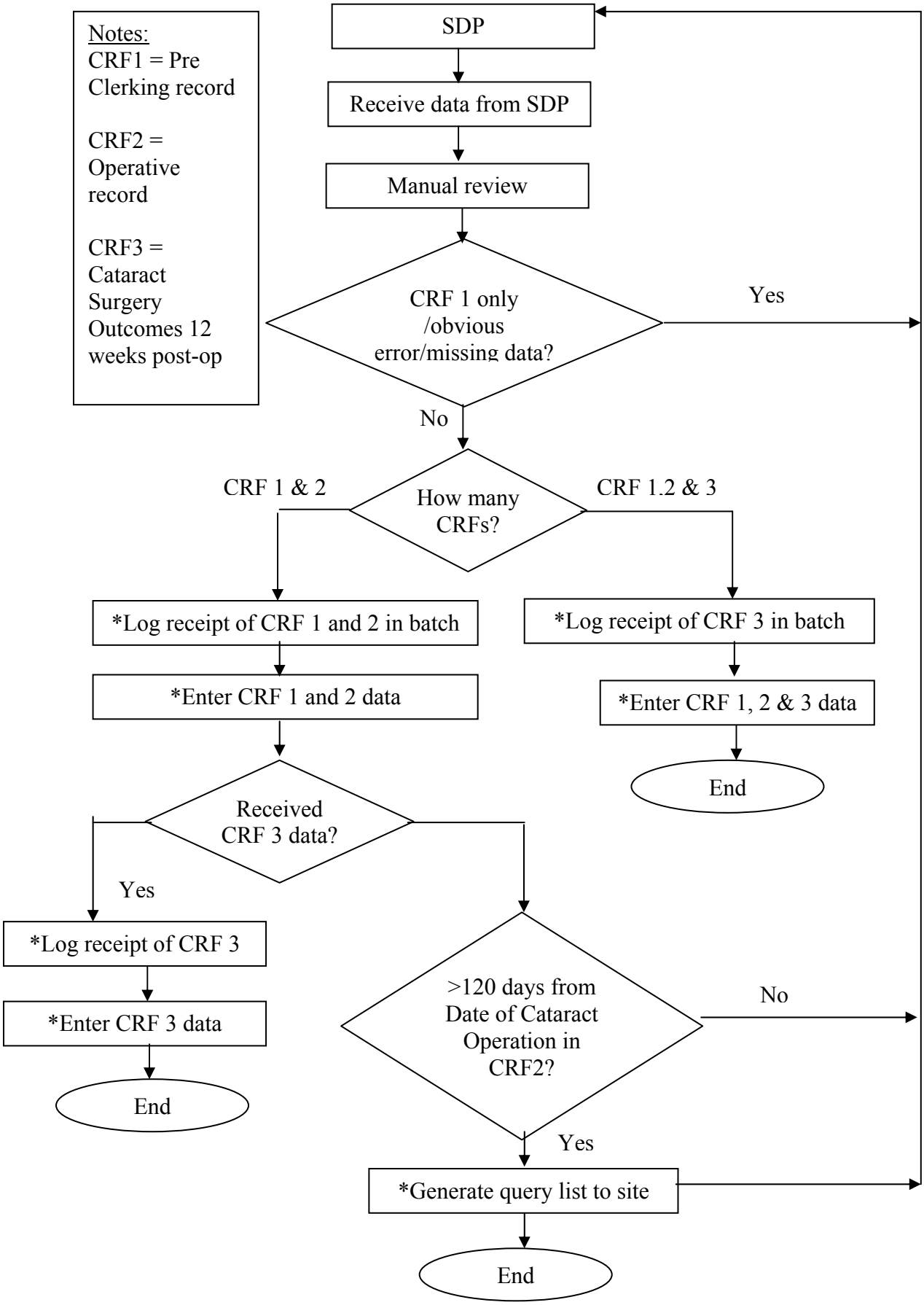
To ensure complete enumeration and validity of data, a series of tasks as shown in the figure below have to be in place.

OVERALL DATA MANAGEMENT FLOW



OVERALL DATA FLOW PROCESS

Functions



Statistical Analysis

Descriptive analysis was employed in this report. All data were described in terms of percentages except continuous data, like follow-up period and age, where summary statistics like mean, median, 25th percentile and 75th percentile were calculated.

We ignored the missing data and confined the analysis to available data. Therefore, no imputation was done.

4.LEGAL ASPECT AND CONFIDENTIALITY

Data transfer from source data producers is entirely voluntary. There is no legal provision to compel any individual or institution to report or transfer its data to the CSRU.

The data transferred to CSRU is of course highly sensitive and has to be kept strictly confidential with access only to authorized individual working in the CSRU. Strict data protection procedure will need to be put in place, following standard disease registration practice, and in compliance with applicable regulatory guidelines.

REPORT SUMMARY

The 2003 annual report contains data from 16,815 patients who had cataract surgery performed in January to December 2003 from 32 SDPs/ centres and whose complete set of clinical record forms (CRF) were received by Cataract Surgery Registry Unit by 31st July, 2004. A total 15,821 patients had complete set of three CRFs. As not all the patients who had cataract surgery done had the complete set of CRFs, the number of surgeries did not reflect the true magnitude of cataract surgery performed in each centre. Two-year comparison was possible for 19 centres as they participated fully for the year 2002 and 2003.As returns of CRF continued after the printing of 2002 annual report, the data for 2002 displayed here may not be the same as that in the printed report.

1. PATIENTS CHARACTERISTICS

2. CATARACT SURGERY PRACTICE

3. CATARACT SURGERY OUTCOMES

3.1 CATARACT SURGERY COMPLICATIONS -INTRA-OPERATIVE

3.2 CATARACT SURGERY COMPLICATIONS -POST-OPERATIVE

3.3 POST-OEPRATIVE FOLLOW UP PERIOD

3.4 POST-OPERATIVE VISUAL ACUITY

3.4.3

3.4 POST-OPERATIVE REFRACTED VA IMPROVED BY ONE OR MORE LINE SNELLEN CHART

3.5.1

3.6 FACTORS CONTRIBUTING TO POST-OPERATIVE VA WORSE THAN 6/12

1. PATIENTS' CHARACTERISTICS

Table 1.1: Age Distributions

Age, Years	N=18392
Mean	63.5
Median	66
Minimum	1 Month
Maximum	104
% Distributions Age Group	
<1 Year	0.3
1-14 Years	1
15-24 Years	1
25-34 Years	1
35-44 Years	3
45-54 Years	12
55-64 Years	27
65-74 Years	38
75-84 Years	15
>=85 Years	2

Figure 1.1: Age Distributions

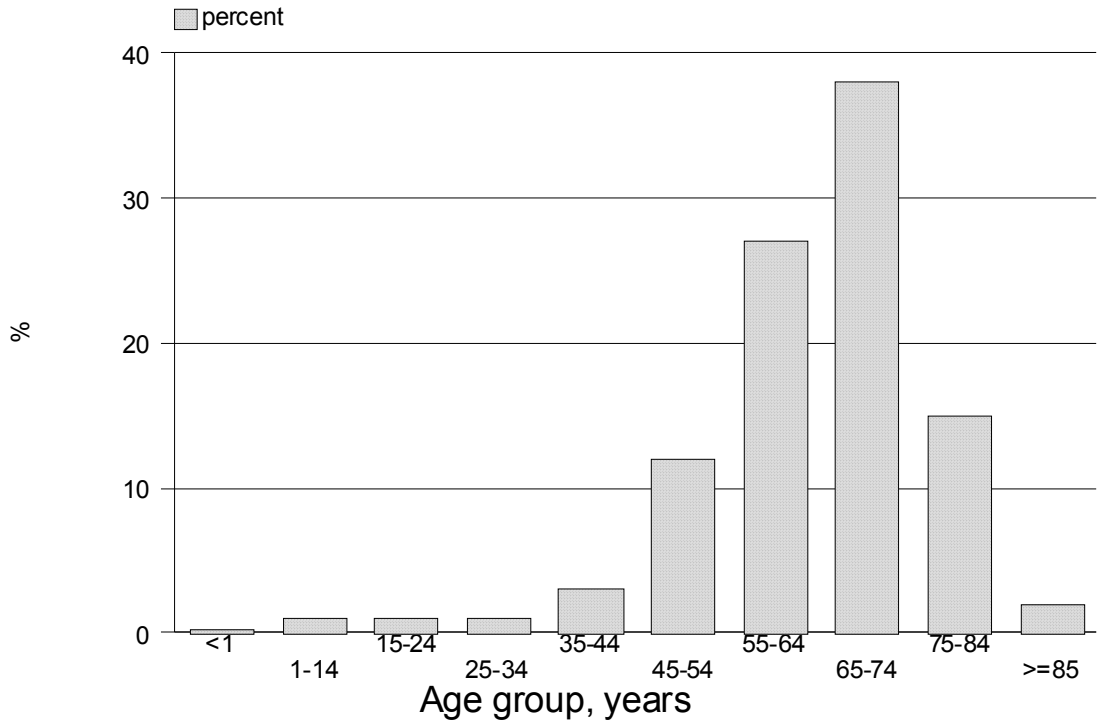


Table 1.2: Gender Distributions

Gender	N=18392 %
Male	49
Female	51

Table 1.3(a) : Number Of Patients With First Eye And Second Eye Surgery

Type Of Surgery	No.	%
N	18392	100
First Eye	12911	70
Second Eye	5481	30

Table 1.3(b): Period Of Time Before Second Eye Surgery

Period, Months	N=3673
Mean	16.88
Sd	18.84
Minimum	0
Maximum	298.87
Median	10.48

Sd=Standard Deviation

Table 1.4: Number Of Patients With Ocular Co-Morbidity

Patients With Ocular Co-Morbidity	No.	%
N	18392	100
Patients With Any Ocular Co-Morbidity	6993	38
Patients With Specific Ocular Co-Morbidity		
Anterior Segment		
1. Pterygium Involving The Cornea	349	2
2. Corneal Opacity	183	1
3. Glaucoma	1238	7
4. Chronic Uveitis	80	0
5. Pseudoexfoliation	209	1
Len Related Complication		
1. Phacomorphic	118	1
2. Phacolytic	79	0
3. Subluxated/Disclosed	86	0
Posterior Segment		
1. Diabetic Retinopathy: Non Proliferative	956	5
2. Diabetic Retinopathy: Proliferative	510	3
3. Diabetic Retinopathy: CSME	163	1
4. Diabetic Retinopathy: Vitreous Haemorrhage	138	1
5. ARMD	308	2
6. Other Macular Disease (Includes Hole Or Scar)	140	1
7. Optic Nerve Disease, Any Type	78	0
8. Retinal Detachment	247	1
9. Cannot Be Assessed	2290	12
Miscellaneous		
1. Amblyopia	78	0
2. Significant Previous Eye Trauma	96	1
3. Pre-Existing Non Glaucoma Field Defect	4	0
Other	1153	6

Table 1.5: Number Of Patients With Systemic Co-Morbidity

Patients With Systemic Co-Morbidity	No.	%
N	18392	100
Patients With Any Systemic Co-Morbidity	11020	60
Patients With Specific Systemic Co-Morbidity		
1.Hypertension	7425	40
2.Diabetes Mellitus	5800	32
3.Ischaemic Heart Disease	1782	10
4.Renal Failure	351	2
5.Cerebrovascular Accident	174	1
6.Coad/Asthma	955	5
7.Hansen's Disease	11	0
8.Allergies	39	0
Other	811	4

Table 1.6(a): Pre-Operative Visual Acuity Measurement

Pre-Operative VA	Unaided		Refracted	
	N=18222	100%	N=2319	100%
	No.	%	No.	%
6/5	1	0	1	0
6/6	25	0	24	1
6/9	112	1	128	6
6/12	385	2	243	10
6/18	790	4	407	18
6/24	1405	8	305	13
6/36	1772	10	271	12
6/60	2086	11	234	10
5/60	291	2	16	1
4/60	352	2	26	1
3/60	539	3	56	2
2/60	718	4	94	4
1/60	1105	6	73	3
CF	3629	20	171	7
HM	3892	21	200	9
PL	1087	6	67	3
NPL	33	0	3	0

Figure 1.6: Pre-Operative Visual Acuity Measurement

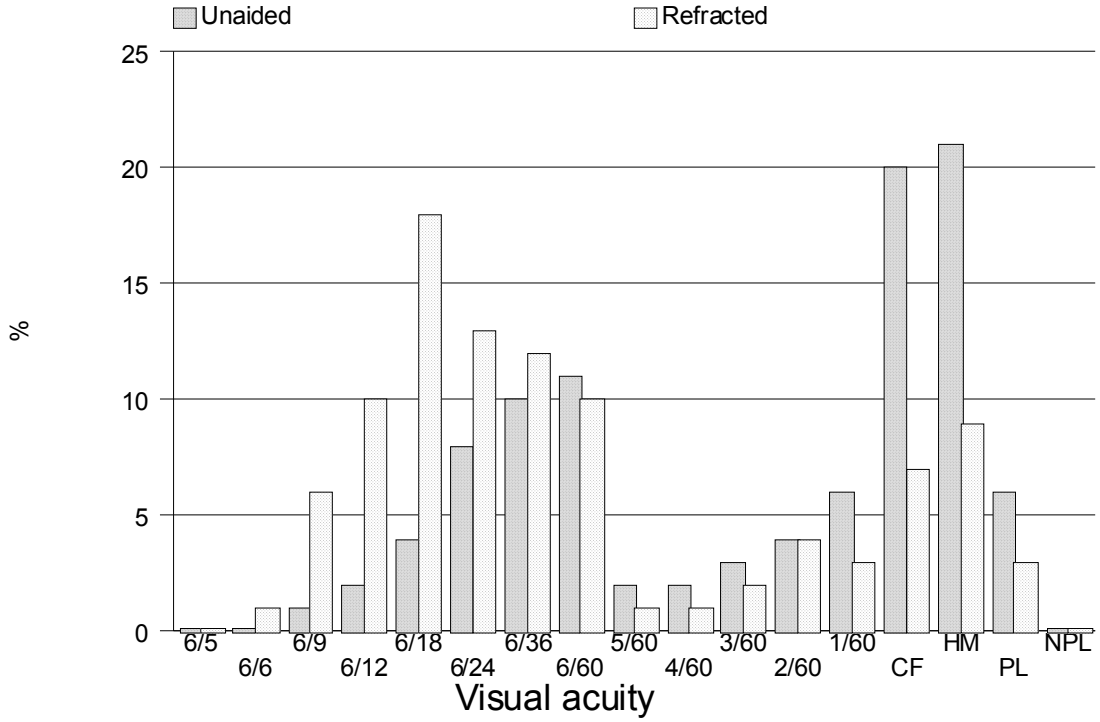


Table 1.6(b): Pre-Operative Visual Acuity Measurement By Gender

Pre-Operative VA 3/60 Or Worse	Unaided		Refracted	
	No.	%	No.	%
N	11003	100	664	100
Gender				
Male	5304	48	320	48
Female	5699	52	344	52

Table 1.7: Causes Of Cataract

Causes Of Cataract	No.	%
N	18392	100
Primary Cataract		
Senile/Age Related	17290	94
Congenital	173	1
Development	209	1
Other	25	0
Secondary Cataract		
Trauma	440	2
Drug Induced	84	0
Surgery Induced	56	0
Other	115	1

2. CATARACT SURGICAL PRACTICES

Table 2.1: Number (%) Of Surgery Done By Month

Month	No.	%
N	18392	100
January	1265	7
February	1424	8
March	1782	10
April	1868	10
May	1426	8
June	1778	10
July	1854	10
August	1447	8
September	1626	9
October	1513	8
November	1077	6
December	1332	7

Figure 2.1: Number (%) Of Surgery

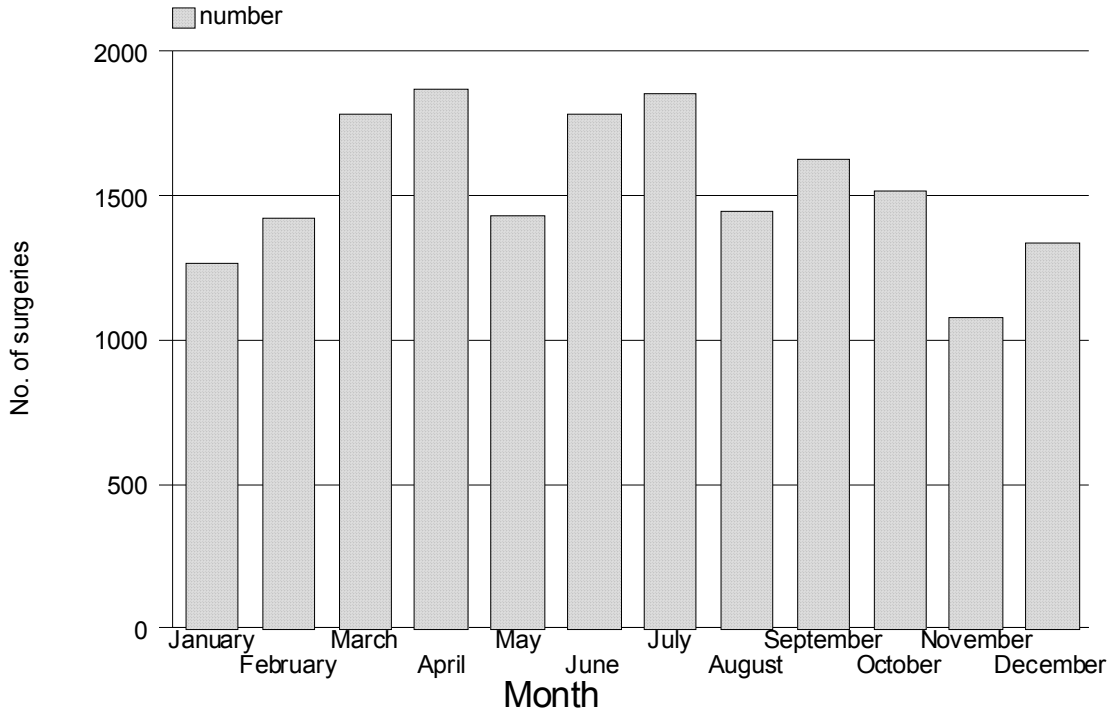


Table 2.2: Number Of Surgery Done By Centre, 2002-2004

	Year 2002		Year 2003		Year 2004	
Centre	No.	%	No.	%	No.	%
All Sites	13025	100	16815	100	18392	100
A	154	1	199	1	167	1
B*	956	7	1063	6	1137	6
C	129	1	133	1	120	1
D	27	0.2	1057	6	816	4
E*	294	2	363	2	315	2
F*	1079	8	858	5	753	4
G*	422	3	274	2	234	1
H*	737	6	672	4	895	5
I*	1017	8	1029	6	1215	7
J*	519	4	605	4	365	2
K*	1141	9	943	6	1125	6
L*	480	4	702	4	889	5
M*	830	6	794	5	906	5
N*	260	2	310	2	300	2
O*	1009	8	844	5	1029	6
P*	414	3	552	3	526	3
Q*	429	3	346	2	402	2
R	188	1	263	2	205	1
S*	392	3	619	4	458	2
T*	421	3	395	2	520	3
U*	801	6	699	4	814	4
V*	268	2	395	2	444	2
W	285	2	597	4	632	3
X	70	1	134	1	238	1
Y	42	0.3	87	1	120	1
Z	213	2	619	4	568	3
Aa	37	0.3	167	1	145	1
Ab	Na	Na	980	6	1311	7
Ac	127	1	539	3	678	4
Ad*	233	2	395	2	190	1
Ae	Na	Na	120	1	Na	Na
Af	Na	Na	62	0.4	20	0
Ag	51	0.4	Na	Na	630	3
Ah	Na	Na	Na	Na	225	1

Footnote: *Centre Which Participated From Jan 2002 To Dec 2004, Full 3 Years
Na = Not available

Figure 2.2: Number Of Surgery Done By Center

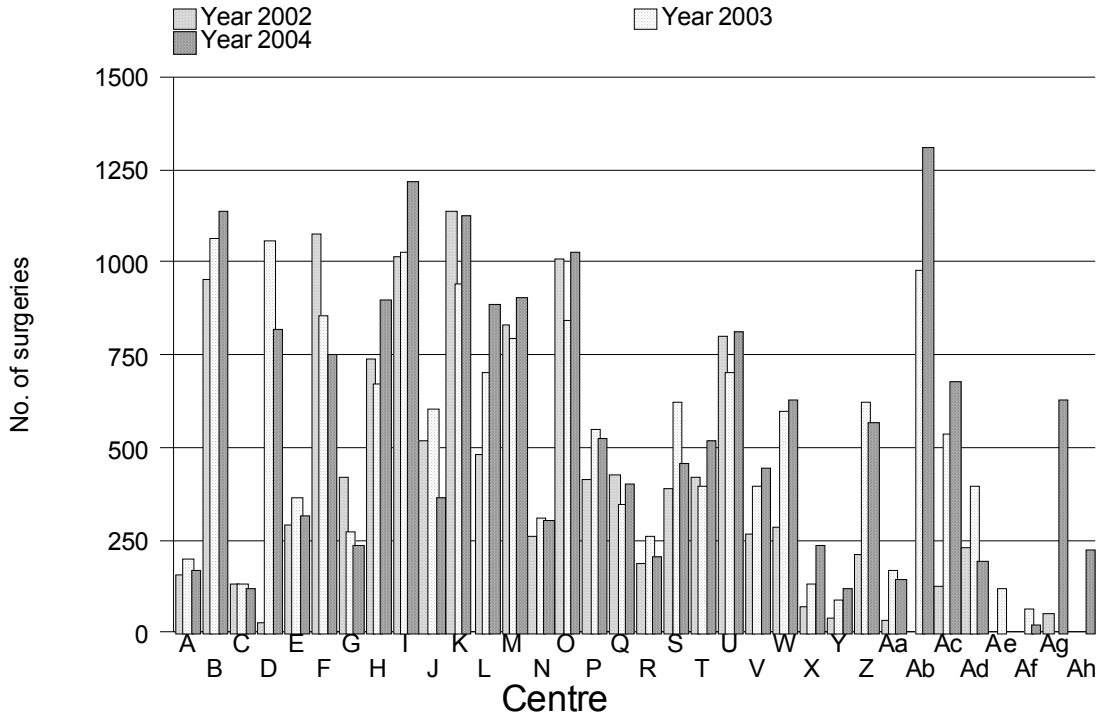


Table 2.3: Distribution Of Day Care Setting By Centre, All Surgery And Those Excluded Children Below 18 Years And Combined Surgery

Centre	Day Care Year 2003						Day Care Year 2004					
	All Surgery			Exclude Children And Combined Surgery			All Surgery			Exclude Children And Combined Surgery		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%
All Sites	16815	6203	37	15981	6089	38	18392	38	62	17336	40	60
A	199	5	3	188	5	3	167	1	99	148	1	99
B	1063	270	25	1002	262	26	1137	28	72	1059	30	70
C	133	0	0	125	0	0	120	2	98	112	2	98
D	1057	30	3	994	27	3	816	3	97	756	3	97
E	363	5	1	329	5	2	315	2	98	293	2	98
F	858	712	83	841	708	84	753	67	33	718	69	31
G	274	111	41	246	100	41	234	33	67	200	38	62
H	672	567	84	617	544	88	895	83	17	812	87	13
I	1029	905	88	957	884	92	1215	88	12	1122	92	8
J	605	0	0	594	0	0	365	4	96	359	4	96
K	943	764	81	922	759	82	1125	81	19	1098	82	18
L	702	55	8	663	55	8	889	29	71	814	31	69
M	794	396	50	736	390	53	906	56	44	872	57	43
N	310	0	0	282	0	0	300	0	100	278	0	100
O	844	48	6	822	47	6	1029	4	96	995	4	96
P	552	132	24	537	130	24	526	3	97	519	3	97
Q	346	175	51	339	175	52	402	31	69	389	32	68
R	263	1	0.4	234	1	0.4	205	1	99	183	1	99
S	619	168	27	599	166	28	458	10	90	446	11	89
T	395	106	27	384	105	27	520	12	88	506	12	88
U	699	8	1	667	8	1	814	2	98	779	2	98
V	395	11	3	379	11	3	444	2	98	427	2	98
W	597	27	5	562	26	5	632	8	92	593	8	92
X	134	97	72	132	96	73	238	47	53	238	47	53
Y	87	68	78	86	68	79	120	90	10	117	91	9
Z	619	525	85	611	519	85	568	85	15	555	85	15
Aa	167	2	1	167	2	1	145	44	56	140	44	56
Ab	980	750	77	876	733	84	1311	78	22	1138	88	12
Ac	539	140	26	527	139	26	678	23	77	661	24	76
Ad	395	5	1	383	5	1	190	9	91	182	9	91
Ae	120	120	100	119	119	100	Na	Na	Na	Na	Na	Na
Af	62	0	0	61	0	0	20	0	100	20	0	100
Ag	Na	Na	Na	Na	Na	Na	630	14	86	586	15	85
Ah	Na	Na	Na	Na	Na	Na	225	92	8	221	92	8

* Dr Goh, Ae is sdp 47 and Ah is sdp 11

Figure 2.3(a): Distribution Of Day Care And In Patient By Centre, Year 2004

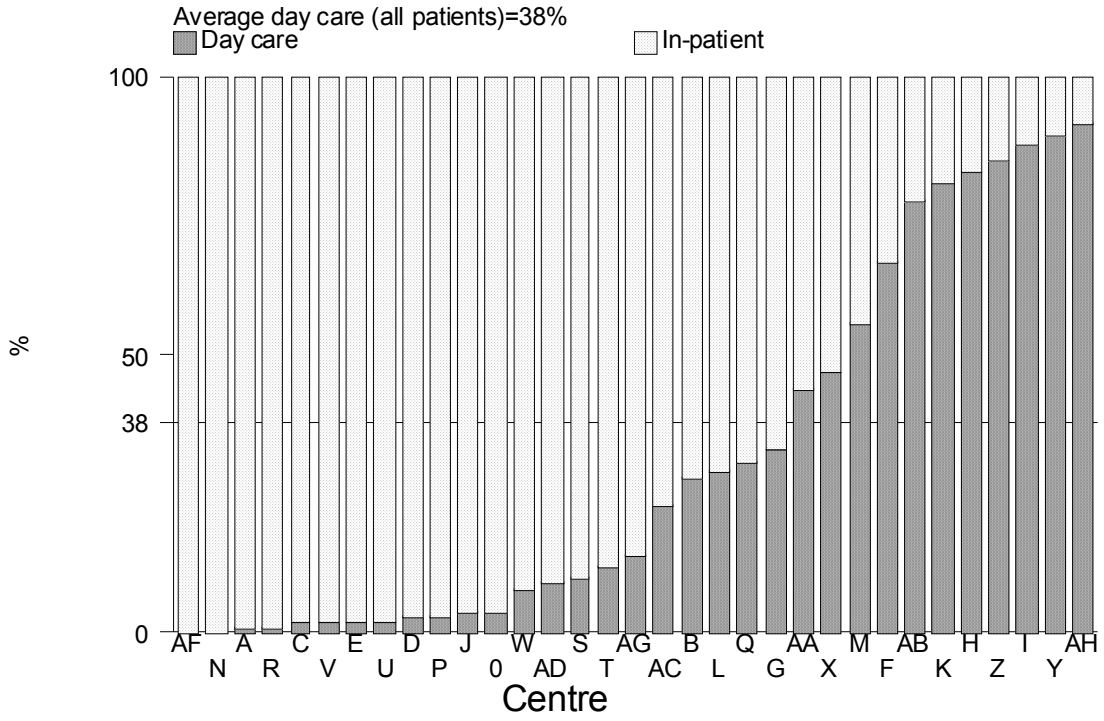


Figure 2.3(b): Distribution Of Day Care And In Patient By Centre (Exclude Children And Those With Combined Surgery), Year 2004

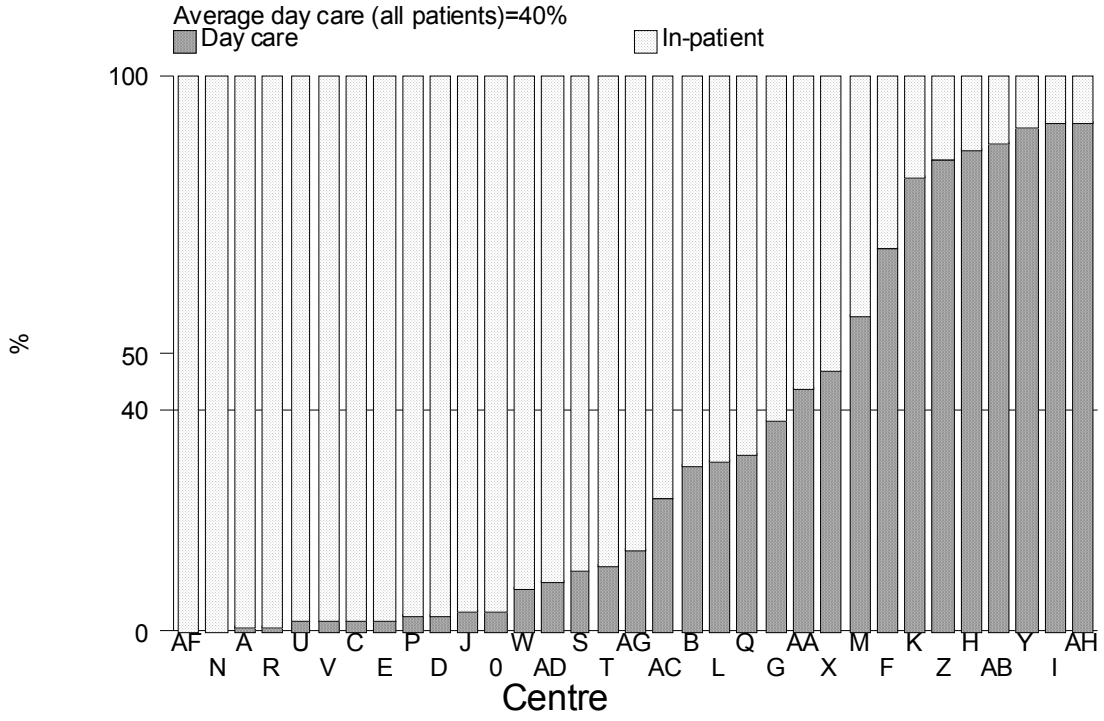


Table 2.4: Distribution Of Types Of Cataract Surgery By Centre

Centre	Types Of Cataract Surgery													
	All Surgeries		Lens Aspiration		ECCE		PE		PE Converted To ECCE		ICCE		Secondary IOL Implant	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
All Centres	18391	100	550	3	7830	43	9282	50	454	2	103	1	172	1
A	167	100	6	4	43	26	116	69	1	1	0	0	1	1
B	1137	100	44	4	603	53	467	41	12	1	9	1	2	0
C	120	100	1	1	119	99	0	0	0	0	0	0	0	0
D	816	100	19	2	479	59	293	36	8	1	6	1	11	1
E	315	100	13	4	262	83	35	11	3	1	0	0	2	1
F	753	100	34	5	280	37	387	51	29	4	3	0	20	3
G	234	100	30	13	121	52	70	30	5	2	5	2	3	1
H	894	100	50	6	403	45	389	44	36	4	6	1	10	1
I	1215	100	26	2	404	33	742	61	13	1	10	1	20	2
J	365	100	5	1	69	19	277	76	13	4	0	0	1	0
K	1125	100	16	1	486	43	577	51	29	3	11	1	6	1
L	889	100	38	4	180	20	630	71	28	3	3	0	10	1
M	906	100	15	2	435	48	420	46	26	3	3	0	7	1
N	300	100	17	6	272	91	6	2	0	0	3	1	2	1
O	1029	100	44	4	385	37	579	56	13	1	3	0	5	0
P	526	100	2	0	109	21	381	72	25	5	7	1	2	0
Q	402	100	12	3	194	48	176	44	18	4	0	0	2	0
R	205	100	1	0	176	86	14	7	11	5	0	0	3	1
S	458	100	5	1	250	55	199	43	4	1	0	0	0	0
T	520	100	24	5	176	34	294	57	21	4	2	0	3	1
U	814	100	28	3	292	36	462	57	17	2	6	1	9	1
V	444	100	19	4	247	56	162	36	14	3	1	0	1	0
W	632	100	32	5	304	48	259	41	17	3	7	1	13	2
X	238	100	1	0	153	64	70	29	12	5	0	0	2	1
Y	120	100	1	1	103	86	13	11	1	1	1	1	1	1
Z	568	100	7	1	272	48	276	49	11	2	2	0	0	0
Aa	145	100	2	1	139	96	1	1	1	1	0	0	2	1
Ab	1311	100	32	2	197	15	1031	79	28	2	2	0	21	2
Ac	678	100	7	1	100	15	529	78	34	5	1	0	7	1
Ad	190	100	6	3	124	65	49	26	6	3	4	2	1	1
Af	20	100	0	0	8	40	12	60	0	0	0	0	0	0
Ag	630	100	9	1	232	37	364	58	18	3	6	1	1	0
Ah	225	100	4	2	213	95	2	1	0	0	2	1	4	2

Table 2.5: Distribution Of Combined Surgery By Centre

Centre		Combined Surgery											
	All Surgeries	Any Combined Surgery		Pterygium Surgery		Filtering Surgery		Vitreo-Retinal Surgery		Penetrating Keratoplasty		Other	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
All Centres	18392	733	4	147	1	235	1	186	1	3	0	149	1
A	167	16	10	16	10	0	0	0	0	0	0	0	0
B	1137	45	4	18	2	21	2	0	0	0	0	7	1
C	120	7	6	3	3	3	3	0	0	0	0	0	0
D	816	42	5	11	1	25	3	0	0	0	0	7	1
E	315	12	4	2	1	7	2	1	0	0	0	2	1
F	753	13	2	0	0	3	0	2	0	0	0	8	1
G	234	23	10	3	1	3	1	0	0	1	0	12	5
H	895	53	6	22	2	8	1	0	0	0	0	7	1
I	1215	69	6	1	0	40	3	16	1	0	0	13	1
J	365	3	1	1	0	1	0	0	0	0	0	1	0
K	1125	22	2	7	1	11	1	4	0	0	0	2	0
L	889	49	6	5	1	20	2	22	2	0	0	3	0
M	906	27	3	0	0	11	1	8	1	0	0	9	1
N	300	12	4	7	2	4	1	0	0	0	0	1	0
O	1029	16	2	3	0	5	0	0	0	0	0	8	1
P	526	6	1	4	1	2	0	0	0	0	0	0	0
Q	402	5	1	0	0	4	1	0	0	0	0	1	0
R	205	20	10	8	4	4	2	0	0	0	0	10	5
S	458	8	2	2	0	4	1	2	0	0	0	0	0
T	520	4	1	0	0	4	1	0	0	0	0	0	0
U	814	22	3	3	0	7	1	4	0	1	0	7	1
V	444	7	2	4	1	1	0	0	0	1	0	1	0
W	632	15	2	3	0	6	1	2	0	0	0	4	1
X	238	0	0	0	0	0	0	0	0	0	0	0	0
Y	120	1	1	0	0	1	1	0	0	0	0	0	0
Z	568	11	2	9	2	1	0	0	0	0	0	1	0
Aa	145	5	3	3	2	1	1	0	0	0	0	0	0
Ab	1311	158	12	3	0	4	0	120	9	0	0	30	2
Ac	678	12	2	3	0	7	1	0	0	0	0	2	0
Ad	190	4	2	2	1	0	0	0	0	0	0	2	1
Af	20	0	0	0	0	0	0	0	0	0	0	0	0
Ag	630	42	7	3	0	26	4	5	1	0	0	9	1
Ah	225	4	2	1	0	1	0	0	0	0	0	2	1

Table 2.6: Proportion Of Nature Of Cataract Surgery

Centre		Nature Of Cataract Surgery			
		Emergency		Elective	
	N	No.	%	No.	%
All Centres	18392	106	1	18286	99
A	167			167	100
B	1137	10	1	1127	99
C	120	1	1	119	99
D	816	2	0	814	100
E	315	2	1	313	99
F	753	4	1	749	99
G	234	9	4	225	96
H	895	4	0	891	100
I	1215	8	1	1207	99
J	365	1	0	364	100
K	1125	12	1	1113	99
L	889	14	2	875	98
M	906	10	1	896	99
N	300			300	100
O	1029	2	0	1027	100
P	526	5	1	521	99
Q	402	2	0	400	100
R	205			205	100
S	458	2	0	456	100
T	520	3	1	517	99
U	814	3	0	811	100
V	444	1	0	443	100
W	632			632	100
X	238			238	100
Y	120			120	100
Z	568			568	100
Aa	145			145	100
Ab	1311	7	1	1304	99
Ac	678	2	0	676	100
Ad	190	2	1	188	99
Af	20			20	100
Ag	630			630	100
Ah	225			225	100

Table 2.7: Type Of Anaesthesia

Centre		Types Of Anaesthesia			
		General		Local	
	N	No.	%	No.	%
All Centres	18392	1379	7	17013	93
A	167	3	2	164	98
B	1137	73	6	1064	94
C	120	6	5	114	95
D	816	87	11	729	89
E	315	19	6	296	94
F	753	120	16	633	84
G	234	42	18	192	82
H	895	49	5	846	95
I	1215	74	6	1141	94
J	365	12	3	353	97
K	1125	77	7	1048	93
L	889	59	7	830	93
M	906	81	9	825	91
N	300	25	8	275	92
O	1029	83	8	946	92
P	526	5	1	521	99
Q	402	32	8	370	92
R	205	5	2	200	98
S	458	22	5	436	95
T	520	98	19	422	81
U	814	131	16	683	84
V	444	27	6	417	94
W	632	51	8	581	92
X	238	29	12	209	88
Y	120	8	7	112	93
Z	568	9	2	559	98
Aa	145	5	3	140	97
Ab	1311	43	3	1268	97
Ac	678	63	9	615	91
Ad	190	13	7	177	93
Af	20			20	100
Ag	630	28	4	602	96
Ah	225			225	100

Figure 2.7: Type Of Anaesthesia

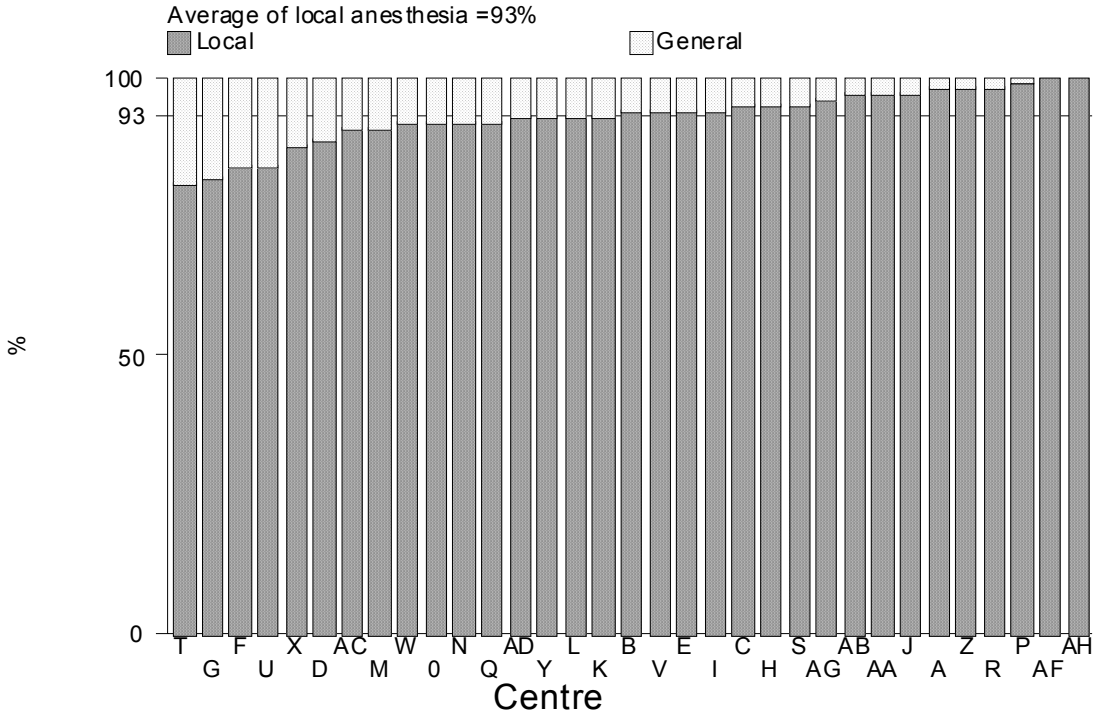


Table 2.8: Type Of Local Anaesthesia

Centre		Local Anaesthesia													
		Retrobulbar		Peribulbar		Subtenon		Subconjunctival		Facial Block		Topical		Other	
	N	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
All Centres	17013	2186	13	2940	17	9260	54	139	1	226	1	3978	23	1	0
A	164					37	23	5	3	1	1	149	91		
B	1064	617	58	9	1	394	37	2	0	19	2	72	7		
C	114	113	99							106	93	1	1		
D	729	44	6	3	0	463	64	91	12	1	0	156	21		
E	296	1	0			294	99	1	0						
F	633	25	4	47	7	480	76	6	1	1	0	94	15		
G	192			2	1	120	63	1	1			72	38		
H	846	2	0	234	28	616	73	6	1	3	0	788	93		
I	1141	2	0	6	1	531	47	7	1	2	0	600	53		
J	353			1	0	350	99	1	0			1	0		
K	1048	6	1	7	1	1036	99								
L	830	53	6	293	35	112	13			39	5	416	50		
M	825	16	2	687	83	215	26	4	0			2	0		
N	275	248	90	2	1	23	8	2	1	22	8				
O	946	412	44	268	28	197	21	1	0			197	21		
P	521	17	3	202	39	193	37					111	21		
Q	370	1	0	1	0	216	58					157	42		
R	200			131	66	68	34					1	1		
S	436	1	0			249	57	5	1			219	50		
T	422	195	46	63	15	196	46			5	1	26	6		
U	683	22	3	120	18	546	80	3	0						
V	417	2	0	1	0	362	87			2	0	52	12	1	0
W	581	2	0	1	0	577	99					1	0		

Centre		Local Anaesthesia													
		Retrobulbar		Peribulbar		Subtenon		Subconjunctival		Facial Block		Topical		Other	
	N	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
X	209	12	6			196	94					1	0		
Y	112					112	100								
Z	559			3	1	556	99								
Aa	140	2	1	95	68	55	39								
Ab	1268	175	14	158	12	350	28	1	0	1	0	602	47		
Ac	615	8	1	207	34	405	66					1	0		
Ad	177	126	71	55	31	46	26			2	1				
Af	20	14	70	1	5	5	25			1	5				
Ag	602	60	10	131	22	258	43	3	0	21	3	179	30		
Ah	225	10	4	212	94	2	1					80	36		

* % May Add To More Than 100 % As One Patient Might Have More Than One Type Of Local Anaesthesia.

Table 2.9: Distribution Of Single And Multiple Local Anaesthesia

Centre		Local Anaesthesia			
		Single		Multiple	
	N	No.	%	No.	%
All Centres	17013	15335	90	1678	10
A	164	136	83	28	17
B	1064	1016	95	48	5
C	114	8	7	106	93
D	729	700	96	29	4
E	296	296	100		
F	633	613	97	20	3
G	192	189	98	3	2
H	846	50	6	796	94
I	1141	1134	99	7	1
J	353	353	100		
K	1048	1047	100	1	0
L	830	767	92	63	8
M	825	729	88	96	12
N	275	253	92	22	8
O	946	817	86	129	14
P	521	519	100	2	0
Q	370	365	99	5	1
R	200	200	100		
S	436	399	92	37	8
T	422	362	86	60	14
U	683	675	99	8	1
V	417	414	99	3	1
W	581	581	100		
X	209	209	100		
Y	112	112	100		
Z	559	559	100		
Aa	140	128	91	12	9
Ab	1268	1249	99	19	1
Ac	615	609	99	6	1
Ad	177	129	73	48	27
Af	20	19	95	1	5
Ag	602	552	92	50	8
Ah	225	146	65	79	35

Table 2.10: Type Of Sedation Given To Patient Who Had Local Anaesthesia

Centre		Types Of Sedation									
		No Sedation		Oral Alone		Intravenous Alone		Intravenous Plus Oral		Intra-Muscular	
	N	No.	%	No.	%	No.	%	No.	%	No.	%
All Centres	17013	14031	82	2729	16	144	1	15	0	104	1
A	164	163	99	1	1						
B	1064	916	86	106	10	42	4	2	0	1	0
C	114	32	28							82	72
D	729	582	80	126	17	22	3				
E	296	94	32	202	68						
F	633	621	98	10	2	1	0	1	0	1	0
G	192	185	96			7	4				
H	846	838	99	6	1					3	0
I	1141	1135	99	6	1						
J	353	346	98	7	2						
K	1048	402	38	638	61	7	1	2	0		
L	830	828	100	2	0						
M	825	477	58	338	41	6	1	4	0	2	0
N	275	175	64	98	36	2	1				
O	946	417	44	529	56						
P	521	348	67	173	33						
Q	370	369	100	1	0						
R	200	173	87	27	14						
S	436	435	100			1	0				
T	422	407	96	7	2					8	2
U	683	671	98	3	0	7	1	2	0		
V	417	282	68	134	32					1	0
W	581	550	95	30	5			1	0		
X	209	39	19	170	81						
Y	112	112	100								
Z	559	552	99	5	1	1	0			1	0
Aa	140	116	83	24	17						
Ab	1268	1222	96	10	1	33	3	3	0	1	0
Ac	615	613	100	2	0						
Ad	177	163	92	1	1	13	7				
Af	20	18	90	1	5	1	5				
Ag	602	539	90	58	10	1	0			4	1
Ah	225	211	94	14	6						

* % May Add To More Than 100 % As One Patient Might Have More Than One Type Of Sedation.

Table 2.11: Intraocular Lens Implantation

2.11(a) IOL Implantation

	No.	%
With IOL	17941	98
Without IOL	448	2
All	18389	100

2.11(b) Distribution Of IOL Placement

Centre		Cataract Surgery With IOL					
		Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL	
	N	No.	%	No.	%	No.	%
All Centres	17941	17410	97	497	3	34	0
A	167	165	99	2	1		
B	1119	1101	98	18	2		
C	120	115	96	5	4		
D	800	775	97	25	3		
E	300	297	99	3	1		
F	719	688	96	28	4	3	0
G	209	192	92	17	8		
H	865	842	97	23	3		
I	1180	1140	97	24	2	16	1
J	359	354	99	4	1	1	0
K	1097	1041	95	56	5		
L	870	845	97	22	3	3	0
M	887	859	97	27	3	1	0
N	290	277	96	13	4		
O	995	977	98	16	2	2	0
P	516	490	95	25	5	1	0
Q	393	388	99	5	1		
R	200	194	97	6	3		
S	456	445	98	11	2		
T	507	499	98	6	1	2	0
U	792	748	94	44	6		
V	441	434	98	7	2		
W	620	606	98	10	2	4	1
X	236	223	94	13	6		
Y	117	115	98	2	2		
Z	567	559	99	8	1		
Aa	142	135	95	7	5		
Ab	1281	1247	97	34	3		
Ac	665	652	98	12	2	1	0
Ad	174	169	97	5	3		
Af	18	18	100				
Ag	626	612	98	14	2		
Ah	213	208	98	5	2		

Table 2.12: Distribution Of Cataract Surgery Without IOL

Centre		Cataract Surgery Without IOL			
		IOL Planned But Not Implanted		No IOL Was Planned	
	N	No.	%	No.	%
All Centres	448	174	39	274	61
A	0	0	0	0	0
B	18	7	39	11	61
C	0	0	0	0	0
D	16	6	38	10	63
E	15	4	27	11	73
F	34	15	44	19	56
G	25	6	24	19	76
H	30	9	30	21	70
I	35	15	43	20	57
J	6	3	50	3	50
K	28	13	46	15	54
L	19	4	21	15	79
M	19	5	26	14	74
N	10	6	60	4	40
O	34	12	35	22	65
P	10	2	20	8	80
Q	9	3	33	6	67
R	5	4	80	1	20
S	2	0	0	2	100
T	12	7	54	5	38
U	22	6	27	16	73
V	3	2	67	1	33
W	12	2	17	10	83
X	2	2	100	0	0
Y	3	2	67	1	33
Z	1	1	100	0	0
Aa	2	0	0	2	100
Ab	30	11	37	19	63
Ac	13	6	46	7	54
Ad	15	8	50	7	44
Af	2	1	50	1	50
Ag	4	3	75	1	25
Ah	12	9	75	3	25

Table 2.13: Distribution Of IOL- Materials And Types

IOL	No.	%
N	17953	100
Materials		
Pmma	9758	54
Silicone	1078	6
Acrylic	7105	40
Other	12	0
N	17950	100
Types		
Foldable	8188	46
Non-Foldable	9762	54

3. CATARACT SURGERY OUTCOMES

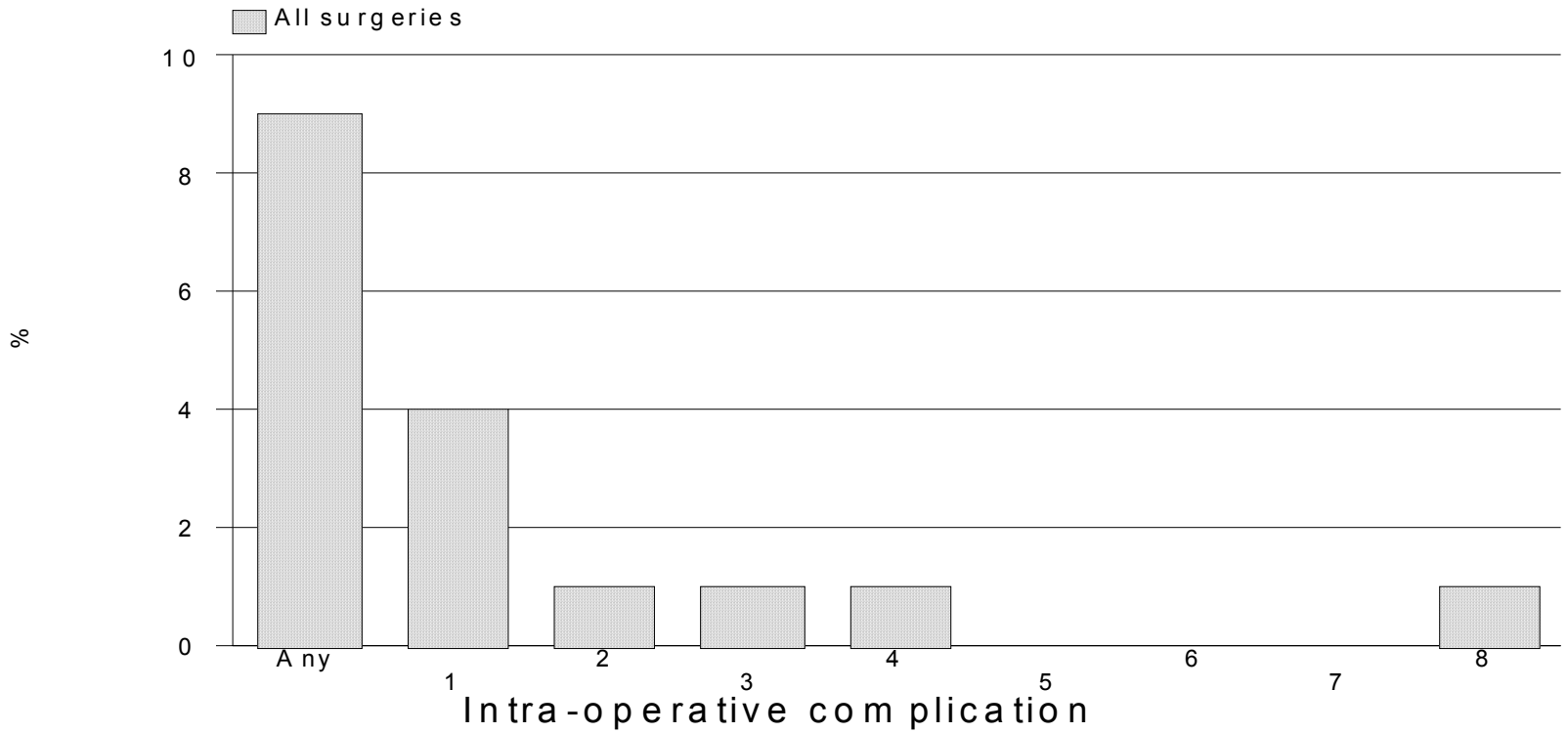
3.1 Cataract Surgery Complications - Intra-Operative

Table 3.1.1: Distribution Of Intra-Operative Complications By Type Of Cataract Surgery

Type Of Intra-Operative Complications	Types Of Cataract Surgery													
	All Surgeries		Lens Aspiration		ECCE		PE		PE TO ECCE		ICCE		Secondary IOL Implant	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	18391	100	550	100	7830	100	9282	100	454	100	103	100	172	100
Any Intra-Op Complication	1730	9	58	11	680	9	747	8	177	39	50	49	18	10
1.Posterior Capsule Rupture With Vitreous Loss	760	4	27	5	276	4	357	4	81	18	9	9	10	6
2.Posterior Capsule Rupture Without Vitreous Loss	265	1	11	2	80	1	156	2	14	3	2	2	2	1
3.Zonular Dialysis With Vitreous Loss	234	1	5	1	121	2	46	0	42	9	18	17	2	1
4.Zonular Dialysis Without Vitreous Loss	146	1	1	0	66	1	61	1	13	3	5	5	0	0
5.Loss Of Nucleus Material Into Vitreous	34	0	1	0	1	0	26	0	3	1	2	2	1	1
6.Choroidal/Suprachoroidal Haemorrhage	10	0	0	0	5	0	2	0	1	0	1	1	1	1
7.Significant Trauma To Cornea Or Iris	78	0	1	0	43	1	24	0	5	1	4	4	1	1
8.Other	235	1	14	3	89	1	97	1	23	5	10	10	2	1

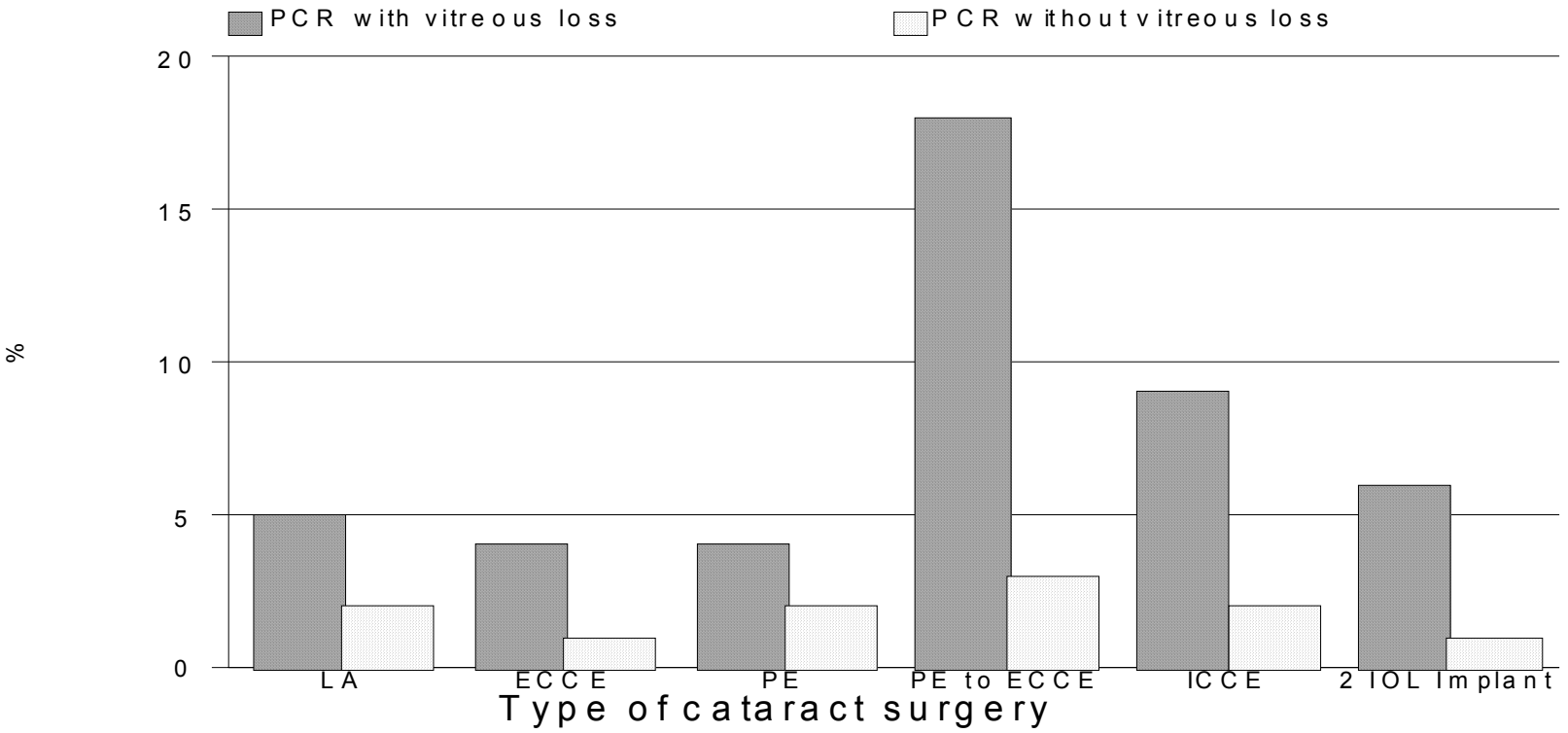
* Number In Each Column Might Add Up To Be More Than That Recorded At Row With ‘ Any Intra-Op Complication’ As One Patient Might Have More Than One Type Of Intra-Operative Complications.

Figure 3.1.1.1 Distribution Of Intra-Operative Complication



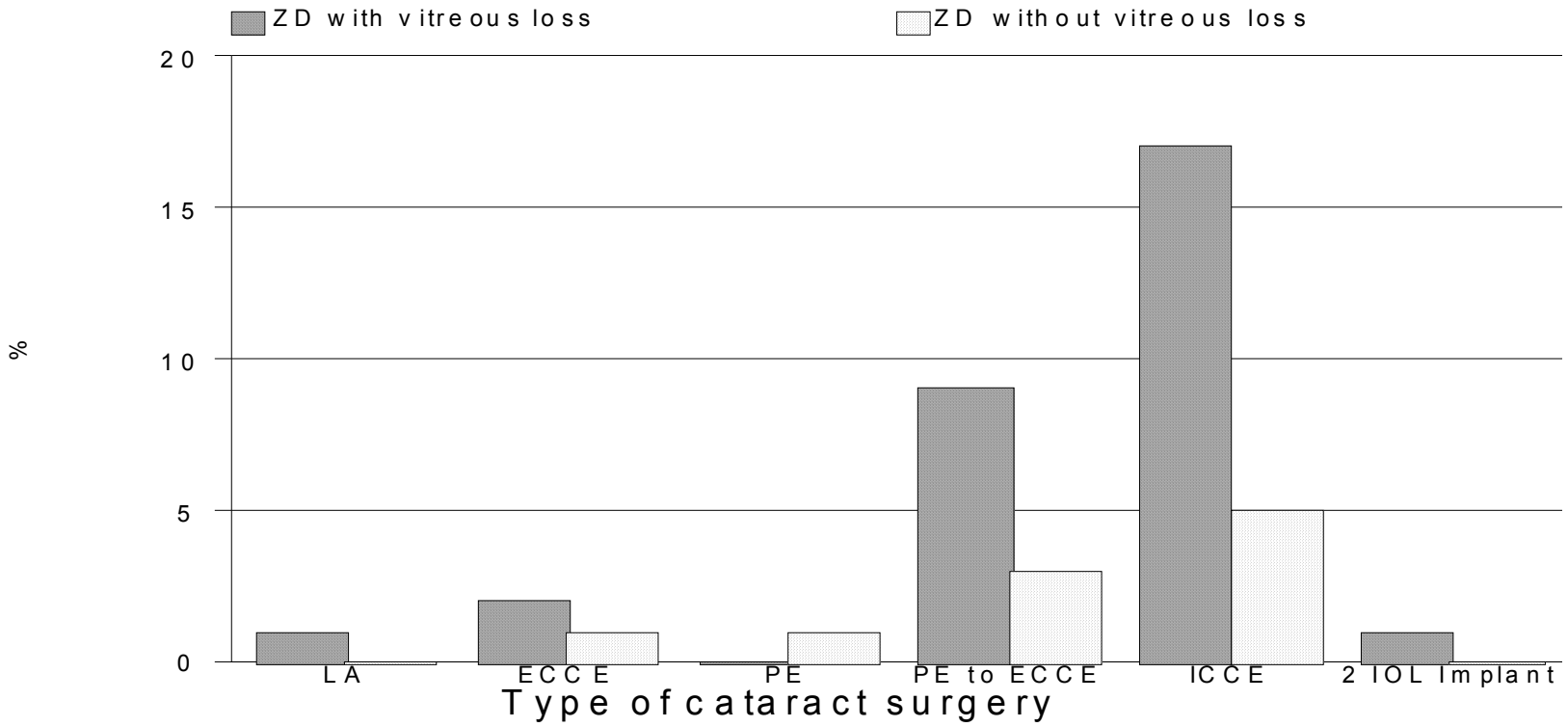
Intra-Operative Complication: Index Refers To Table 3.1.1

Figure 3.1.1.2: Distribution Of Intra-Operative Complication By Posterior Capsule Rupture With Vitreous Loss And Posterior Capsule Rupture Without Vitreous Loss



LA=Lens Aspiration
2 IOL Implant=Secondary IOL Implant

Figure 3.1.1.3: Distribution Of Intra-Operative Complication By Zonular Dialysis With Vitreous Loss And Zonular Dialysis Without Vitreous Loss



LA=Lens Aspiration
2 IOL Implant=Secondary IOL Implant

Table 3.1.2: Distribution Of Intra-Operative Complications By Combined Surgery

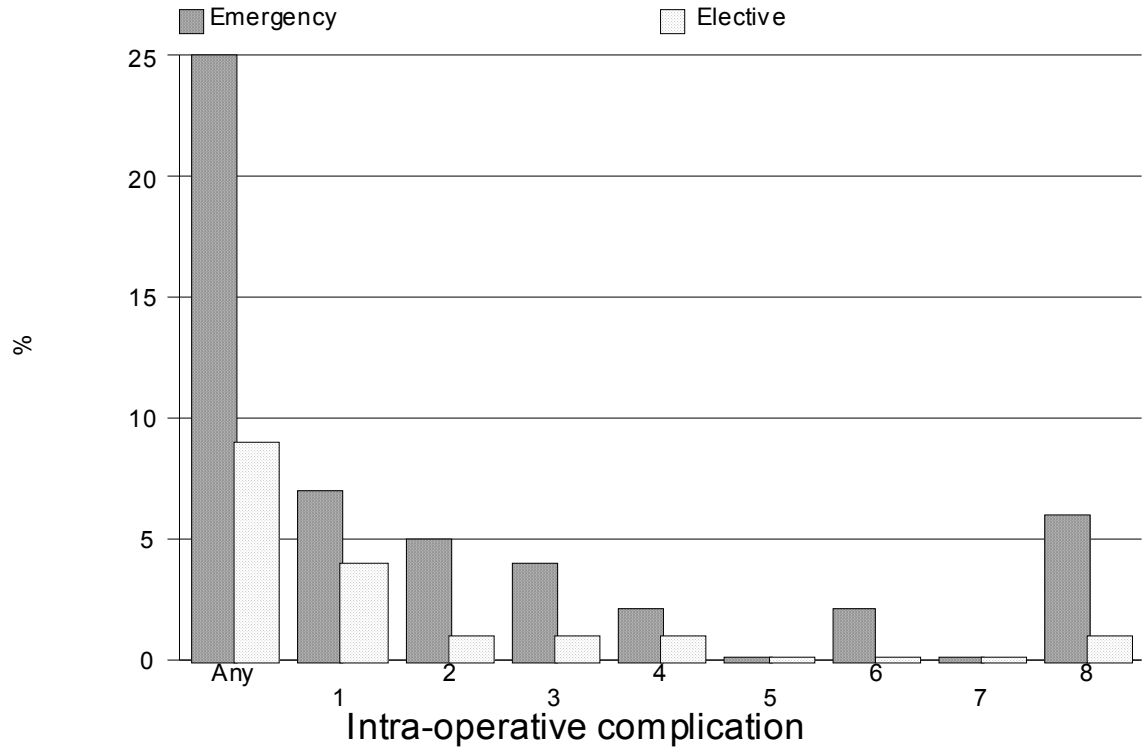
Type Of Intra-Operative Complications	Combined Surgery													
	All Surgeries		Any Combined Surgery		Pterygium Surgery		Filtering Surgery		Vitreo-Retinal Surgery		Penetrating Keratoplasty		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	18392	100	733	100	147	100	235	100	186	100	3	100	149	100
Any Intra-Op Complication	1730	9	120	16	9	6	24	10	25	13	1	33	56	38
1.Posterior Capsule Rupture With Vitreous Loss	760	4	53	7	5	3	11	5	7	4	0	0	28	19
2.Posterior Capsule Rupture Without Vitreous Loss	265	1	24	3	0	0	3	1	11	6	0	0	8	5
3.Zonular Dialysis With Vitreous Loss	234	1	18	2	2	1	3	1	1	1	0	0	11	7
4.Zonular Dialysis Without Vitreous Loss	146	1	5	1	1	1	1	0	3	2	0	0	0	0
5.Loss Of Nucleus Material Into Vitreous	34	0	5	1	0	0	0	0	3	2	0	0	2	1
6.Choroidal/Suprachoroidal Haemorrhage	10	0	4	1	0	0	1	0	0	0	1	33	2	1
7.Significant Trauma To Cornea Or Iris	78	0	4	1	0	0	1	0	1	1	0	0	2	1
8.Other	235	1	16	2	1	1	4	2	2	1	0	0	9	6

*Number In Each Column Might Add Up To Be More Than That Recorded At Row With ‘ Any Intra-Operative Complication’ As One Patient Might Have More Than One Type Of Intra-Operative Complications

Table 3.1.3: Distribution Of Intra-Operative Complications By Nature Of Cataract Surgery

Type Of Intra-Operative Complications	Nature Of Cataract Surgery					
	All Patients		Emergency		Elective	
	No.	%	No.	%	No.	%
N	18392	100	106	100	18286	100
Any Intra-Op Complication	1730	9	26	25	1704	9
1.Posterior Capsule Rupture With Vitreous Loss	760	4	7	7	753	4
2.Posterior Capsule Rupture Without Vitreous Loss	265	1	5	5	260	1
3.Zonular Dialysis With Vitreous Loss	234	1	4	4	230	1
4.Zonular Dialysis Without Vitreous Loss	146	1	2	2	144	1
5.Loss Of Nucleus Material Into Vitreous	34	0	0	0	34	0
6.Choroidal/Suprachoroidal Haemorrhage	10	0	2	2	8	0
7.Significant Trauma To Cornea Or Iris	78	0	0	0	78	0
8.Other	235	1	6	6	229	1

Figure 3.1.3: Distribution Of Intra-Operative Complications By Nature Of Cataract Surgery

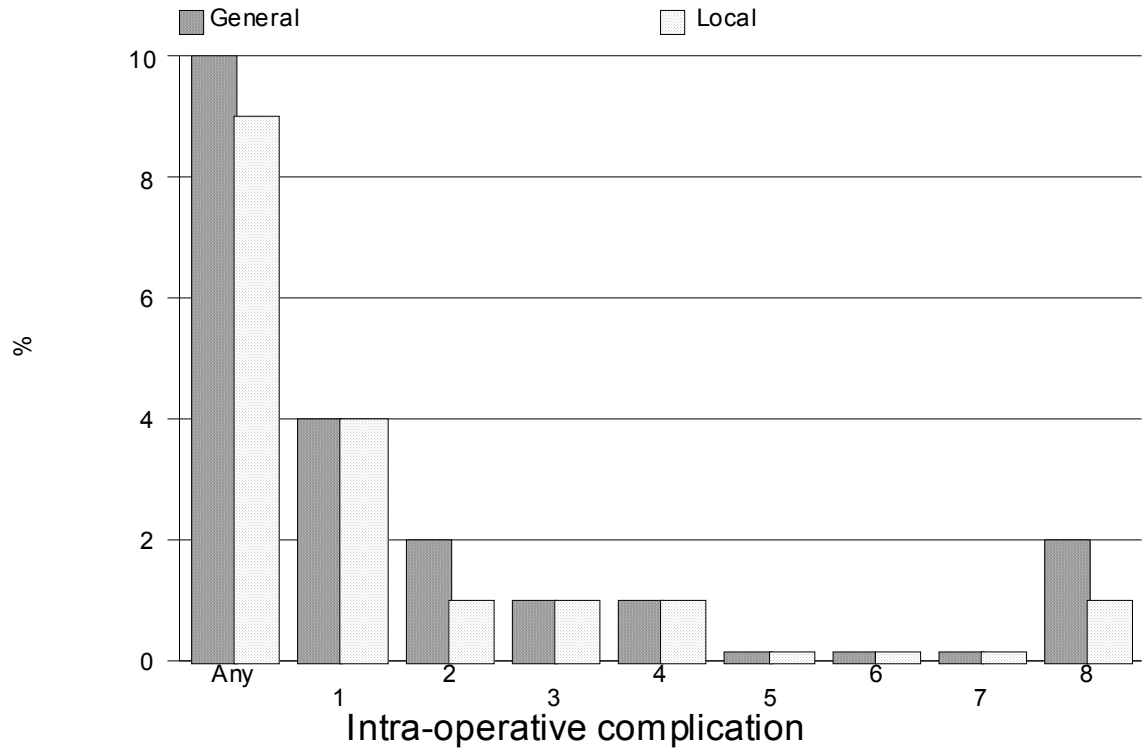


Intra-Op Complication: Index Refers To Table 3.1.3

Table 3.1.4: Distribution Of Intra-Operative Complications By Type Of Anaesthesia

Type Of Intra-Operative Complications	Types Of Anaesthesia					
	All Patients		General		Local	
	No.	%	No.	%	No.	%
N	18392	100	1379	100	17013	100
Any Intra-Op Complication	1730	9	133	10	1597	9
1.Posterior Capsule Rupture With Vitreous Loss	760	4	51	4	709	4
2.Posterior Capsule Rupture Without Vitreous Loss	265	1	22	2	243	1
3.Zonular Dialysis With Vitreous Loss	234	1	18	1	216	1
4.Zonular Dialysis Without Vitreous Loss	146	1	16	1	130	1
5.Loss Of Nucleus Material Into Vitreous	34	0	3	0	31	0
6.Choroidal/Suprachoroidal Haemorrhage	10	0	2	0	8	0
7.Significant Trauma To Cornea Or Iris	78	0	4	0	74	0
8.Other	235	1	22	2	213	1

Figure 3.1.4: Distribution Of Intra-Operative Complications By Type Of Anaesthesia



Intra-Op Complication: Index Refers To Table 3.1.4

Table 3.1.5: Distribution Of Intra-Operative Complications By Type Of Local Anaesthesia

Type Of Intra-Op Complications	Types Of Local Anaesthesia															
	Local Anaesthesia		Retrobulbar		Peribulbar		Subtenon		Sub-Conjunctival		Facial Block		Topical		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	17013	100	2186	100	2940	100	9260	100	139	100	226	100	3978	100	1	100
Any Intra-Op Complication	1597	9	183	8	292	10	967	10	10	7	16	7	274	7	0	0
1.Posterior Capsule Rupture With Vitreous Loss	709	4	97	4	140	5	402	4	2	1	12	5	138	3	0	0
2.Posterior Capsule Rupture Without Vitreous Loss	243	1	28	1	38	1	145	2	3	2	1	0	52	1	0	0
3.Zonular Dialysis With Vitreous Loss	216	1	16	1	51	2	139	2	1	1	0	0	24	1	0	0
4.Zonular Dialysis Without Vitreous Loss	130	1	13	1	19	1	86	1	1	1	0	0	17	0	0	0
5.Loss Of Nucleus Material Into Vitreous	31	0	6	0	5	0	19	0	0	0	0	0	6	0	0	0
6.Choroidal/Suprachoroidal Haemorrhage	8	0	1	0	1	0	4	0	0	0	0	0	2	0	0	0

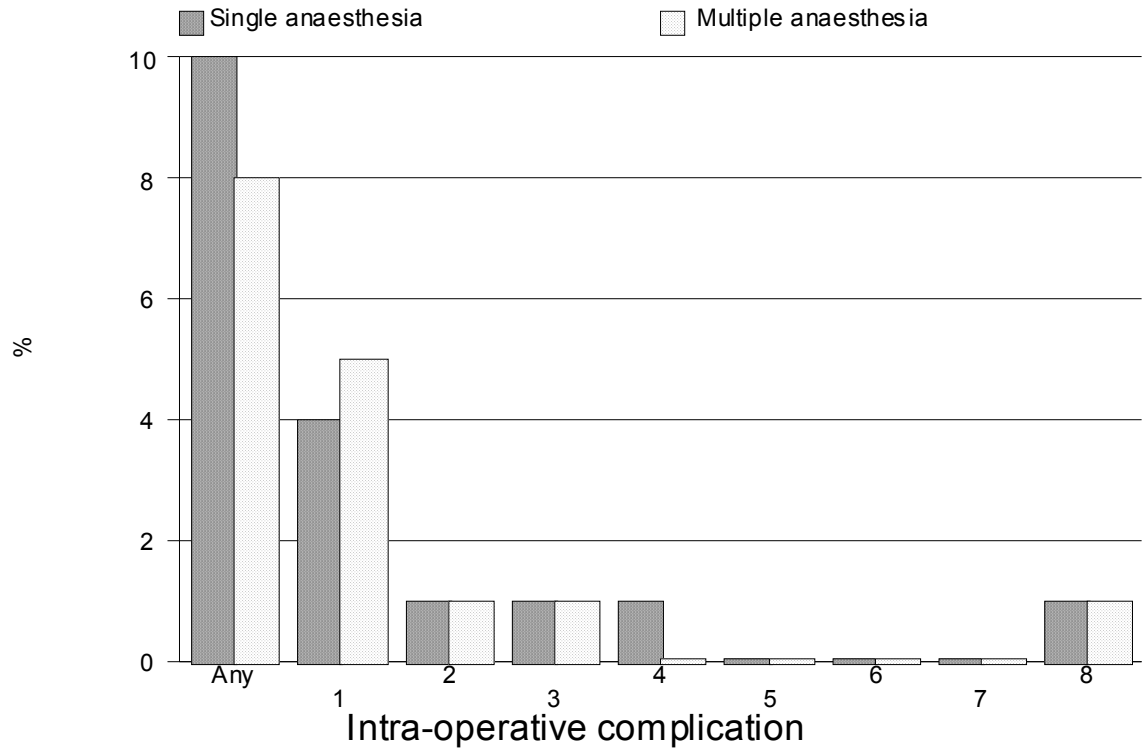
Type Of Intra-Op Complications	Types Of Local Anaesthesia															
	Local Anaesthesia		Retrobulbar		Peribulbar		Subtenon		Sub-Conjunctival		Facial Block		Topical		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7.Significant Trauma To Cornea Or Iris	74	0	8	0	9	0	45	0	3	2	0	0	14	0	0	0
8.Other	213	1	21	1	33	1	143	2	0	0	2	1	25	1	0	0

* Number In Each Column Might Add Up To Be More Than That Recorded At Row With ‘ Any Intra-Op Complication’ As One Patient Might Have More Than One Type Of Intra-Operative Complications

Table 3.1.6: Distribution Of Intra-Operative Complications By Single Or Multiple Local Anaesthesia

Type Of Intra-Operative Complications	Local Anaesthesia			
	Single		Multiple	
	No.	%	No.	%
N	15335	100	1678	100
Any Intra-Op Complication	1460	10	137	8
1.Posterior Capsule Rupture With Vitreous Loss	633	4	76	5
2.Posterior Capsule Rupture Without Vitreous Loss	221	1	22	1
3.Zonular Dialysis With Vitreous Loss	201	1	15	1
4.Zonular Dialysis Without Vitreous Loss	124	1	6	0
5.Loss Of Nucleus Material Into Vitreous	26	0	5	0
6.Choroidal/Suprachoroidal Haemorrhage	8	0	0	0
7.Significant Trauma To Cornea Or Iris	69	0	5	0
8.Other	202	1	11	1

Figure 3.1.6: Distribution Of Intra-Operative Complications By Single Or Multiple Local Anaesthesia



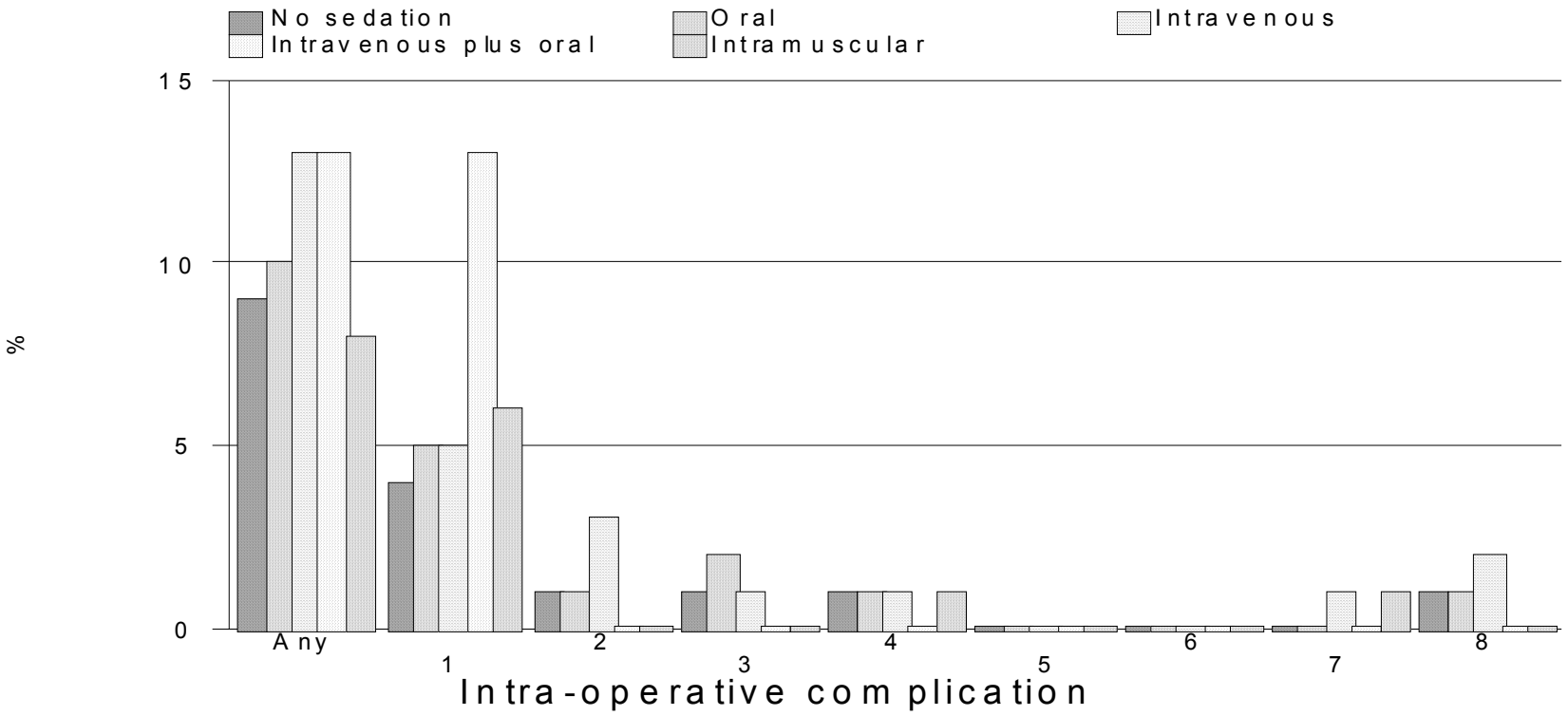
Intra-Op Complication: Index Refers To Table 3.1.6

Table 3.1.7: Distribution Of Intra-Operative Complications By Type Of Sedation

Type Of Intra-Operative Complications	Types Of Sedation									
	No Sedation		Oral Alone		Intravenous Alone		Intravenous Plus Oral		Intramuscular	
	No.	%	No.	%	No.	%	No.	%	No.	%
N	14031	100	2729	100	144	100	15	100	104	100
Any Intra-Op Complication	1302	9	269	10	18	13	2	13	8	8
1.Posterior Capsule Rupture With Vitreous Loss	564	4	132	5	7	5	2	13	6	6
2.Posterior Capsule Rupture Without Vitreous Loss	199	1	40	1	4	3	0	0	0	0
3.Zonular Dialysis With Vitreous Loss	174	1	41	2	1	1	0	0	0	0
4.Zonular Dialysis Without Vitreous Loss	111	1	16	1	2	1	0	0	1	1
5.Loss Of Nucleus Material Into Vitreous	26	0	5	0	0	0	0	0	0	0
6.Choroidal/Suprachoroidal Haemorrhage	7	0	1	0	0	0	0	0	0	0
7.Significant Trauma To Cornea Or Iris	66	0	6	0	1	1	0	0	1	1
8.Other	177	1	33	1	3	2	0	0	0	0

* Number In Each Column Might Add Up To Be More Than That Recorded At Row With ‘ Any Intra-Op Complication’ As One Patient Might Have More Than One Type Of Intra-Operative Complications

Figure 3.1.7: Distribution Of Intra-Operative Complications By Type Of Sedation

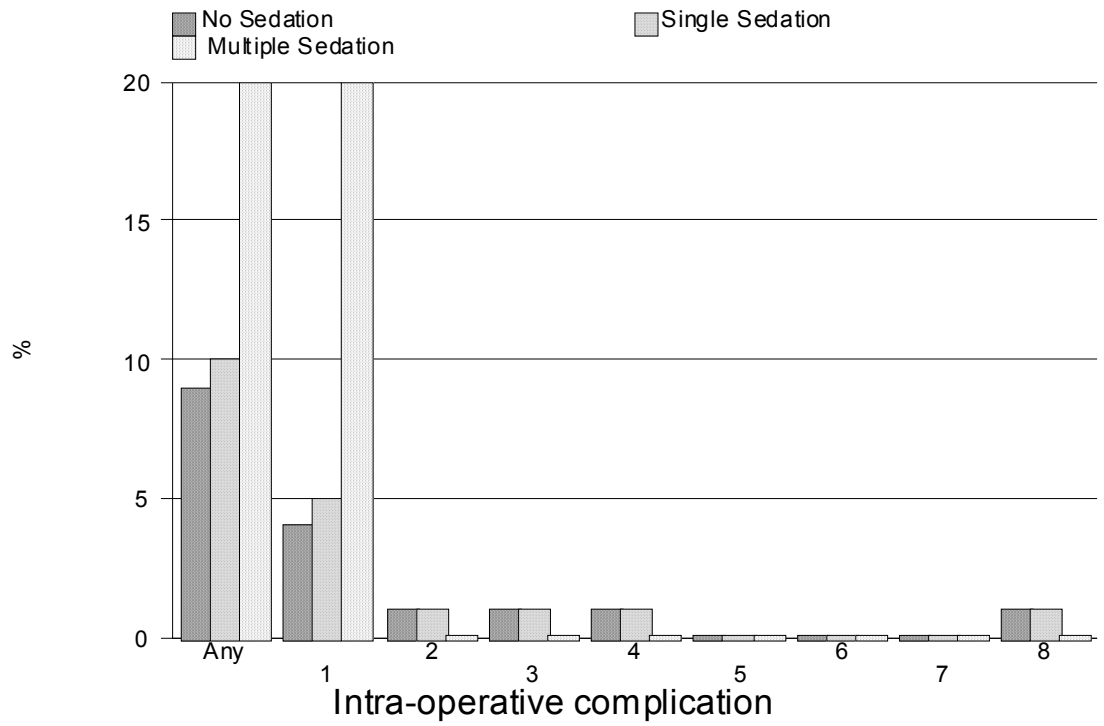


Intra-Op Complication: Index Refers To Table 3.1.7

Table 3.1.8: Distribution Of Intra-Operative Complications By Sedation

Type Of Intra-Operative Complications	Sedation					
	No Sedation		Single		Multiple	
	No.	%	No.	%	No.	%
N	14031	100	2972	100	10	100
Any Intra-Op Complication	1302	9	293	10	2	20
1.Posterior Capsule Rupture With Vitreous Loss	564	4	143	5	2	20
2.Posterior Capsule Rupture Without Vitreous Loss	199	1	44	1	0	0
3.Zonular Dialysis With Vitreous Loss	174	1	42	1	0	0
4.Zonular Dialysis Without Vitreous Loss	111	1	19	1	0	0
5.Loss Of Nucleus Material Into Vitreous	26	0	5	0	0	0
6.Choroidal/Suprachoroidal Haemorrhage	7	0	1	0	0	0
7.Significant Trauma To Cornea Or Iris	66	0	8	0	0	0
8.Other	177	1	36	1	0	0

Figure 3.1.8: Distribution Of Intra-Operative Complications By Sedation

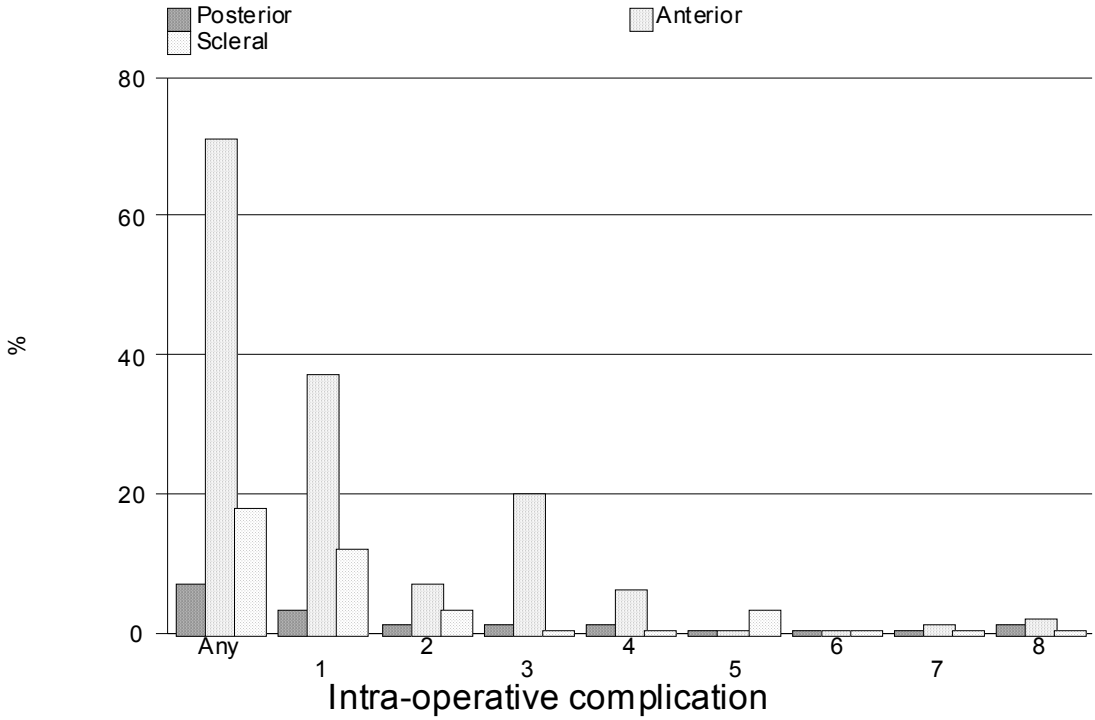


Intra-Op Complication: Index Refers To Table 3.1.8

Table 3.1.9: Distribution Of Intra-Operative Complications By Cataract Surgery With IOL

Type Of Intra-Operative Complications	Cataract Surgery With IOL							
	All Patients With IOL		Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL	
	No.	%	No.	%	No.	%	No.	%
N	17941	100	17410	100	497	100	34	100
Any Intra-Op Complication	1527	9	1168	7	353	71	6	18
1.Posterior Capsule Rupture With Vitreous Loss	668	4	480	3	184	37	4	12
2.Posterior Capsule Rupture Without Vitreous Loss	248	1	211	1	36	7	1	3
3.Zonular Dialysis With Vitreous Loss	190	1	92	1	98	20	0	0
4.Zonular Dialysis Without Vitreous Loss	136	1	108	1	28	6	0	0
5.Loss Of Nucleus Material Into Vitreous	19	0	16	0	2	0	1	3
6.Choroidal/Suprachoroidal Haemorrhage	3	0	3	0	0	0	0	0
7.Significant Trauma To Cornea Or Iris	73	0	69	0	4	1	0	0
8.Other	208	1	198	1	10	2	0	0

Figure 3.1.9: Distribution Of Intra-Operative Complications By Cataract Surgery With IOL

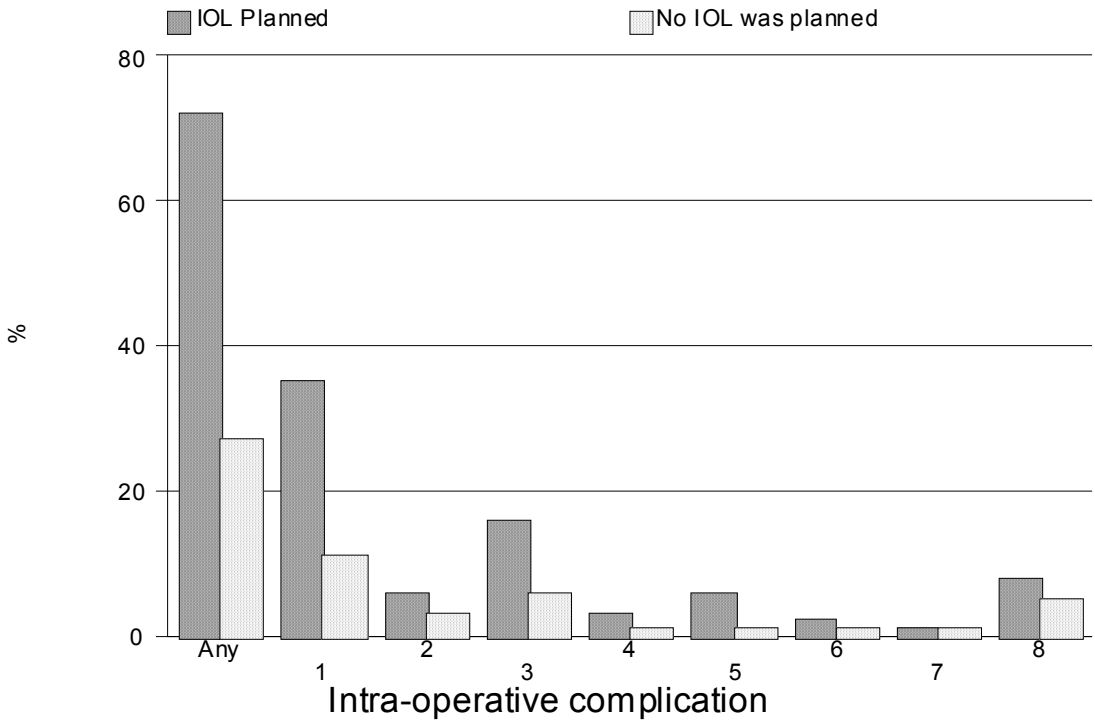


Intra-Op Complication: Index Refers To Table 3.1.09

Table 3.1.10: Distribution Of Intra-Operative Complications By Cataract Surgery Without IOL

Type Of Intra-Operative Complications	Cataract Surgery Without IOL					
	All Patients Without IOL		IOL Planned, But Not Implanted		No IOL Was Planned	
	No.	%	No.	%	No.	%
N	448	100	174	100	274	100
Any Intra-Op Complication	201	45	126	72	75	27
1.Posterior Capsule Rupture With Vitreous Loss	90	20	61	35	29	11
2.Posterior Capsule Rupture Without Vitreous Loss	17	4	10	6	7	3
3.Zonular Dialysis With Vitreous Loss	44	10	27	16	17	6
4.Zonular Dialysis Without Vitreous Loss	10	2	6	3	4	1
5.Loss Of Nucleus Material Into Vitreous	14	3	11	6	3	1
6.Choroidal/Suprachoroidal Haemorrhage	7	2	4	2	3	1
7.Significant Trauma To Cornea Or Iris	5	1	2	1	3	1
8.Other	27	6	14	8	13	5

Figure 3.1.10: Distribution Of Intra-Operative Complications By Cataract Surgery Without IOL

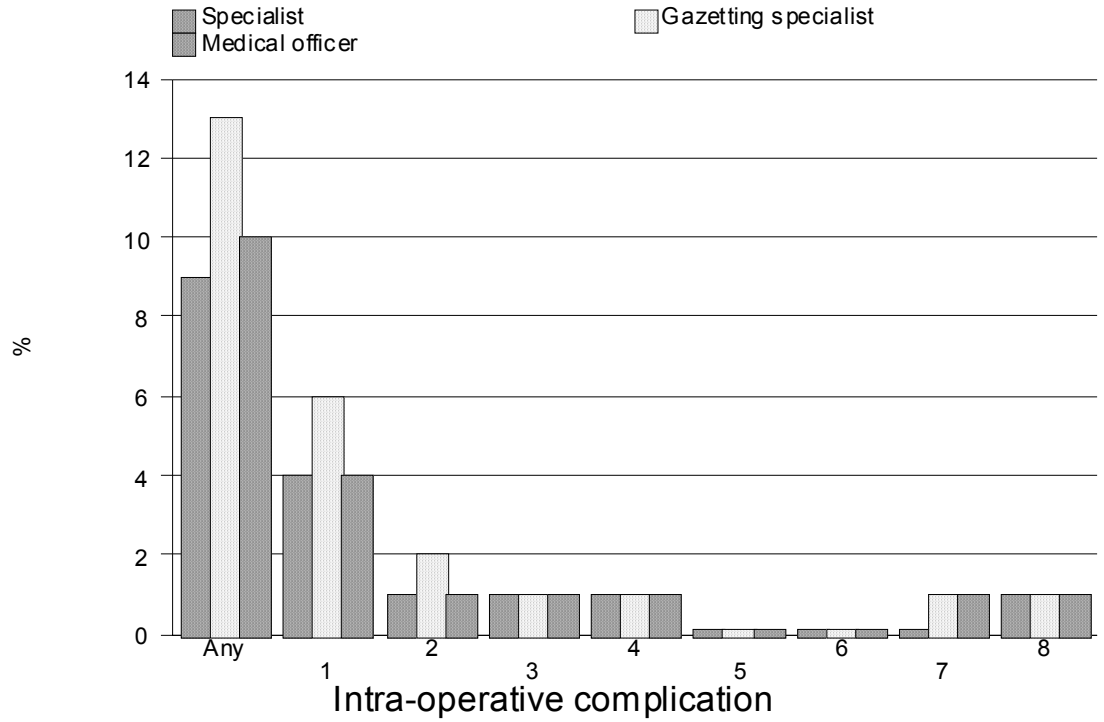


Intra-Op Complication: Index Refers To Table 3.1.10

Table 3.1.11: Distribution Of Intra-Operative Complications By Surgeon Status

Type Of Intra-Operative Complications	Surgeon Status							
	All Patients		Specialist		Gazetting Specialist		Medical Officer	
	No.	%	No.	%	No.	%	No.	%
N	18392	100	13165	100	1757	100	3470	100
Any Intra-Op Complication	1730	9	1170	9	222	13	338	10
1.Posterior Capsule Rupture With Vitreous Loss	760	4	515	4	97	6	148	4
2.Posterior Capsule Rupture Without Vitreous Loss	265	1	180	1	38	2	47	1
3.Zonular Dialysis With Vitreous Loss	234	1	163	1	25	1	46	1
4.Zonular Dialysis Without Vitreous Loss	146	1	97	1	23	1	26	1
5.Loss Of Nucleus Material Into Vitreous	34	0	28	0	4	0	2	0
6.Choroidal/Suprachoroidal Haemorrhage	10	0	8	0	1	0	1	0
7.Significant Trauma To Cornea Or Iris	78	0	40	0	16	1	22	1
8.Other	235	1	158	1	25	1	52	1

Figure 3.1.11: Distribution Of Intra-Operative Complications By Surgeon Status



Intra-Op Complication: Index Refers To Table 3.1.11

3.2 Cataract Surgery Complications - Post-Operative

Table 3.2.1: Distribution Of Post-Operative Complications

Post-Operative Complications	No.	%
N	18392	100
Patients With Any Post-Op Complication	1670	9
Patients With Specific Post-Op Complication		
1.Central Edema Within 4mm Of Visual Axis	77	0
2.Raised Iop Of More Than 30mmhg	22	0
3.Suture Abscess	17	0
4.Severe Iritis With Fibrin	15	0
5.Iris Prolapse/Wound Dehiscence	21	0
6.Vitreous Incarceration Into Wad	4	0
7.Vitreous In Ac Touching Cornea	2	0
8.IOL Decentration/Dislocation	4	0
9.Cystoid Macular Edema	23	0
10.Endophathalmitis	12	0
11.New Retinal Break	1	0
12.Retinal Detachment	10	0
13.Astigmation Of > 3 Diopters	217	1
14.Posterior Capsule Opacification	55	0
15.Other	57	0

Table 3.2.2: Distribution Of Post-Operative Complications By IOL Types

		Type Of IOL			
		Foldable		Non-Foldable	
Post-Operative Complications	N	No.	%	No.	%
N	18392	8188	100	9762	100
Patients With Any Post-Op Complication	1670	652	8	979	10
Patients With Specific Post-Op Complication					
1.Central Edema Within 4mm Of Visual Axis	77	33	0.4	42	0.4
2.Raised Iop Of More Than 30mmhg	22	1	0	19	0.2
3.Suture Abscess	17	6	0.1	8	0.1
4.Severe Iritis With Fibrin	15	8	0.1	6	0.1
5.Iris Prolapse/Wound Dehiscence	21	2	0	19	0.2
6.Vitreous Incarceration Into Wad	4	2	0	2	0
7.Vitreous In Ac Touching Cornea	2	2	0	0	0
8.IOL Decentration/Dislocation	4	2	0	2	0
9.Cystoid Macular Edema	23	5	0.1	17	0.2
10.Endophathalmitis	12	4	0	8	0.1
11.New Retinal Break	1	1	0	0	0
12.Retinal Detachment	10	2	0	6	0.1
13.Astigmation Of > 3 Diopters	217	18	0.2	196	2
14.Posterior Capsule Opacification	55	17	0.2	37	0.4
15.Other	57	16	0.2	36	0.4

Table 3.2.3: Distribution Of Post-Operative Complication By Material

		Type Of Material							
		PMMA		Silicone		Acrylic		Other	
Post-Operative Complications	N	No.	%	No.	%	No.	%	No.	%
N	18392	9758	100	1078	100	7105	100	12	100
Patients With Any Post-Op Complication	1670	979	10	76	7	576	8	0	0
Patients With Specific Post-Op Complication									
1.Central Edema Within 4mm Of Visual Axis	77	42	0.4	8	1	25	0.4	0	0
2.Raised IOP Of More Than 30mmhg	22	19	0.2	0	0	1	0	0	0
3.Suture Abscess	17	8	0.1	0	0	6	0.1	0	0
4.Severe Iritis With Fibrin	15	6	0.1	1	0.1	7	0.1	0	0
5.Iris Prolapse/Wound Dehiscence	21	19	0.2	1	0.1	1	0	0	0
6.Vitreous Incarceration Into Wound	4	2	0	0	0	2	0	0	0
7.Vitreous In AC Touching Cornea	2	0	0	0	0	2	0	0	0
8.IOL Decentration/Dislocation	4	2	0	0	0	2	0	0	0
9.Cystoid Macular Edema	23	17	0.2	3	0.3	2	0	0	0
10.Endophathalmitis	12	8	0.1	2	0.2	2	0	0	0
11.New Retinal Break	1	0	0	0	0	1	0	0	0
12.Retinal Detachment	10	6	0.1	0	0	2	0	0	0
13.Astigmation Of > 3 Diopters	217	196	2	6	1	12	0.2	0	0
14.Posterior Capsule Opacification	55	37	0.4	4	0.4	13	0.2	0	0
15.Other	57	36	0.4	2	0.2	14	0.2	0	0

Table 3.2.4: Post-Operative Complication By Centre

		Centre											
		A		B		C		D		E		F	
Post-Operative Complications	N	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	18392	167	100	1137	100	120	100	816	100	315	100	753	100
Patients With Any Post-Op Complication	1670	11	7	70	6	6	5	375	46	20	6	69	9
Patients With Specific Post-Op Complication													
1.Central Edema Within 4mm Of Visual Axis	77	0	0	12	1	0	0	5	1	0	0	0	0
2.Raised Iop Of More Than 30mmhg	22	1	1	2	0	0	0	1	0	0	0	4	1
3.Suture Abscess	17	0	0	4	0	0	0	1	0	0	0	2	0
4.Severe Iritis With Fibrin	15	0	0	0	0	0	0	4	0	0	0	1	0
5.Iris Prolapse/Wound Dehiscence	21	0	0	1	0	1	1	2	0	1	0	2	0
6.Vitreous Incarceration Into Wad	4	0	0	0	0	0	0	1	0	0	0	0	0
7.Vitreous In Ac Touching Cornea	2	0	0	0	0	0	0	0	0	0	0	0	0
8.IOL Decentration/Dislocation	4	0	0	0	0	0	0	0	0	1	0	0	0
9.Cystoid Macular Edema	23	2	1	0	0	0	0	0	0	1	0	0	0
10.Endophathalmitis	12	1	1	0	0	0	0	0	0	0	0	0	0
11.New Retinal Break	1	0	0	0	0	0	0	1	0	0	0	0	0
12.Retinal Detachment	10	0	0	0	0	0	0	0	0	0	0	1	0
13.Astigmation Of > 3 Diopters	217	1	1	36	3	0	0	8	1	11	3	42	6
14.Posterior Capsule Opacification	55	0	0	11	1	2	2	4	0	3	1	2	0
15.Other	57	1	1	4	0	1	1	0	0	1	0	4	1

		Centre											
		G		H		I		J		K		L	
Post-Operative Complications	N	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	18392	234	100	895	100	1215	100	365	100	1125	100	889	100
Patients With Any Post-Op Complication	1670	19	8	10	1	34	3	2	1	21	2	6	1
Patients With Specific Post-Op Complication													
1.Central Edema Within 4mm Of Visual Axis	77	2	1	0	0	1	0	0	0	2	0	2	0
2.Raised Iop Of More Than 30mmhg	22	1	0	0	0	4	0	1	0	0	0	0	0
3.Suture Abscess	17	0	0	0	0	1	0	0	0	0	0	0	0
4.Severe Iritis With Fibrin	15	0	0	0	0	0	0	0	0	2	0	0	0
5.Iris Prolapse/Wound Dehiscence	21	0	0	0	0	1	0	1	0	0	0	0	0
6.Vitreous Incarceration Into Wad	4	0	0	0	0	0	0	0	0	0	0	0	0
7.Vitreous In Ac Touching Cornea	2	0	0	0	0	0	0	0	0	0	0	0	0
8.IOL Decentration/Dislocation	4	0	0	0	0	0	0	0	0	0	0	0	0
9.Cystoid Macular Edema	23	0	0	1	0	4	0	0	0	2	0	1	0
10.Endophathalmitis	12	2	1	1	0	0	0	0	0	2	0	0	0
11.New Retinal Break	1	0	0	0	0	0	0	0	0	0	0	0	0
12.Retinal Detachment	10	0	0	1	0	1	0	0	0	1	0	0	0
13.Astigmation Of > 3 Diopters	217	0	0	3	0	18	1	0	0	5	0	0	0
14.Posterior Capsule Opacification	55	0	0	1	0	1	0	0	0	2	0	1	0
15.Other	57	3	1	2	0	2	0	0	0	3	0	3	0

		Centre											
		M		N		O		P		Q		R	
Post-Operative Complications	N	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	18392	906	100	300	100	1029	100	526	100	402	100	205	100
Patients With Any Post-Op Complication	1670	47	5	6	2	83	8	8	2	4	1	14	7
Patients With Specific Post-Op Complication													
1.Central Edema Within 4mm Of Visual Axis	77	13	1	0	0	5	0	1	0	0	0	1	0
2.Raised Iop Of More Than 30mmhg	22	1	0	0	0	0	0	0	0	0	0	1	0
3.Suture Abscess	17	0	0	0	0	1	0	1	0	0	0	0	0
4.Severe Iritis With Fibrin	15	4	0	0	0	1	0	0	0	0	0	1	0
5.Iris Prolapse/Wound Dehiscence	21	2	0	0	0	3	0	0	0	1	0	0	0
6.Vitreous Incarceration Into Wad	4	2	0	0	0	0	0	0	0	0	0	0	0
7.Vitreous In Ac Touching Cornea	2	0	0	0	0	0	0	0	0	0	0	0	0
8.IOL Decentration/Dislocation	4	1	0	0	0	0	0	0	0	0	0	1	0
9.Cystoid Macular Edema	23	3	0	0	0	1	0	0	0	0	0	0	0
10.Endophathalmitis	12	1	0	0	0	2	0	0	0	1	0	0	0
11.New Retinal Break	1	0	0	0	0	0	0	0	0	0	0	0	0
12.Retinal Detachment	10	0	0	0	0	1	0	0	0	0	0	0	0
13.Astigmation Of > 3 Diopters	217	14	2	0	0	28	3	4	1	1	0	0	0
14.Posterior Capsule Opacification	55	2	0	0	0	4	0	2	0	1	0	3	1
15.Other	57	0	0	1	0	0	0	0	0	0	0	7	3

		Centre													
		S		T		U		V		W		X		Y	
Post-Operative Complications	N	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	18392	458	100	520	100	814	100	444	100	632	100	238	100	120	100
Patients With Any Post-Op Complication	1670	20	4	213	41	50	6	4	1	30	5	2	1	4	3
Patients With Specific Post-Op Complication															
1.Central Edema Within 4mm Of Visual Axis	77	11	2	3	1	6	1	0	0	9	1	0	0	0	0
2.Raised IOP Of More Than 30mmhg	22	1	0	0	0	0	0	0	0	2	0	0	0	0	0
3.Suture Abscess	17	1	0	1	0	0	0	0	0	0	0	0	0	0	0
4.Severe Iritis With Fibrin	15	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5.Iris Prolapse/Wound Dehiscence	21	0	0	0	0	1	0	0	0	0	0	0	0	0	0
6.Vitreous Incarceration Into Wad	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0
7.Vitreous In Ac Touching Cornea	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.IOL Decentration/Dislocation	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0
9.Cystoid Macular Edema	23	0	0	0	0	0	0	0	0	0	0	0	0	1	1
10.Endophathalmitis	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.New Retinal Break	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.Retinal Detachment	10	0	0	0	0	0	0	2	0	2	0	0	0	0	0
13.Astigmation Of > 3 Diopters	217	0	0	4	1	17	2	1	0	2	0	1	0	1	1
14.Posterior Capsule Opacification	55	4	1	0	0	1	0	0	0	6	1	1	0	1	1
15.Other	57	1	0	0	0	6	1	0	0	1	0	0	0	2	2

		Centre															
		Z		Aa		Ab		Ac		Ad		Af		Ag		Ah	
Post-Operative Complications	N	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
N	18392	568	100	145	100	1311	100	678	100	190	100	20	100	630	100	225	100
Patients With Any Post-Op Complication	1670	24	4	1	1	36	3	8	1	11	6	3	15	453	72	6	3
Patients With Specific Post-Op Complication																	
1.Central Edema Within 4mm Of Visual Axis	77	1	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0
2.Raised IOP Of More Than 30mmhg	22	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0
3.Suture Abscess	17	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.Severe Iritis With Fibrin	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.Iris Prolapse/Wound Dehiscence	21	2	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1
6.Vitreous Incarceration Into Wad	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.Vitreous In Ac Touching Cornea	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
8.IOL Decentration/Dislocation	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9.Cystoid Macular Edema	23	3	1	0	0	3	0	0	0	1	1	0	0	0	0	0	0
10.Endophathalmitis	12	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0
11.New Retinal Break	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.Retinal Detachment	10	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
13.Astigmation Of > 3 Diopters	217	12	2	0	0	4	0	2	0	0	0	1	5	0	0	1	0
14.Posterior Capsule Opacification	55	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
15.Other	57	1	0	1	1	12	1	0	0	1	1	0	0	0	0	0	0

3.3 Post-Operative Follow-Up Period

Table 3.3.1: Median Follow-Up Period In Weeks (Patients With Only Unaided Vision, Refraction Was Not Performed)

Type Of Surgery	N	Median	25th Percentile	75th Percentile
All Surgeries	941	5.6	1.3	10.9
Lens Aspiration	47	5.4	1.6	9.3
ECCE	379	4.3	1.1	10.4
PE	468	6	1.6	11.8
PE TO ECCE	20	5	2	13.1
ICCE	11	6.3	4.4	11.3
Secondary IOL Implant	16	1.4	1	4.4

Table 3.3.2: Median Follow-Up Period In Weeks (Patients With Refracted Vision)

Type Of Surgery	N	Median	25th Percentile	75th Percentile
All Surgeries	5807	10	7.4	12.1
Lens Aspiration	102	10.1	7.9	13.3
ECCE	2616	10.4	8	12.7
PE	2865	9.1	7.1	11.6
PE TO ECCE	150	10.9	8.7	13.3
ICCE	30	11.5	8.4	13.6
Secondary IOL Implant	44	9.7	7.6	12.6

3.4 Post-Operative Visual Acuity

Table 3.4.1: Distribution Of Post-Operative VA
(a) All Patients, With Primary Cause Of Cataract And Not Combined Surgery

VA Post Operative	Unaided		Refracted	
	N=6228 No.	100% %	N=5477 No.	100% %
6/5	2	0	17	0
6/6	306	5	1601	29
6/9	978	16	2078	38
6/12	1166	19	858	16
6/18	1187	19	392	7
6/24	1054	17	183	3
6/36	704	11	149	3
6/60	434	7	60	1
5/60	46	1	6	0
4/60	31	0	4	0
3/60	56	1	21	0
2/60	39	1	20	0
1/60	63	1	18	0
CF	80	1	27	0
HM	57	1	33	1
PL	15	0	5	0
NPL	10	0	5	0

(b) All Patients, With Primary Cause Of Cataract, Not Combined Surgery And Without Ocular Co-Morbidity

VA Post Operative	Unaided		Refracted	
	N=4061 No.	100% %	N=3605 No.	100% %
6/5	1	0	14	0
6/6	238	6	1162	32
6/9	739	18	1465	41
6/12	840	21	585	16
6/18	792	20	207	6
6/24	684	17	85	2
6/36	420	10	53	1
6/60	228	6	9	0
5/60	25	1	2	0
4/60	12	0	1	0
3/60	17	0	5	0
2/60	18	0	6	0
1/60	12	0	1	0
CF	20	0	4	0
HM	9	0	5	0
PL	5	0	1	0
NPL	1	0	0	0

Without Ocular Co-Morbidity
Only Single Cataract Surgery (Combine=None)
Primary Only For Cause Of Cataract
(Dr Goh, all the tables from table 3.4.1-3.6.1 included only patients without ocular co-morbidity, single cataract surgery and primary cause of cataract)

Figure 3.4.1.1(b): Distribution Of Post-Operative VA

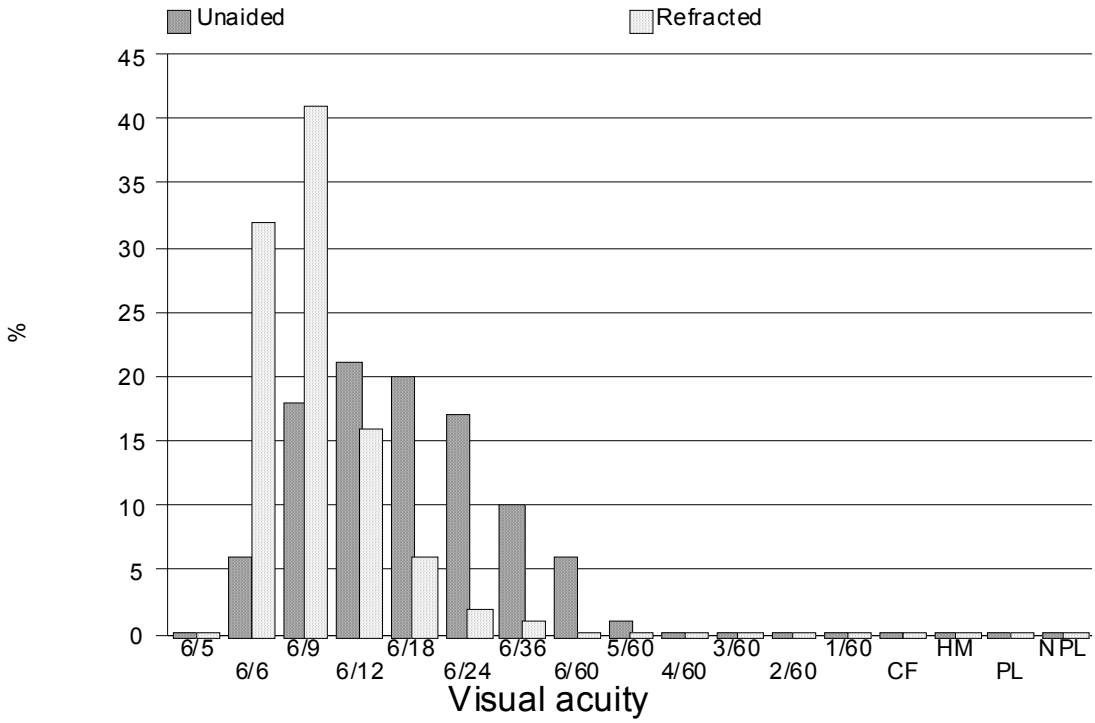


Figure 3.4.1.2: Cumulative Distribution Of Visual Acuity By Pre- And Post-Operative Unaided VA

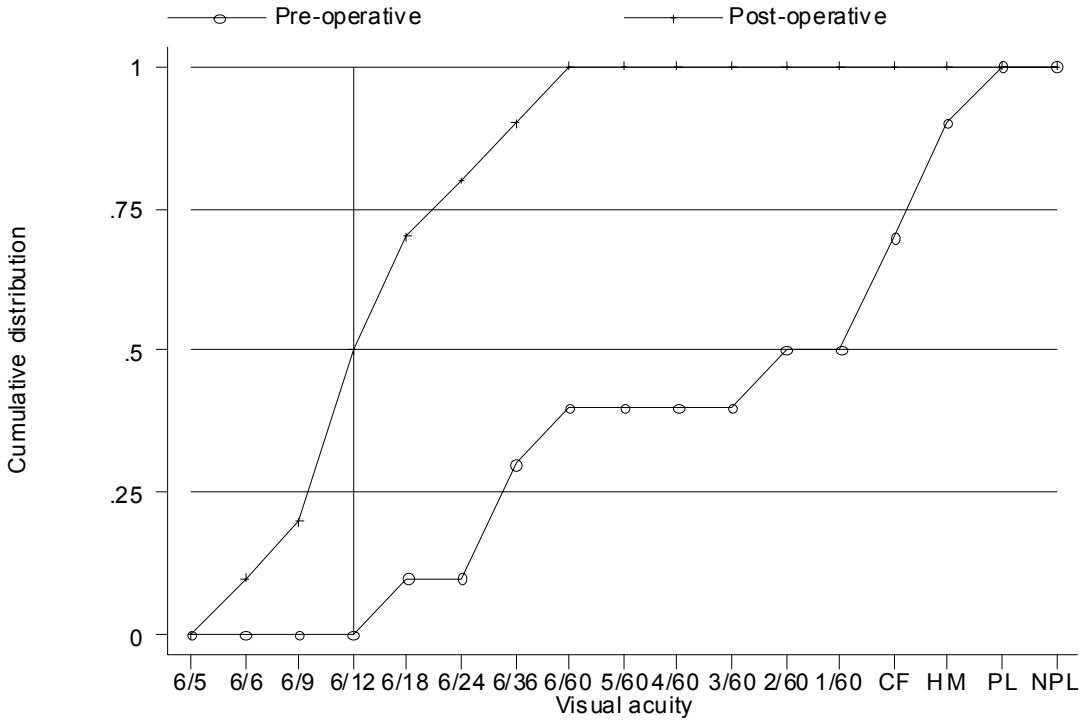


Figure 3.4.1.3: Cumulative Distribution Of Visual Acuity By Pre- And Post-Operative Refracted VA

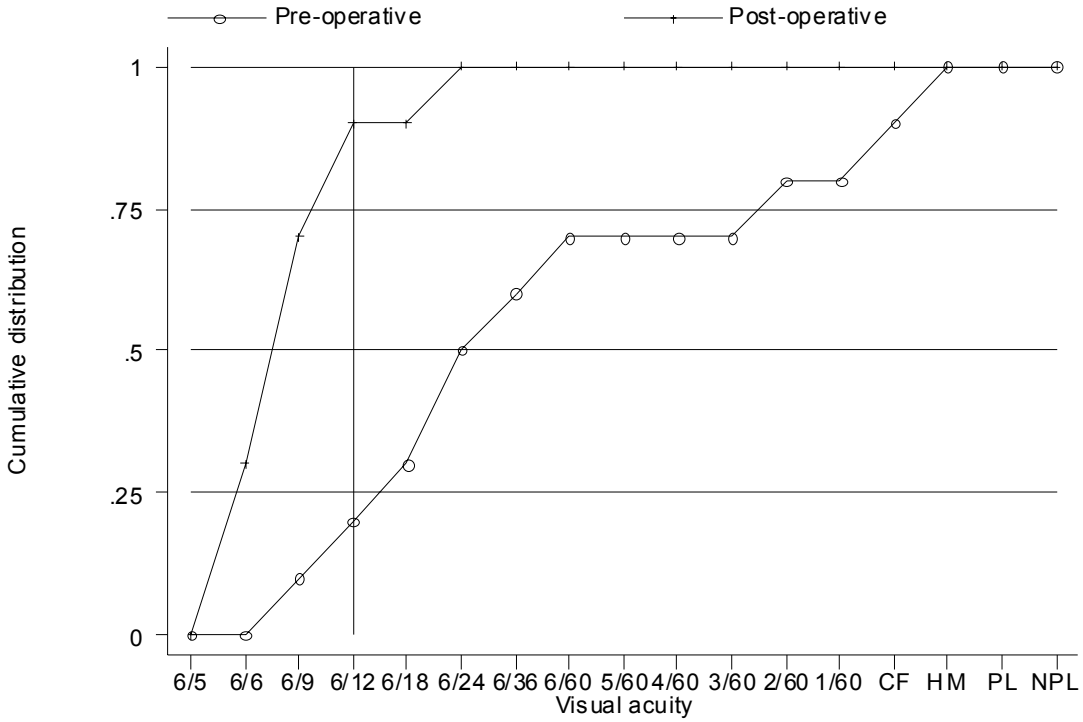
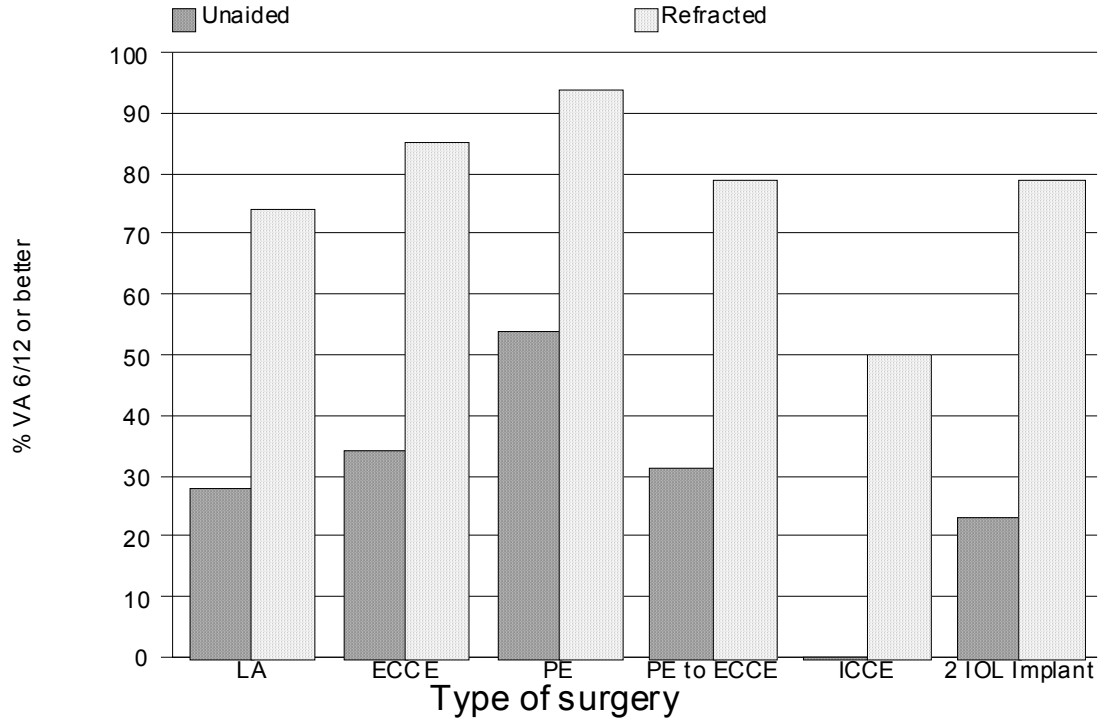


Table 3.4.2: Distribution Of Post-Operative Refracted VA 6/12 Or Better At The Last Follow Up Among Patients Without Ocular Co-Morbidities, By Surgery

Type Of Surgery	Unaided			Refracted		
	N	VA 6/12 Or Better		N	VA 6/12 Or Better	
		No.	%		No.	%
All Surgeries	4061	1818	45	3605	3226	89
Lens Aspiration	40	11	28	31	23	74
ECCE	1659	571	34	1479	1257	85
PE	2226	1198	54	1975	1852	94
PE TO ECCE	107	33	31	97	77	79
ICCE	7	0	0	4	2	50
Secondary IOL Implant	22	5	23	19	15	79

Figure 3.4.2: Percent Of Patients With Refracted VA 6/12 Or Better At The Last Follow Up, By Surgery



* La=Lens Aspiration

* 2 IOL Implant=Secondary IOL Implant

Table 3.4.3: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Age And Type Of Surgery, Among Patients Without Ocular Co-Morbidities

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Age Group, Year																					
<1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-14	17	9	53	16	9	56	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-24	6	6	100	3	3	100	0	0	0	2	2	100	0	0	0	0	0	0	1	1	100
25-34	17	16	94	3	3	100	3	3	100	10	9	90	0	0	0	0	0	0	1	1	100
35-44	89	83	93	5	5	100	28	25	89	54	51	94	1	1	100	0	0	0	1	1	100
45-54	402	389	97	1	1	100	153	147	96	238	232	97	9	8	89	0	0	0	1	1	100
55-64	970	894	92	0	0	0	382	340	89	554	529	95	27	20	74	0	0	0	7	5	71
65-74	1518	1360	90	2	1	50	624	533	85	845	785	93	39	35	90	3	2	67	5	4	80
75-84	538	434	81	1	1	100	259	187	72	258	232	90	16	12	75	1	0	0	3	2	67
>=85	48	35	73	0	0	0	29	22	76	14	12	86	5	1	20	0	0	0	0	0	0

Table 3.4.4: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Gender And Type Of Surgery, Among Patients Without Ocular Co-Morbidities

Factor	Types Of Cataract Surgery																		
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Gender																					
Male	1754	1581	90	16	11	69	684	590	86	990	935	94	50	36	72	3	2	67	11	7	64
Female	1851	1645	89	15	12	80	795	667	84	985	917	93	47	41	87	1	0	0	8	8	100

Table 3.4.5: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Comorbidity And Type Of Surgery, Among Patients Without Ocular Co-Morbidities

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
All	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Ocular Co-Morbidity																					
Yes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Systemic Co-Morbidities (Among Patients Without Ocular Co-Morbidity)																					
Yes	2023	1825	90	7	5	71	805	688	85	1149	1083	94	54	43	80	1	0	0	7	6	86
No	1582	1401	89	24	18	75	674	569	84	826	769	93	43	34	79	3	2	67	12	9	75

Table 3.4.6: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Complication And Type Of Surgery

Factor	Types Of Cataract Surgery																		
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Complication																					
1. Intra-Op																					
Yes	279	214	77	1	1	100	121	85	70	123	104	85	28	20	71	3	2	67	3	2	67
No	3326	3012	91	30	22	73	1358	1172	86	1852	1748	94	69	57	83	1	0	0	16	13	81
2. Post-Op																					
Yes	243	150	62	1	0	0	141	80	57	82	58	71	16	10	63	1	1	100	2	1	50
No	3362	3076	91	30	23	77	1338	1177	88	1893	1794	95	81	67	83	3	1	33	17	14	82

Table 3.4.7: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Nature Of Surgery And Type Of Surgery

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Nature Of Surgeries																					
Emergency	18	15	83	0	0	0	6	4	67	12	11	92	0	0	0	0	0	0	0	0	0
Elective	3587	3211	90	31	23	74	1473	1253	85	1963	1841	94	97	77	79	4	2	50	19	15	79

Table 3.4.8: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Anaesthesia And Type Of Surgery

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Anaesthesia																					
1. Anaesthesia																					
General	115	99	86	26	19	73	39	36	92	43	40	93	3	0	0	0	0	0	4	4	100
Local	3490	3127	90	5	4	80	1440	1221	85	1932	1812	94	94	77	82	4	2	50	15	11	73
2. Local Anaesthesia																					
Retrobulbar	428	390	91	1	1	100	228	207	91	195	180	92	2	2	100	1	0	0	1	0	0
Peribulbar	748	637	85	3	3	100	373	299	80	345	315	91	23	17	74	1	0	0	3	3	100
Subtenon	1816	1635	90	1	0	0	844	721	85	893	849	95	66	56	85	2	2	100	10	7	70
Subconjunctival	12	12	100	0	0	0	6	6	100	6	6	100	0	0	0	0	0	0	0	0	0
Facialblock	46	37	80	0	0	0	36	28	78	7	7	100	3	2	67	0	0	0	0	0	0
Topical	820	747	91	1	1	100	176	144	82	620	583	94	21	17	81	0	0	0	2	2	100
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Sedation																					
Any	657	593	90	1	1	100	329	286	87	313	294	94	12	11	92	1	1	100	1	0	0
None	2948	2633	89	30	22	73	1150	971	84	1662	1558	94	85	66	78	3	1	33	18	15	83

Table 3.4.9: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Combined Surgery And Type Of Surgery

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Combined Surgery																					
Any	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
None	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79

Table 3.4.10: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To IOL And Type Of Surgery

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
IOL																					
1. IOL																					
With IOL	3582	3213	90	30	23	77	1464	1247	85	1972	1851	94	93	75	81	4	2	50	19	15	79
Without IOL	23	13	57	1	0	0	15	10	67	3	1	33	4	2	50	0	0	0	0	0	0
N	3582	3213	90	30	23	77	1464	1247	85	1972	1851	94	93	75	81	4	2	50	19	15	79
2. IOL-Type																					
Foldable	1652	1549	94	17	13	76	58	50	86	1548	1465	95	28	20	71	0	0	0	1	1	100
Non-Foldable	1930	1664	86	13	10	77	1406	1197	85	424	386	91	65	55	85	4	2	50	18	14	78
3.IOL-Material																					
Pmma	1930	1664	86	13	10	77	1406	1197	85	424	386	91	65	55	85	4	2	50	18	14	78
Silicone	301	285	95	1	1	100	6	6	100	292	277	95	2	1	50	0	0	0	0	0	0
Acrylic	1351	1264	94	16	12	75	52	44	85	1256	1188	95	26	19	73	0	0	0	1	1	100
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3.4.11: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Surgeon Status And Type Of Surgery Without Ocular Co-Morbidity

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	% (95% Ci)	N	No.	%	N	No.	% (95% Ci)	N	No.	% (95% Ci)	N	No.	%	N	No.	%	N	No.	%
N	3605	3226	89 (88, 90)	31	23	74	1479	1257	85 (83, 87)	1975	1852	94 (93, 95)	97	77	79	4	2	50	19	15	79
Surgeon Status																					
Specialist	2672	2430	91 (90, 92)	24	18	75	803	690	86 (83, 88)	1751	1646	94 (93, 95)	80	65	81	4	2	50	10	9	90
Gazetting Specialist	281	240	85 (81, 89)	4	3	75	164	136	83 (76, 88)	97	90	93 (86, 97)	9	6	67	0	0	0	7	5	71
Medical Officer	652	556	85 (82, 88)	3	2	67	512	431	84 (81, 87)	127	116	91 (85, 96)	8	6	75	0	0	0	2	1	50

Table 3.4.12: Distribution Of Post-Operative Refracted VA 6/12 Or Better In Relation To Centre And Type Of Surgery

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
All Centres	3605	3226	89	31	23	74	1479	1257	85	1975	1852	94	97	77	79	4	2	50	19	15	79
Centre																					
A	1	1	100	0	0	0	0	0	0	1	1	100	0	0	0	0	0	0	0	0	0
B	234	220	94	5	3	60	99	91	92	126	123	98	3	3	100	1	0	0	0	0	0
C	6	5	83	0	0	0	6	5	83	0	0	0	0	0	0	0	0	0	0	0	0
D	32	31	97	0	0	0	21	20	95	11	11	100	0	0	0	0	0	0	0	0	0
E	68	48	71	1	1	100	57	40	70	9	7	78	0	0	0	0	0	0	1	0	0
F	147	126	86	0	0	0	71	55	77	68	64	94	5	4	80	0	0	0	3	3	100
G	42	38	90	2	1	50	22	20	91	16	15	94	2	2	100	0	0	0	0	0	0
H	205	182	89	3	3	100	115	97	84	76	72	95	10	9	90	0	0	0	1	1	100
I	273	245	90	2	0	0	92	78	85	174	164	94	1	1	100	0	0	0	4	2	50
J	130	125	96	1	1	100	20	20	100	106	102	96	3	2	67	0	0	0	0	0	0
K	318	291	92	1	1	100	138	116	84	166	163	98	10	8	80	1	1	100	2	2	100
L	207	138	67	1	0	0	57	26	46	140	108	77	8	4	50	1	0	0	0	0	0
M	205	191	93	3	3	100	89	81	91	105	99	94	6	6	100	0	0	0	2	2	100
N	67	66	99	0	0	0	67	66	99	0	0	0	0	0	0	0	0	0	0	0	0
O	172	149	87	1	1	100	58	46	79	111	102	92	1	0	0	0	0	0	1	0	0
P	136	123	90	0	0	0	38	35	92	88	79	90	9	8	89	1	1	100	0	0	0
Q	86	84	98	4	4	100	26	24	92	48	48	100	7	7	100	0	0	0	1	1	100
R	42	35	83	0	0	0	41	34	83	0	0	0	1	1	100	0	0	0	0	0	0
S	123	116	94	1	0	0	26	24	92	96	92	96	0	0	0	0	0	0	0	0	0
T	59	53	90	2	1	50	18	18	100	35	32	91	3	1	33	0	0	0	1	1	100

Factor	Types Of Cataract Surgery																			
	All Surgeries			Lens Aspiration			ECCE			PE			PE TO ECCE			ICCE			Secondary IOL Implant		
	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%	N	No.	%
U	115	103	90	1	1	100	52	42	81	59	58	98	3	2	67	0	0	0	0	0	0
V	81	73	90	1	1	100	41	37	90	36	33	92	3	2	67	0	0	0	0	0	0
W	106	105	99	0	0	0	39	38	97	63	63	100	3	3	100	0	0	0	1	1	100
X	44	40	91	0	0	0	26	24	92	16	14	88	2	2	100	0	0	0	0	0	0
Y	22	20	91	0	0	0	20	19	95	1	1	100	1	0	0	0	0	0	0	0	0
Z	180	159	88	1	1	100	68	54	79	110	103	94	1	1	100	0	0	0	0	0	0
Aa	52	49	94	1	1	100	51	48	94	0	0	0	0	0	0	0	0	0	0	0	0
Ab	213	196	92	0	0	0	45	38	84	161	153	95	7	5	71	0	0	0	0	0	0
Ac	165	153	93	0	0	0	18	16	89	138	130	94	7	5	71	0	0	0	2	2	100
Ad	22	22	100	0	0	0	9	9	100	12	12	100	1	1	100	0	0	0	0	0	0
Af	6	5	83	0	0	0	3	2	67	3	3	100	0	0	0	0	0	0	0	0	0
Ag	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ah	46	34	74	0	0	0	46	34	74	0	0	0	0	0	0	0	0	0	0	0	0

3.5 Post-Operative Refracted VA Improved By One Or More Line Of Snellen Chart

Table 3.5.1: Distribution Of Post-Operative Refracted VA Improved By One Or More Line Of Snellen Chart, At The Last Follow Up

Type Of Surgery		Refracted Visual Acuity					
	N	No Change		Worse		Improved	
		No.	%	No.	%	No.	%
All Surgeries	473	23	5	14	3	436	92
Lens Aspiration	4	0	0	0	0	4	100
ECCE	143	3	2	5	3	135	94
PE	303	18	6	7	2	278	92
PE To ECCE	18	1	6	1	6	16	89
ICCE	0	0		0		0	
Secondary IOL Implant	5	1	20	1	20	3	60

Table 3.5.2: Distribution Of Post- Operative Refracted VA Improved By One Or More Line Of Snellen Chart, With And Without Ocular Co-Morbidity At The Last Follow Up

Ocular Co-Morbidity	Refracted VA		Type Of Surgery						
			All Surgeries	Lens Aspiration	ECCE	PE	PE TO ECCE	ICCE	Secondary IOL Implant
Yes	N		229	1	110	110	5	1	2
	No Change	No.	15	0	7	8	0	0	0
		%	7	0	6	7	0	0	0
	Worse	No.	13	0	5	6	0	0	2
		%	6	0	5	5	0	0	100
	Improved	No.	201	1	98	96	5	1	0
		%	88	100	89	87	100	100	0
No.	N		473	4	143	303	18	0	5
	No Change	No.	23	0	3	18	1	0	1
		%	5	0	2	6	6	0	20
	Worse	No.	14	0	5	7	1	0	1
		%	3	0	3	2	6	0	20
	Improved	No.	436	4	135	278	16	0	3
		%	92	100	94	92	89	0	60

Table 3.5.3: Distribution Of Post- Operative Refracted VA Improved By One Or More Line Of Snellen Chart With Intra-Op Complication And Without Intra-Op Complication, At The Last Follow Up

Intra-Op Complication	Refracted VA		Type Of Surgery						
			All Surgeries	Lens Aspiration	ECCE	PE	PE To ECCE	ICCE	Secondary IOL Implant
Yes	N		34	0	9	22	2	0	1
	No Change	No.	5	0	1	3	1	0	0
		%	15	0	11	14	50	0	0
	Worse	No.	2	0	0	2	0	0	0
		%	6	0	0	9	0	0	0
	Improved	No.	27	0	8	17	1	0	1
		%	79	0	89	77	50	0	100
No.	N		439	4	134	281	16	0	4
	No Change	No.	18	0	2	15	0	0	1
		%	4	0	1	5	0	0	25
	Worse	No.	12	0	5	5	1	0	1
		%	3	0	4	2	6	0	25
	Improved	No.	409	4	127	261	15	0	2
		%	93	100	95	93	94	0	50

Table 3.5.4: Distribution Of Post -Operative Refracted VA Improved By One Or More Line Of Snellen Chart With Systemic Co-Morbidity And Without Systemic Co-Morbidity, At The Last Follow Up

Systemic Co-Morbidity	Refracted VA		Type Of Surgery						
			All Surgeries	Lens Aspiration	ECCE	PE	PE TO ECCE	ICCE	Secondary IOL Implant
Yes	N		286	0	94	182	9	0	1
	No Change	No.	14	0	3	9	1	0	1
		%	5	0	3	5	11	0	100
	Worse	No.	9	0	5	4	0	0	0
		%	3	0	5	2	0	0	0
	Improved	No.	263	0	86	169	8	0	0
		%	92	0	91	93	89	0	0
No.	N		187	4	49	121	9	0	4
	No Change	No.	9	0	0	9	0	0	0
		%	5	0	0	7	0	0	0
	Worse	No.	5	0	0	3	1	0	1
		%	3	0	0	2	11	0	25
	Improved	No.	173	4	49	109	8	0	3
		%	93	100	100	90	89	0	75

Table 3.5.5: Distribution Of Post -Operative Refracted VA Improved By One Or More Line Of Snellen Chart At The Last Follow Up In Relation To Surgeon Status And Type Of Surgery Without Ocular Comorbidity

Type Of Surgery	Surgeon Status	N	No Change		Worse		Improved	
			No.	% (95% Ci)	No.	% (95% Ci)	No.	% (95% Ci)
All Surgeries	Specialist	403	21	5 (3.25, 7.86)	11	3 (1.37, 4.83)	371	92 (88.98, 94.51)
	Gazetting Specialist	25	1	4 (0.10, 20.35)	1	4 (0.10, 20.35)	23	92 (73.97, 99.02)
	Medical Officer	45	1	2 (0.06, 11.77)	2	4 (0.54, 15.15)	42	93 (81.73, 98.60)
Lens Aspiration	Specialist	3	0	0	0	0	3	100
	Gazetting Specialist	1	0	0	0	0	1	100
	Medical Officer	0	0		0		0	
ECCE	Specialist	115	3	3 (0.54, 7.43)	5	4 (1.43, 9.85)	107	93 (86.75, 96.95)
	Gazetting Specialist	11	0	0 (0, 28.49)*	0	0 (0, 28.49)*	11	100 (71.51,100)*
	Medical Officer	17	0	0 (0, 19.51)*	0	0 (0, 19.51)*	17	100 (80.49, 100)*
PE	Specialist	268	17	6 (3.74, 9.96)	4	1 (0.41, 3.78)	247	92 (88.27, 95.08)
	Gazetting Specialist	8	0	0 (0, 36.94)*	1	13 (0.32, 52.65)	7	88 (47.35, 99.68)
	Medical Officer	27	1	4 (0.09, 18.97)	2	7 (0.91, 24.29)	24	89 (70.84, 97.65)
PE To ECCE	Specialist	14	1	7	1	7	12	86
	Gazetting Specialist	3	0	0	0	0	3	100
	Medical Officer	1	0	0	0	0	1	100
ICCE	Specialist	0	0		0		0	
	Gazetting Specialist	0	0		0		0	
	Medical Officer	0	0		0		0	
Secondary IOL Implant	Specialist	3	0	0	1	33	2	67
	Gazetting Specialist	2	1	50	0	0	1	50
	Medical Officer	0	0		0		0	

*One-Sided, 97.5% Confidence Interval

3.6 Factors Contributing To Post-Operative Refracted Visual Acuity Of Worse Than 6/12

Table 3.6.1: Distribution Of Factors Contributing To Post- Operative Refracted Of Worse Than 6/12

Factor	No.	%
N	379	100
Patients With Any Factor	331	87
Patients With Specific Factor		
1.High Astigmatism	197	52
2.Posterior Capsular Opacity	20	5
3.Cystoid Macular Edema	20	5
4.Endophthalmitis	4	1
5.Corneal Decompensation	3	1
6.Decentered IOL	2	1
7.Retinal Detachment	1	0
8.Preexisting Ocular Co-Morbidity	23	6
9.Other	76	20

Appendix I (Clinical Record Forms)