



THE 12TH REPORT NATIONAL EYE DATABASE 2018

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INCLUDED REPORTS ON

Cataract Surgery:
2009 - 2018
Klinik Katarak KKM dan Pusat
Pembedahan Katarak PPKM-HS-
Hospital Selayang/KK-KKM
Kedah (Hospital Jitra)

Retinoblastoma Registry:
2014 - 2018

With Contributions From
Lee Annie, Teng Kam Yoke
Ahmed Ram Firdause (cover design), Ahmed Ram Fauzzee (cover design)

The 12th Report of the National Eye Database 2018

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Disclaimer

There is a potential that data published for previous years in current reports may differ from annual reports published earlier. This is because analysis is based on latest dataset in NED database which may have been updated by Source Data Producers.

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Thank you.

NED Steering Committee Members

April 2020

About National Eye Database

Introduction

The National Eye Database (NED) is an eye health information system supported by MOH. It is a clinical database consisting of two active patient registries, Monthly Ophthalmology Service Census, Outreach Census and three surveillance registries (on Contact Lens Corneal Ulcer, Intraocular Lens and Endophthalmitis). The patient registries are Cataract Surgery Registry, Retinoblastoma Registry, Glaucoma Registry, Diabetic Eye Registry and Age Related Macular Degeneration Registry. In 2015, Glaucoma Registry, Diabetic Eye Registry and Age Related Macular Degeneration Registry are inactive due to planning and upgrading work. The Source Data Producers are eye care providers, mainly from the public sector. Information collected, both clinical and epidemiological, are very useful in assisting the MOH, Non-Governmental Organizations, private healthcare providers and industry in the planning, evaluation and continuous improvement of eye care services, leading to prevention and control of blindness in the nation.

Vision

Accessible eye health information.

General Objectives of the National Eye Database

1. To establish and maintain a web-based eye health information system on natural history of visual threatening eye diseases, which are of public health importance. The information is useful in the planning and evaluation of eye care service.
2. To determine the effectiveness of treatment, both clinical outcomes and cost, and to identify factors influencing outcomes. This serves the needs of outcome assessment.
3. To provide information necessary to evaluate ophthalmology services through census and key performance indicators, as well as on safety or harm of products and services used in the treatment of a disease. This contributes to continuous quality initiative.
4. To evaluate the accessibility and equity in health care provision. This information enhances accountability.
5. To provide a mean of prompt and wide dissemination of epidemiological and clinical information through web such as real time registries reports and notification of epidemic of contact lens-related corneal ulcer. This is essential for public health advocacy
6. To stimulate and facilitate research on eye diseases.

CATARACT SURGERY REGISTRY

The Cataract Surgery Registry (CSR) was initiated in 2002 and collects data pertaining to patients who have had cataract surgery. Data collected include demography, medical history, operative events, post-operative visual outcomes and probable causes for poor outcome. Since 2008, data on posterior capsular rupture, visual outcome and post-operative endophthalmitis were linked to online key performance indicator for monitoring centre performance while data on incidence of posterior capsular rupture and patients with poor visual outcome are linked to online cumulative sum (CUSUM) to monitor competency of individual surgeon. Annual reports are available at www.acrm.org.my/ned, under the section of publication.

Objectives

1. To determine the frequency, distribution and practice pattern of cataract surgery in Malaysia.
2. To determine the outcomes and factors influencing outcomes of cataract surgery.
3. To evaluate cataract surgery services based on rate of posterior capsular rupture, post-operative infection, post-operative visual outcome and induced astigmatism.
4. To stimulate and facilitate research on cataract and its management.

RETINOBLASTOMA REGISTRY

Retinoblastoma registry collects data on the pattern of clinical presentation, mode of treatment and outcome of patients with Retinoblastoma seen at ophthalmology clinics with paediatric ophthalmology service. The main SDP is Hospital Kuala Lumpur, Hospital Queen Elizabeth and Hospital Umum Sarawak.

Objectives

1. To determine the incidence and distribution of Retinoblastoma in different states in Malaysia.
2. To determine the ethnic-specific prevalence of Retinoblastoma in Malaysia.
3. To study characteristics of RB patients in terms of clinical presentation and stage of disease based on International Intraocular Retinoblastoma Classification.
4. To evaluate types of treatments and monitor treatment trends.
5. To evaluate treatment outcomes including complications related to treatment.

MONTHLY OPHTHALMOLOGY SERVICE CENSUS

Since 2002, Ophthalmology Service of MOH has been collecting annual census from all the hospitals with ophthalmology departments. Data include essential service census and key performance indicators for ophthalmology service. There are 13 sections in the census return, namely out-patients, inpatients, major eye operations, cataract service, diabetic service, glaucoma service, and optometry service, and subspecialty services which include vitreoretinal, corneal, paediatric ophthalmology, oculoplasty, medical retinal, and a public health ophthalmology, and data on training records and prevention of blindness activities. Data are entered monthly by staff at sites via on-line data entry. Heads of ophthalmology department can view their own and other hospitals' real-time reports.

Objectives

1. To evaluate service output in all ophthalmology departments.
2. To evaluate service output in all ophthalmology departments.
3. To study trends in service output and service patterns.
4. To get baseline and norm from services provided by MOH ophthalmology departments.
5. To determine norm and set standards for performance indicators for centres which differ in strength of physical and human resources.

OUTREACH PROGRAMME CENSUS

Ministry of Health (MOH) is the biggest provider of ophthalmology service in the country including the outreach activities. However, data for these activities conducted by all the Ophthalmology Departments are not readily available and most are not properly documented.

Due to the increasing number of cataract surgeries performed in MOH facilities, the existence of the mobile and the satellite cataract services and the expansion in the outreach activities, these data need to be compiled and organised both at the central and departmental level. These data can be analysed and be used for the improvement of Ophthalmology outreach services in the country. Data collected include details of activity, total number of individual screened by age and disease, total number of referral to Ophthalmologist and Optometrists, total number of cataract surgeries done and the updated number of eye trained paramedics.

Objectives

1. To compile data pertaining to outreach activities by all ophthalmology department in the country.
2. To update the number of Primary Eye Care and Ophthalmic Post Basic staff available in the country.
3. To study the patients' demography in the outreach activities
4. To study the eye disease workload in the outreach activities
5. To study the cataract surgery workload in the outreach activities

KEY PERFORMANCE INDICATOR

The Ministry of Health (MOH) launched the implementation of Key Performance Indicators (KPIs) in February 2008 with the aim to assess the overall performance of services provided by Clinical Departments in MOH. The MOH Ophthalmology Service has identified KPIs which measure clinical performance of core ophthalmology service such as out-patient service, cataract surgery and diabetic eye screening.

From 2008 to 2011, there were 7 KPIs being measured in MOH Ophthalmology Service. However, the Quality Unit of MOH revised these KPIs in January 2012 and has implemented 3 KPIs and 4 performance indicators (PIs). Rate of infectious endophthalmitis following cataract surgery and Percentage of patients with post-operative visual acuity of 6/12 or better within 3 months are both PIs and National Indicator Approach (NIA). Rate of Posterior Capsular Rupture during Cataract Surgery has been removed both from KPI and NIA lists.

MEASUREMENT			INDICATOR	STANDARD
PI 1			Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at specialist clinic	$\geq 80\%$ of the patients are seen within ninety (90) minutes
PI 2	KPI 1		Percentage of diabetic patients who were given an appointment for first consultation within 6 weeks	$\geq 80\%$ of the patients are given an appointment for First Consultation within 6 weeks
PI 3			Percentage of patients with waiting time of within 16 weeks for cataract surgery	$\geq 80\%$ of patients have appointment given for cataract surgery within 16 weeks

PI 4	KPI 2	NIA	Rate of infectious endophthalmitis following cataract surgery (2 cases per 1000 operations)	< 0.2% (2 cases per 1000 operations)
PI 5	KPI 3	NIA	Percentage of patients with post-operative visual acuity of 6/12 or better within 3 months following cataract surgery in patients without ocular co-morbidity (900 cases 1000 operations)	> 90% (900 cases per 1000 operations)
PI 6			Cancellation rate of patients listed for cataract surgery under local Anaesthesia	≤ 10% cancellation
PI 7			Number of mortality/morbidity audits/ meetings conducted in the Department (in 6 months)	At least 6 times in 6 months

Note:

PI=Performance Indicator

KPI=Key Performance Indicator

NIA=National Indicator Approach

ADVERSE INCIDENCE REPORTING – INTRAOCULAR LENS

Intraocular lenses may have defect during the manufacturing process and during implantation into the patients' eyes. This can occur along the way from the production of IOL, packaging, distribution, insertion to when the IOL is already implanted into the patients' eyes.

This defect may range from manufacturing defect such as no IOL in the box or fracture of haptics or optics. It may also be in the form of deposits on the IOL or opacification detected weeks to years after surgery. All these defects will contribute directly to the patients' visual outcome. Some defects may require explantation and result in distress to both the patients and the surgeons. The cost for explantation of an opacified IOL also has to be borne by the patient and the eye care providers.

It is also important to identify any common defect for example fracture of haptics or optics as this will be used as feedback to the industries to improve their IOL quality or be used to develop platform for further training pertaining to the IOL if required. Data collected include patient's demography, action taken, outcome and details of IOL.

Objectives

1. To identify any common defect in IOL
2. To detect cases with IOL opacification
3. To study the patients' characteristics in developing IOL opacification
4. To study the patient's outcome following treatment if any

ADVERSE INCIDENCE REPORTING – ENDOPHTHALMITIS

This is a complication which can occur following any intraocular surgery. Although uncommon, once occurred, it may lead to the loss of vision and possible loss of the eye itself. It is a devastating complication both to the patient, the care provider and the health system as the treatment is costly and the outcome after treatment can be uncertain. Therefore prevention of disease and surveillance of an outbreak is important. Data in CSR shows a decreasing percentage of endophthalmitis occurrences following cataract surgery among patients in the Ministry of Health (MOH) over the years. This is possibly due to the use of prophylactic antibiotics and the general improvement in technique and care in cataract surgery. However, it is imperative to monitor this complication closely due to the increasing number of cataract surgeries performed in MOH facilities, the existence of the mobile and the satellite cataract services and also the expansion in the outreach activities throughout the countries. Monitoring is also essential to prevent outbreak. Data collected include demography, possible risk factors, mode of treatment and the outcome following treatment.

Objectives

1. To detect outbreak and therefore exercise the necessary measure to control disease spread
2. To identify its risk factors or any common risk factors among cases
3. To study the patients' characteristics in developing post-operative infectious endophthalmitis
4. To study the patient's outcome following treatment

e-CUSUM

Cataract surgery is the most common procedure done in ophthalmology departments. The procedure is consistent and outcome is measured objectively by visual acuity. Cataract surgery outcome depends on surgeons' skill. With advancement in technology and intraocular lens implantation, good visual outcome is almost certain among patients without pre-existing ocular co-morbidity. Hence, monitoring and evaluating surgeons' competency, especially trainees' performance, are essential in ensuring standard of care.

Cumulative Sum (CUSUM) software auto-mines data on occurrence of posterior capsular rupture and patients with post-operative vision worse than 6/12 from cataract surgery registry on surgery done by individual surgeon using unique surgeon ID. From 2008, by using individual unique username and password, surgeon can access his/her own CUSUM charts via eCUSUM web page. Consultant ophthalmologists can view their own as well as their trainees' charts. By doing so, monitoring on surgeons' competency in cataract surgery is made effectively and easily.

METHODS OF THE NATIONAL EYE DATABASE

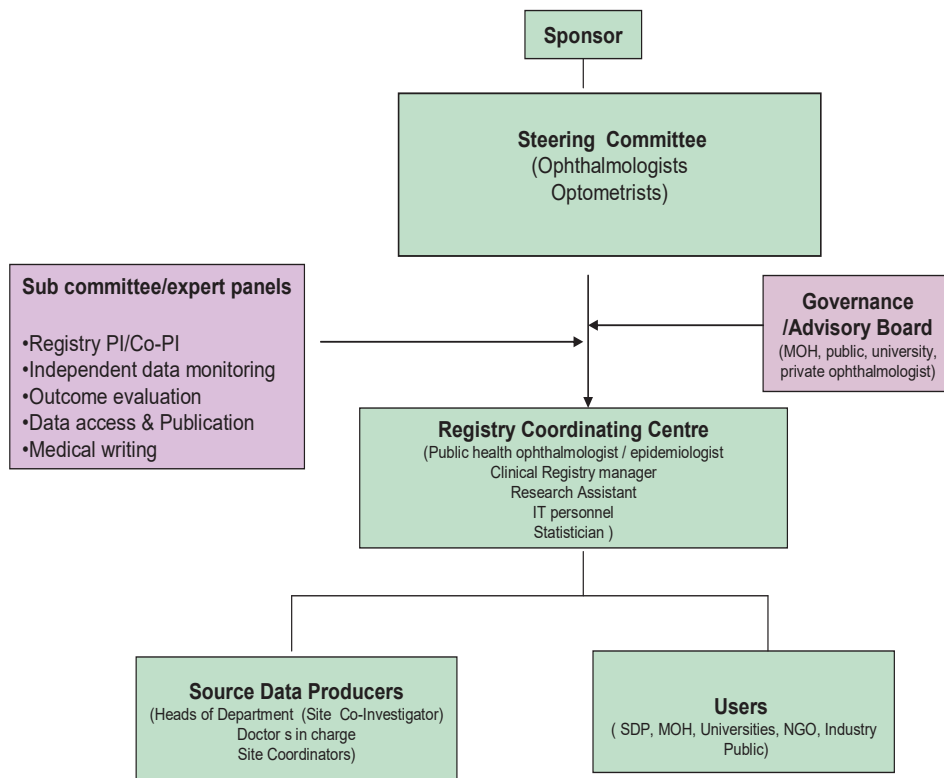
The National Eye Database is designed as a cohort study. It is an online clinical database hosted at the Association of Clinical Registry Malaysia website at www.acrm.org.my/ned. Its protocol was approved by the Medical Research Ethical Committee of MOH on 2nd September 2008 (reference number NMRR 08-552-1707) and is accessible at the NED website.

Data collection and data entry are done at SDP sites. Data are collected either using case report forms (CRF) which are later entered into the web application, or are directly entered into the web application during the course of clinical work.

Data management using data query are set in the web application to reduce inconsistency, out-of-range or missing values. Authorised staff at each SDP is given passwords to perform data entry. Individual SDP reports and aggregated reports based on cumulative data of all SDPs are available real-time at NED website. These reports are only accessible by heads of department, doctors and optometrists via authorised password. The web reports are descriptive analysis of data which have been entered. Annual statistical report will be produced based on data collected for a specific year. The statistical reports will be published yearly and distributed to users in MOH divisions and units, all the ophthalmology departments, universities, other relevant public agencies and non-governmental organisations.

The NED has high level of security for protection of its data. Data protection is ensured at all times through strict compliance with regulatory requirements such as authentications of users and web application owners, access control, encryption, audit trail, control of external communication links and access, as well as system backup and disaster recovery.

Governance



NED Steering Committee Members 2018

Advisor	Dr Nor Fariza Ngah Head of Service, Department of Ophthalmology, Hospital Shah Alam
Chairperson	Dr Mohamad Aziz Salowi Department of Ophthalmology, Hospital Selayang
Members	Dr Goh Pik Pin Clinical Research Centre, Ministry of Health Dr Elias Hussein Department of Ophthalmology, Hospital Kuala Lumpur Dr Zuraidah Mustari Department of Ophthalmology, Hospital Sultanah Nur Zahirah Prof Dr Abdul Mutalib Othman Department of Ophthalmology, Universiti Sultan Zainal Abidin Dr Zaharidah Abd Kadir Department of Ophthalmology, Hospital Sultan Abdul Halim Dr Tengku Norina Tuan Jaafar Department of Ophthalmology, Hospital Raja Perempuan Zainab II Puan Noor Zahirah Hussein Department of Ophthalmology, Hospital Kuala Lumpur
Secretariat	Teng Kam Yoke Ophthalmic trained staff nurse, NED Clinical Registry Manager

NED State Managers 2018

State	State Manager	Hospital
Sarawak + Sabah + Labuan	Dr Lo Tze Wen	Hospital Umum Sarawak
Sarawak	Dr Nur Reza bt Mohd Noh	Hospital Sibu
Johor	Dr RM Nachammai A/P S Ramasamy	Hospital Sultanah Aminah
Melaka	Dr Goh Ching Teak	Hospital Melaka
Perak	Dr Wong Wai Kuan	Hospital Ipoh
Penang	Dr Lee Cheng Imm	Hospital Pulau Pinang
Kedah+Perlis	Dr Annie Lee	Hospital Sultanah Bahiyah
Kelantan	Dr Mariyani bt Mad Said	Hospital Raja Perempuan Zainab II
Terengganu	Dr Dzawati Amalin bt Basemin	Hospital Sultanah Nur Zahirah
Negeri Sembilan	Dr Juliana bt Mohd Thani	Hospital Tuanku Ja'afar
Selangor	Dr Ho Siew Lee	Hospital Serdang
Pahang, Wilayah Persekutuan KL and Putrajaya	Central Manager – Dr Aziz until further notice	Hospital Selayang

State Manager for Sabah, Perlis, Pahang, Wilayah Persekutuan KL, Putrajaya and Labuan will be appointed when the MO/s is/are available and criteria are fulfilled

NED Source Data Producers 2018

NORTHERN ZONE	
No.	SDP
1.	Hospital Kangar
2.	Hospital Alor Star
3.	Hospital Sungai Petani
4.	Hospital Kulim
5.	Hospital Pulau Pinang
6.	Hospital Bukit Mertajam
7.	Hospital Ipoh
8.	Hospital Taiping
9.	Hospital Teluk Intan
10.	Hospital Sri Manjung
	KK-KKM Kedah
	KK-KKM Pulau Pinang
EASTERN ZONE	
No.	SDP
11.	Hospital Kuantan
12.	Hospital Temerloh
13.	Hospital Kuala Terengganu
14.	Hospital Kemaman
15.	Hospital Kota Bharu
16.	Hospital Kuala Krai

	KK-KKM Kelantan
	KK-KKM Terengganu
	KK-KKM Pahang
CENTRAL ZONE	
No.	SDP
17.	Hospital Kuala Lumpur
18.	Hospital Putrajaya
19.	Hospital Selayang
20.	Hospital Klang
21.	Hospital Serdang
22.	Hospital Sungai Buloh
23.	Hospital Ampang
24.	Hospital Shah Alam
25.	Hospital Seremban
26.	Hospital Kuala Pilah
27.	Pusat Perubatan UKM
	Pusat Pembedahan Katarak MAWIP-Hospital Selayang
	KK-KKM Negeri Sembilan
	KK-KKM Wilayah Persekutuan
SOUTHERN ZONE	
No.	SDP
28.	Hospital Melaka
29.	Hospital Johor Bahru
30.	Hospital Muar
31.	Hospital Batu Pahat
32.	Hospital Segamat
33.	Hospital Kluang

34.	Hospital Sultan Ismail
	KK-KKM Johor
	KK-KKM Melaka
SARAWAK	
No.	SDP
35.	Hospital Umum Sarawak
36.	Hospital Sibu
37.	Hospital Bintulu
38.	Hospital Miri
39.	Hospital Sarikei
	KK-KKM Sarawak
SABAH	
No.	SDP
40.	Hospital Queen Elizabeth
41.	Hospital Sandakan
42.	Hospital Tawau
43.	Hospital Keningau
44.	Hospital Wanita dan Kanak-kanak Likas
	KK-KKM Sabah

Foreword

NED continues to champion the management of both clinical and services eye-care data in the country. These data have indeed been providing strong platforms and aiding the evidence-based decisions processes within the MOH Ophthalmology and Optometry Services. By the year 2018, NED has accumulated a total of 15 years of patients' data (almost ½ a million in the Cataract Surgery Registry alone). The usage of these data among NED users have improved tremendously throughout the years. They have been used in research, performance monitoring or training, formulation of service policy and many others. Our Eye Health work on registries, performance monitoring and collaboration between Ophthalmologist and Optometrist has also brought the country to a global level where we were nominated and finally chosen to host the **WHO/IAPB MEETING ON CATARACT SURGERY OUTCOME MONITORING SYSTEMS**. This novel meeting was done at Hospital Shah Alam on 19-20th September 2018. First ever meeting on performance monitoring done by WHO/IAPB, it was not only attended by country representatives from all member states in the Western Pacific Region but also key public health officers, ICO, WHO, IABP and International NGO representatives from all over the world. The meeting endorsed the role of NED as part of a successful Eye Health strategies which can be emulated by other member states. This was an achievement not only for NED but for the whole country. It was indeed a significant milestone in our journey to becoming a developed nation with established eye care system and zero blindness in the population.



Mohamad Aziz Salowi
NED Chairperson 2018

Abbreviation

ADED	Advanced Diabetic Eye Disease	NPDR	Non Proliferative Diabetic Retinopathy
AMD	Age related Macular Degeneration	NPL	No Perception Of Light
CF	Counting Finger	OT	Operating Theatre
CSMO	Clinically Significant Macular Odema	PCO	Posterior Capsule Opacification
CMO	Cystoid Macular Oedema	PCR	Posterior Capsule Rapture
CSR	Cataract Surgery Registry	PDR	Proliferative Diabetic Retinopathy
DER	Diabetic Eye Registry	Phaco	Phacoemulsification
DM	Diabetes Mellitus	PI	Principal Investigator
DR	Diabetic Retinopathy	PL	Perception Of Light
ECCE	Extracapsular Cataract Extraction	RB	Retinoblastoma
FU	Follow Up	RCC	Registry Coordinating Centre
HM	Hand Movement	SD	Standard Deviation
HPT	Hypertension	SDP	Source Data Producers
ICCE	Intracapsular Cataract Extraction	VA	Visual Acuity
IOL	Intraocular Lens	VR	Vitreoretina
MOH	Ministry of Education		
MOE	Ministry of Health		
MR	Medical Retina		
NED	National Eye Database		

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Executive Summary

The Ministry of Health provided cataract services in three different concepts, which can be divided into hospital-based (available at all MOH Hospitals with Ophthalmology Services), satellite cataract centers (available at PPKM-HS and KK KKM Kedah – Hospital Jitra) and outreach mobile services (KK-KKM Mobile).

In term of patient profile, all three types of services received similar elderly age group patients, with median age between 66 to 67.2 years. More than 78% of them have some form of systemic co-morbidities, with Hypertension and Diabetes Mellitus being the most frequent illnesses seen. The only differences between the three services are the presenting visual acuity and ocular morbidities. About 35.7% of patients who went to satellite cataract centers presented with mild to moderate visual impairment, as compared to the other two, in which about 34-41.8% patients presented with blinding vision worse than 3/60. Satellite cataract centers also has less proportion of patients with ocular comorbidities (19.2%) as compared to mobile outreach services (22.8%) and hospital based (36.4%). This is explanatory as satellite centers only received low risk patients with full daycare services.

As for surgical practices, cataract services are mainly done as daycare surgery even at hospitals with dedicated eye wards (74.6%) and at mobile outreach services (91.8%). More than 91% of the cataract surgeries were done using phacoemulsification technique. Manual small incision cataract surgery (MSICS) was also introduced in 2018, and comprised 2.2% of total cataract surgery by mobile outreach services. Topical anesthesia was the anesthesia of choice (78.4% – 92.1%) for surgeons across all services, followed by intracameral anesthesia (38.4 – 46.7%), and subtenon injection (2.8% – 14.5%). More complicated cases at hospital based explained the higher selection of subtenon injection (14.5%). Satellite cataract centers being the center of excellence for cataract surgery, has the lowest rate of intraoperative complication (2.0%) and PCR (0.9%). Overall complication rate was between 2.0% to 7.6%, and overall PCR rate was between 0.9% to 3.7%.

The average rate of post operative endophthalmitis was within the KPI limit ($\leq 0.2\%$). Hospital-based had 22 patients with post operative endophthalmitis (0.04%), and 2 patients from satellite cataract centers (0.1%), and 1 patient from the mobile outreach services (0.0%).

Proportion of patients without ocular co-morbidity achieving unaided BCVA of 6/12 or better was not really satisfactory, especially in the mobile outreach services (47.9%). Within the same group, 79.5% of KK-KKM patients who underwent phacoemulsification techniques achieved BCVA of 6/12 or better, as compared to 80.8% in satellite centers, and 82.4% in hospital-based group. Satellite centers had the highest proportion (91.6%) of eyes achieving the target refraction ($\pm 1.0D$), as compared to 87.7% for hospital based and 85.4% for mobile outreach services.

In summary, satellite cataract centers, particularly PPKM-HS had maintained the standards of being the center of excellence for cataract services in Malaysia. There was not much difference in term of surgical practice and outcome between hospital-based and mobile outreach services. The overall cataract services in Malaysia are of good quality with low post operative endophthalmitis rate.

Report Summary

Stock and Flow

1. The number of SDP increased from 32 SDPs in 2007 to 55 SDPs in 2018 (43 hospitals and 12 KK-KKM).
2. The total number of cataract surgery registered to CSR increased from 12 798 in 2002 to 55 687 in 2018.
3. The CSR ascertainment increased to 97.6% from 93.1% the previous year.

Characteristics of Patients

1. The median age of patients at the time of cataract surgery was 67 in 2018. This age was younger than data published by the Swedish cataract surgery register (74 years old).
2. Up to 1/5 of patients presented within the age group of 65-69 years old (22.8% in 2018).

3. The proportion of patients with systemic co-morbidity increased from 56.9% in 2002 to 81.6% in 2018.
4. There was an increase in the proportion of patients presented for cataract surgery who had Hypertension (from 35.4% in 2002 to 67.7% in 2018) and Diabetes Mellitus (from 28.9% in 2002 to 47.4% in 2018).
5. Senile cataract was the commonest cause of primary cataract (97.2% in 2018).
6. Trauma was the commonest cause for secondary cataract (48.6% in 2018).
7. The proportion of patients who returned for cataract surgery in the fellow eye remained the same from 2002 to 2018, i.e. only one third (37.5% in 2018).
8. Majority of the eyes had no prior ocular surgery (96.7% in 2018). The commonest prior ocular surgery was vitreoretinal surgery and pterygium excision (1.4% in 2018).
9. One third of the eyes had ocular co-morbidity (34.4% in 2018). The commonest ocular co-morbidity was diabetic retinopathy (12.5% in 2018).
10. About 1/3 of the eyes had presenting Pin Hole vision of <3/60 (34.0% in 2018).
11. Refraction was not done in 1/4 of the eyes (15.6% in 2018). Most of them had unaided VA<3/60 (46.0% in 2018).
12. Bimodal pattern of pre-operative vision was consistently observed over the years with one peak at the range between 6/18 to 6/36 and another peak at CF-HM.
13. In term of the choice of IOL power, majority of surgeons chose target refraction as emmetropia or slightly myopic. The mean target refractive power in 2018 was -0.5D (SD 0.3)

Cataract Surgery Practice Patterns

1. Selangor (7 main SDPs), Perak (7 main SDPS) and Sarawak (4 main SDPS), performed higher number of cataract surgeries compared to other state (>5000)
2. More than 3/4 of the cataract surgery was performed by specialists (89.4% in 2018).
3. The percentage of Phaco surgery done by medical officers was maintained at 3-4% (4.2% in 2018)
4. The median duration taken to do a cataract surgery was 23 min for phaco and 53 min for ECCE in 2018.
5. Though there was an increasing trend for day care surgery, from 39.3% in 2002 to 77.5% in 2018, the percentage varied among SDPs.

6. Phaco was the preferred method of cataract surgery and the proportion increased from 39.7% in 2002 to 92.3% in 2018. Percentage of ECCE decreased from 54.0% in 2002 to 5.8% in 2018.
7. The preferred IOL material was acrylic and foldable type.
8. Among combined surgery, VR surgery was the highest. It did not show any specific trend. (1.58% in 2018)
9. Majority of cases were done under local anaesthesia (93.3% in 2018). The preferred type of local anesthesia was topical (80.0% in 2018).
10. The use of topical anesthesia (50 years and above + excluding combined surgery) was 80.8% in 2018.
11. The use of intracameral anesthesia (50 years and above + excluding combined surgery) was 39.4% in 2018
12. The use of subtenon anesthesia (50 years and above + excluding combined surgery) was 13.0% in 2018
13. Majority of the patient operated had IOL implantation (98.3% in 2018). Among these patients who had IOL, 96.7% had posterior chamber IOL.

Intra-operative Complications

1. The percentage of intra-operative complication reduced to 4.7% from 4.9% the previous year.
2. Intra-operative complication in phaco is 3.0% in 2018 same as previous year.
3. PCR in all type of cataract surgery decrease to 2.3% from 2.4% the previous year however it is higher among ECCE group.
4. In 2017, the percentage of intra-operative complication was higher in cataract surgeries performed by MO (8.0%) followed by Gazetting Specialists (7.5%), as compared to Specialist (4.3%). For phaco surgeries, MO (5.8%), Gazetting Specialists (4.5%), and Specialist (2.8%)

Cataract Surgery Outcome

1. In average, more than 85.0% of patient registered to CSR had cataract surgery outcome data.
2. The percentage of patients with post-operative endophthalmitis same as previous year 0.04% (22 patients)
3. The percentage of patients with unplanned return to OT did not show any specific trend. It was 0.30% in 2018

4. There was no specific trend in the causes of unplanned return to OT.
5. In eyes without ocular co-morbidity, the percentage of eyes with unaided vision of 6/12 and better decreased to 63.5% in 2018 from 64.1% in 2017
6. The percentage of eye without ocular co-morbidity achieving refracted vision 6/12 and better in phaco decreased to 94.7% in 2018 from 95.8% in 2017
7. Patients who had phaco had better post-op visual outcome when compared to other type of surgeries. 94.7% of phaco patients had refracted vision of 6/12 or better in 2018 as compared to ECCE (79.3%), lens aspiration (77.2%) and ICCE (55.3%).
8. Post-op visual outcome improved over the years. Refracted visual outcome of 6/12 or better among phaco patient improved from 87.0% in 2002 to 94.7% in 2017 and among ECCE patients from 78.0% in 2002 to 79.3% in 2018.
9. In all type of surgeries, visual outcome became less favourable when there were intra-operative complications.
10. The main contributing factor for eyes with post-operative refracted VA worse than 6/12 was pre-existing ocular co-morbidity
11. When patients with pre-existing ocular co-morbidity were excluded from analysis, high astigmatism followed by pre-existing ocular co-morbidity (not detected preoperatively) were the major causes of poor visual outcome.
12. In 2018, with the mean target refraction (all eyes) of -0.5D, the mean actual refraction was -0.5D for phaco eyes, and -0.7D for ECCE eyes. Thus, eyes which had undergone ECCE had more myopic shift than eyes which had phaco.
13. In 2018, there was disparity between the targeted and the actual refraction in phaco, 87.9% of eyes had a different in target and actual refraction of between $\pm 1.0D$.

KLINIK KATARAK – KKM

Stock and Flow

1. The total number of cataract surgery registered to CSR increased from 140 in 2013 to 2692 in 2018.

Characteristics of Patients

2. The median age of patients at the time of cataract surgery was 68 in 2018. This age was older than in hospitals-based surgery (66 years old).
3. Up to 1/5 of patients presented within the age group of 65-69 years old (22.9% in 2018).
4. In 2018, the proportion of patients with systemic co-morbidity was 78.8% (Hypertension was 67.4% and Diabetes Mellitus was 43.2%)
5. Senile cataract was the commonest cause of primary cataract (98.5 % in 2018).
6. Trauma was the cause for secondary cataract (66.7% in 2018).
7. The proportion of patients who returned for cataract surgery in the fellow eye was only 1/4 (33.1% in 2018) which appeared to be increasing
8. Majority of the eyes had no prior ocular surgery (98.4% in 2018).
9. Less than one third of the eyes had ocular co-morbidity (22.8% in 2018). The commonest ocular co-morbidity was Diabetic Retinopathy in any forms (6.7%% in 2018).
10. In 2018, 41.8% eyes presented with Pin Hole vision of <3/60
11. Refraction was done in most of the eyes, only 17.8% was not done refraction, and most of them had unaided VA<3/60 (53.2% in 2018).
12. Bimodal pattern of pre-operative vision was observed over the years with one peak at the range between 6/18 to 6/36 and another peak at CF-HM.
13. In term of the choice of IOL power, majority of surgeons chose target refraction as emmetropia or slightly myopic. The mean target refractive power in 2017 was -0.4D (SD 0.3)

Cataract Surgery Practice Patterns

1. The number of cataract surgery performed by SDPs varied depending on location, period of service and availability of the bus and equipment. However numbers of cataract surgery in Sarawak performed was decreased to 572 in 2018 from 855 in 2017.

2. The median duration taken to do a cataract surgery was 21 min for phaco and 43 min for ECCE in 2018.
3. The percentage of surgeries performed under daycare setting decrease to 91.8% in 2018 from 87.5% the previous year
4. Phaco was the preferred method of cataract surgery, however the proportion decreased to 91.6% in 2018 from 93.2% the previous year. Percentage of ECCE decreased to 5.1% in 2018 from 6.1% the previous year. SICS was introduced in 2018 (2.2%).
5. The preferred IOL material was acrylic and non-foldable type.
6. The use of topical anesthesia increased from 64.7% in 2013 to 92.1% in 2018, subtenon anesthesia reduced from 37.4% in 2013 to 10.7% in 2018 and intracameral anesthesia increased to 46.7% in 2018 from 2.2% in 2013.
7. Majority of the patient operated had IOL implantation (98.2% in 2018). Among these patients who had IOL, 96.5% had posterior chamber IOL.

Intra-operative Complications

1. The percentage of intra-operative complication increased to 7.6% in 2018 from 6.2% the previous year.
2. PCR increased from to 3.7% in 2018 from 3.1% the previous year.

Cataract Surgery Outcome

1. In average, more than 70.0% of patient registered to CSR had cataract surgery outcome data (73.6% in 2018)
2. The percentage of patients with post-operative endophthalmitis was 0.0% (1 patient).
3. In eyes without ocular co-morbidity, only ½ of eyes had post-op unaided visual acuity 6/12 or better (47.9% in 2018). With refraction, 78.3% in 2018 achieved post-op vision 6/12 or better.
4. The percentage of eye without ocular co-morbidity achieving refracted vision 6/12 and better in phaco decreased to 79.5% in 2018 from 82.3% in 2017
5. Patients who had phaco had better post-op visual outcome when compared to other type of surgeries. 79.5% of phaco patients had refracted vision of 6/12 or better in 2018 as compared to ECCE (42.9%).

6. The main contributing factor for eyes with post-operative refracted VA worse than 6/12 was pre-existing ocular co-morbidity followed by high astigmatism.
7. When patients with pre-existing ocular co-morbidity were excluded from analysis, astigmatism was the major causes of poor visual outcome.
8. In 2018, with the mean target refraction (all eyes) was -0.4D, the mean actual refraction was -0.5D for phaco eyes, and -0.6D for ECCE eyes. Thus, eyes which had undergone ECCE had more myopic shift than eyes which had phaco.
9. In 2018, there was disparity between the targeted and the actual refraction in phaco. 85.4% of eyes had a different in target and actual refraction of between $\pm 1.0D$.

PUSAT PEMBEDAHAN KATARAK PPKM-HS-HOSPITAL SELAYANG AND KK-KKM KEDAH (HOSPITAL JITRA)

Stock and Flow

1. The total number of cataract surgery registered to CSR increased from 1824 in 2015 to 4261 in 2018.

Characteristics of Patients

2. The mean age of patients at the time of cataract surgery was 66.3 in 2018. This age was almost equal in hospital setup (66 years old).
3. Up to 1/5 of patients presented within the age group of 65-69 years old (23.5% in 2018).
4. In 2018, the proportion of patients with systemic co-morbidity was 81.5% (Hypertension was 67.2% and Diabetes Mellitus was 46.8%)
5. Senile cataract was the commonest cause of primary cataract (86.7% in 2018).
6. The proportion of patients who returned for cataract surgery in the fellow eye was one third (34.3% in 2018).
7. Majority of the eyes had no prior ocular surgery (98.6% in 2018).
8. Less than one third of the eyes had ocular co-morbidity (19.2% in 2018). The commonest ocular co-morbidity was Diabetic Retinopathy in any forms (9.5% in 2018)
9. One third of the eyes had presenting Pin Hole vision of $<6/18 - 6/60$ (35.7% in 2018).

10. Refraction was done in most of the eyes. Only 13.0% was not refracted and most of them had unaided VA<6/18 - 6/60 (37.8% in 2018).
11. Bimodal pattern of pre-operative vision was observed over the years with one peak at the range between 6/18 to 6/36 and another peak at CF-HM.
12. In term of the choice of IOL power, majority of surgeons chose target refraction as emmetropia or slightly myopic. The mean target refractive power in 2018 was -0.3D (SD 0.1)

Cataract Surgery Practice Patterns

1. The median duration taken to do a cataract surgery was 20 min for phaco and 42.5 min for ECCE in 2018.
2. Phaco was the preferred method of cataract surgery and the proportion increased from 95.1% in 2013 to 96.6% in 2018. Percentage of ECCE increased to 2.6% in 2018 from 1.5% the previous year.
3. The preferred IOL material was acrylic and non-foldable type.
4. The use of topical anesthesia increased to 89.8% in 2018 from 85.0% the previous year. Intracameral anaesthesia showed an increasing trend, from 19.1% in 2013 to 46.5% in 2018. Subtenon anesthesia reduced from 11.0% in 2013 to 2.8% in 2018
5. Majority of the patient operated had IOL implantation (99.5% in 2018). Among these patients who had IOL, 98.7% had posterior chamber IOL.

Intra-operative Complications

1. The percentage of intra-operative complication decreased to 2.0% in 2018 from 2.6% in 2017
2. PCR decreased to 0.9% in 2018 from 1.2% the previous year.

Cataract Surgery Outcome

1. In 2017, 87.0% cataract surgery had outcome data.
2. The percentage of patients with post-operative endophthalmitis was 0.1%.(2 patients)
3. In eyes without ocular co-morbidity, only ½ of eyes had post-op unaided visual acuity 6/12 or better (59.6% in 2018)
4. The percentage of eyes without ocular co-morbidity achieving refracted vision 6/12 and better in phaco decreased to 80.8% in 2018 from 89.0% the previous year.

5. The main contributing factor for eyes with post-operative refracted VA worse than 6/12 was pre-existing ocular co-morbidity followed by high astigmatism.
6. When patients with pre-existing ocular co-morbidity were excluded from analysis, high astigmatism was the major causes of poor visual outcome.
7. In 2018, with the mean target refraction (all eyes) was -0.3D, the mean actual refraction was -0.4D for phaco eyes, and -0.6D for ECCE eyes. Thus, eyes which had undergone ECCE had more myopic shift than eyes which had phaco.
8. In 2018, there was disparity between the targeted and the actual refraction in phaco. 91.6% of eyes had a different in target and actual refraction of between $\pm 1.0D$

RETINOBLASTOMA REGISTRY

Stock and Flow

1. A total number of 254 retinoblastoma was registered, of which 20 and 21 patients were diagnosed in 2017 and 2018.

Characteristics of Patients

1. The median age at presentation was 1.99 years. The youngest age was 20 days and the oldest was 13 years. About half (50.7%) of these patients are below 24 months and 25% were less than 12 months at presentation.
2. There were slightly more males (55.9%) than females affected, and the majority were of Malay ethnicity (54.3%), followed by Chinese (16.9%) and Indians (7.1%).

Ocular History and Presentation

1. The most common presentation was leukocoria (79.5%) followed by strabismus.
2. The median duration of disease from onset of symptoms to presentation was 2 months with the majority (64.6%) within 1 to 6 months.
3. A total of 343 eyes were affected, 165 (48.1%) had unilateral disease whereas 89 patients (51.9%) had bilateral eyes.
4. A total of 6 patients had positive family history of retinoblastoma.

Investigation and Classification

1. CT scan imaging reported 65.6% mass was detected, however only 64.4% showed calcification.
2. MRI imaging reported 14.3% mass was detected, and 8.5% showed calcification.
3. Extraocular extension detected through imaging in 36 eyes, 10.5% and 9 eyes, 2.6% through CT scan and MRI respectively. Majority of them were extension into the optic pathway.
4. More than half (52.5%) of the patients presented with Group E Retinoblastoma

Management and Outcome

1. 59.4% of patients had systemic chemotherapy with a mean of 6.5 cycles (maximum 15 chemotherapy cycles)
2. 16 patients received intra-arterial chemotherapy (IAC) and 8 patients needed external beam radiation due to the advanced stage of the disease.
3. In unilateral RB 73.3% were enucleated and 36.4% of them showed histopathological extension outside the eyeball.
4. In bilateral RB, 37.1% were enucleated and 8 patients had external beam radiotherapy
5. 9.6% of bilateral RB and 2.4% of unilateral RB reported recurrence of the disease
6. The mean duration of recurrence was 12 months in unilateral cases and 15.6 months in bilateral cases, after the initial treatment.
7. In unilateral and bilateral RB, 9.1% of patients were lost their follow up.
8. Death was reported in 12 patients in bilateral RB and 8 patients in unilateral RB.

Summary of Comparison Between All MOH and KK-KKM

(2018)

		All MOH (n=48,734)	KK-KKM Static (n=4,261)	KK-KKM Mobile, Transit and Carnival (n=2,692)
Concept of Service		Hospital based service+KK-KKM	Outreach Low risk patients Fully day care Fully certified surgeons	Outreach Multilevel risk of patients Fully certified surgeons
Patient Profile	Age	Mean 66.0	Mean 66.3	Mean 67.2
	Main age group	65-69 (22.8%)	65-69 (23.5%)	65-69 (22.9%)
	Systemic Co-morbidity	81.7% (Hypertension 67.7%) (Diabetis Mellitus 47.7%)	81.5% (Hypertension 67.2%) (Diabetis Mellitus 46.8%)	78.8% (Hypertension 67.4%) (Diabetis Mellitus 43.2%)
	Second Eye Surgery	37.9%	34.3%	33.1%
	Ocular Co-morbidity	36.4% The commonest was diabetic retinopathy in any forms (13.0%)	19.2% The commonest was diabetic retinopathy in any forms (9.5%)	22.8% The commonest was diabetic retinopathy in any forms (6.6%)
	Pin Hole VA	<3/60 (32.8%)	<3/60 (35.7%)	<3/60 (41.8%)
Surgical Practices	Day Care	74.6%	99.9%	91.8%
	Method of Cataract Extraction	Phaco 91.6% ECCE 6.2%	Phaco 96.6% ECCE 2.6%	Phaco 91.6% ECCE 5.1%
	Main anaesthesia	Topical (78.4%) Intracameral (38.4%) Subtenon (14.5%)	Topical (89.8%) Intracameral (46.5%) Subtenon (2.8%)	Topical (92.1%) Intracameral (46.7%) Subtenon (10.7%)
Intraoperative Complication	Overall percentage of intra-operative complication	4.8%	2.0%	7.6%
	PCR	2.4%	0.9%	3.7%

Outcome	Surgeries with outcome data	90.9%	87.0%	73.6%
	Post-operative Endophthalmitis	0.04% (22 patients)	0.1% (2 patients)	0%
	Percentage of unaided VA 6/12 or better in eye without ocular co-morbidity	53.0%	59.6%	47.9%
	Percentage of surgery using phaco achieving BCVA 6/12 or better in eyes without ocular co-morbidity	82.4%	80.8%	79.5%
	Percentage of eyes achieving difference of target and actual refraction within $\pm 1.0D$	87.7%	91.6%	85.4%

Limitation: All MOH includes KK-KKM

CHAPTER 1: CATARACT SURGERY REGISTRY

1.1 Stock and Flow

1.1.1 Stock and Flow

Table 1.1.1-1: Stock and Flow, CSR 2019-2018

Year	No of SDP		Total no of cataract surgery registered to CSR	Cataract surgery with visual outcome records	
	Hospital	KK1M (carnival, mobile, static and transit)		n	%
2009	36	0	24438	20590	84.3
2010	36	0	28506	24521	86.0
2011	36	0	30611	27219	88.0
2012	36	0	32473	28589	88.0
2013	40	7	37150	33063	89.0
2014	42	19	40532	36251	89.4
2015	42	26	44534	39066	87.7
2016	44	25	50625	44672	88.2
2017	44	35	54242	48020	88.5
2018	43	29	55687	49981	89.8

*2018: Hosp = 43; KK-KKM carnival = 7, static = 2, mobile = 16, transit = 11.

Table 1.1.1-2: Ascertainment for MOH Hospitals including KK1M locations, CSR 2009–2018

Year	Total number of cataract surgery performed at MOH Hospitals (Source: MOH census returns)	Total number of cataract surgery performed at MOH hospitals and registered to CSR	Ascertainment (%)
2009	26274	24438	93.0%
2010	29873	28506	95.4%
2011	32099	30611	95.4%

2012	34363	32473	94.5%
2013	39389	37150	94.3%
2014	41927	40532	96.7%
2015	46202	44534	96.4%
2016	53897	50625	93.9%
2017	58273	54242	93.1%
2018	57055	55687	97.6%

Note: It is assumed that all KK-KKM (mobile, static and transit) census as 100%.

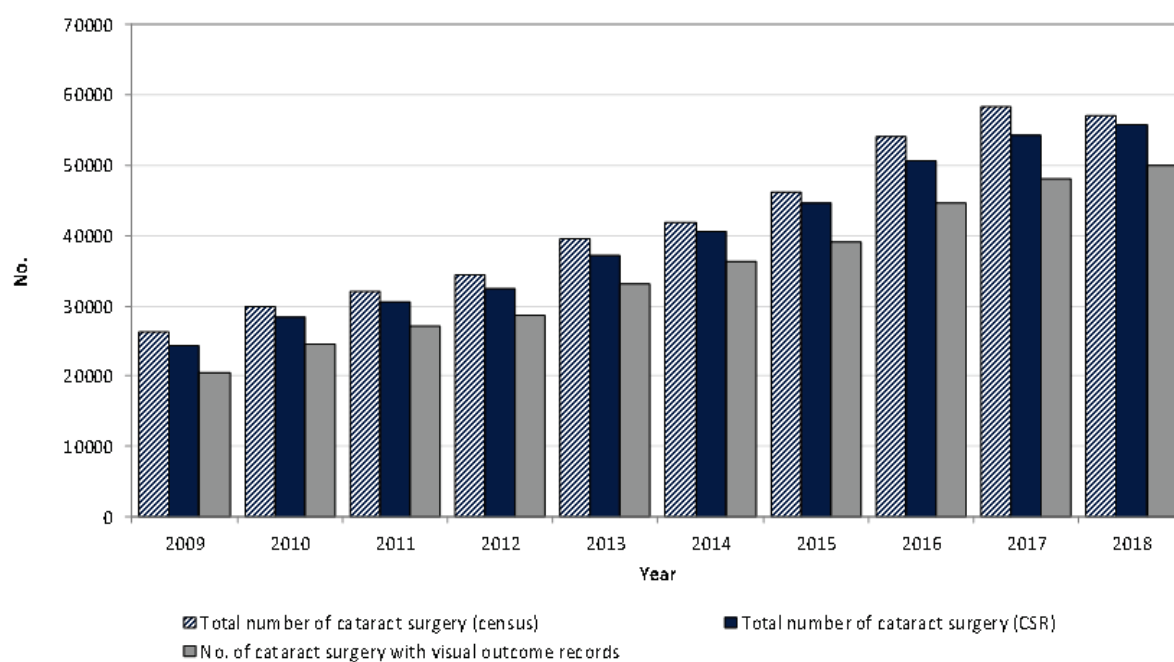


Figure 1.1.1-1: Stock and Flow, CSR 2009–2018

Table 1.1.1-3: Ascertainment by SDP, CSR 2018

	Total no. of cataract surgery (census)	Total no. of cataract surgery registered to CSR (operative record)	Total no. of outcome form submitted	Total no. of outcome form with unaided vision	Total no. of outcome form with refracted vision	% Ascertainment for CSR	% Ascertainment for Outcome form submitted	% Ascertainment for Outcome with unaided vision	% Ascertainment for Outcome with refracted vision
	(a)	(b)	(c)	(d)	(e)	(b/a*100)	(c/b*100)	(d/c*100)	(e/c*100)
Alor Setar*	1556	1556	1522	1522	1249	100.0	97.8	100.0	82.1
<i>(including KK-KKM Alor Setar)</i>									
Ampang	1056	1034	1033	1033	1019	97.9	99.9	100.0	98.6
Batu Pahat	848	848	719	719	719	100.0	84.8	100.0	100.0
Bintulu	230	230	186	186	186	100.0	80.9	100.0	100.0
Bukit Mertajam	1508	1508	1385	1385	1369	100.0	91.8	100.0	98.8
Ipoh	3747	3747	3436	3436	3434	100.0	91.7	100.0	99.9
Kangar	763	752	738	738	722	98.6	98.1	100.0	97.8
Kemaman	137	116	102	102	93	84.7	87.9	100.0	91.2
Keningau*	294	294	267	267	250	100.0	90.8	100.0	93.6
<i>(including KK-KKM Keningau)</i>									
Klang	2415	2330	2034	2034	1942	96.5	87.3	100.0	95.5
Kluang	221	212	208	208	199	95.9	98.1	100.0	95.7
Kota Bharu	1368	1368	1331	1329	1197	100.0	97.3	99.8	89.9
Kuala Krai	459	459	429	429	417	100.0	93.5	100.0	97.2
Kuala Lumpur	2965	2428	1898	1898	1894	81.9	78.2	100.0	99.8
Kuala Pilah	693	629	487	487	484	90.8	77.4	100.0	99.4
Kuala Terengganu*	1447	1447	1432	1432	1313	100.0	99.0	100.0	91.7
<i>(including KK-KKM Sultanah Nur Zahirah)</i>									
Kuantan	1304	1304	1099	1099	1096	100.0	84.3	100.0	99.7
Kulim	615	615	612	612	610	100.0	99.5	100.0	99.7

Likas	34	34	23	23	23	100.0	67.6	100.0	100.0
Melaka	2638	2637	2404	2404	2342	100.0	91.2	100.0	97.4
Miri	1122	1122	1061	1061	1001	100.0	94.6	100.0	94.3
Muar	1087	1086	1063	1063	1008	99.9	97.9	100.0	94.8
Pulau Pinang	2174	2164	2083	2083	2077	99.5	96.3	100.0	99.7
	Total no. of cataract surgery (census)	Total no. of cataract surgery registered to CSR (operative record)	Total no. of outcome form submitted	Total no. of outcome form with unaided vision	Total no. of outcome form with refracted vision	% Ascertainment for CSR	% Ascertainment for Outcome form submitted	% Ascertainment for Outcome with unaided vision	% Ascertainment for Outcome with refracted vision
	(a)	(b)	(c)	(d)	(e)	(b/a*100)	(c/b*100)	(d/c*100)	(e/c*100)
Putrajaya	572	572	559	559	536	100.0	97.7	100.0	95.9
Queen Elizabeth KK*	1951	1951	1127	1127	1126	100.0	57.8	100.0	99.9
<i>(including KK-KKM Queen Elizabeth)</i>									
Sandakan	429	428	369	369	362	99.8	86.2	100.0	98.1
Sarikei*	553	549	499	499	468	99.3	90.9	100.0	93.8
<i>(including KK-KKM Sarikei)</i>									
Segamat	230	223	199	199	199	97.0	89.2	100.0	100.0
Selayang	1814	1526	1466	1466	1237	84.1	96.1	100.0	84.4
Serdang	1784	1784	1756	1750	1523	100.0	98.4	99.7	86.7
Seremban	2334	2188	1805	1805	1764	93.7	82.5	100.0	97.7
Shah Alam	666	613	604	604	604	92.0	98.5	100.0	100.0
Sibu	735	734	681	680	651	99.9	92.8	99.9	95.6
Sri Manjung	909	909	896	896	827	100.0	98.6	100.0	92.3
Sultan Ismail	851	851	789	789	789	100.0	92.7	100.0	100.0
Sultanah Aminah JB	1207	1205	1144	1144	1119	99.8	94.9	100.0	97.8
Sungai Buloh	524	524	502	502	450	100.0	95.8	100.0	89.6
Sungei Petani*	1612	1524	1486	1486	1430	94.5	97.5	100.0	96.2
<i>(including KK-KKM Sungai Petani)</i>									
Taiping	1863	1863	1854	1854	1777	100.0	99.5	100.0	95.8

Tawau*	507	507	459	458	439	100.0	90.5	99.8	95.6
<i>(including KK-KKM Tawau)</i>									
Teluk Intan	1071	1071	1065	1065	1065	100.0	99.4	100.0	100.0
Temerloh	848	848	743	743	738	100.0	87.6	100.0	99.3
Umum Sarawak	1461	1444	1156	1156	1156	98.8	80.1	100.0	100.0

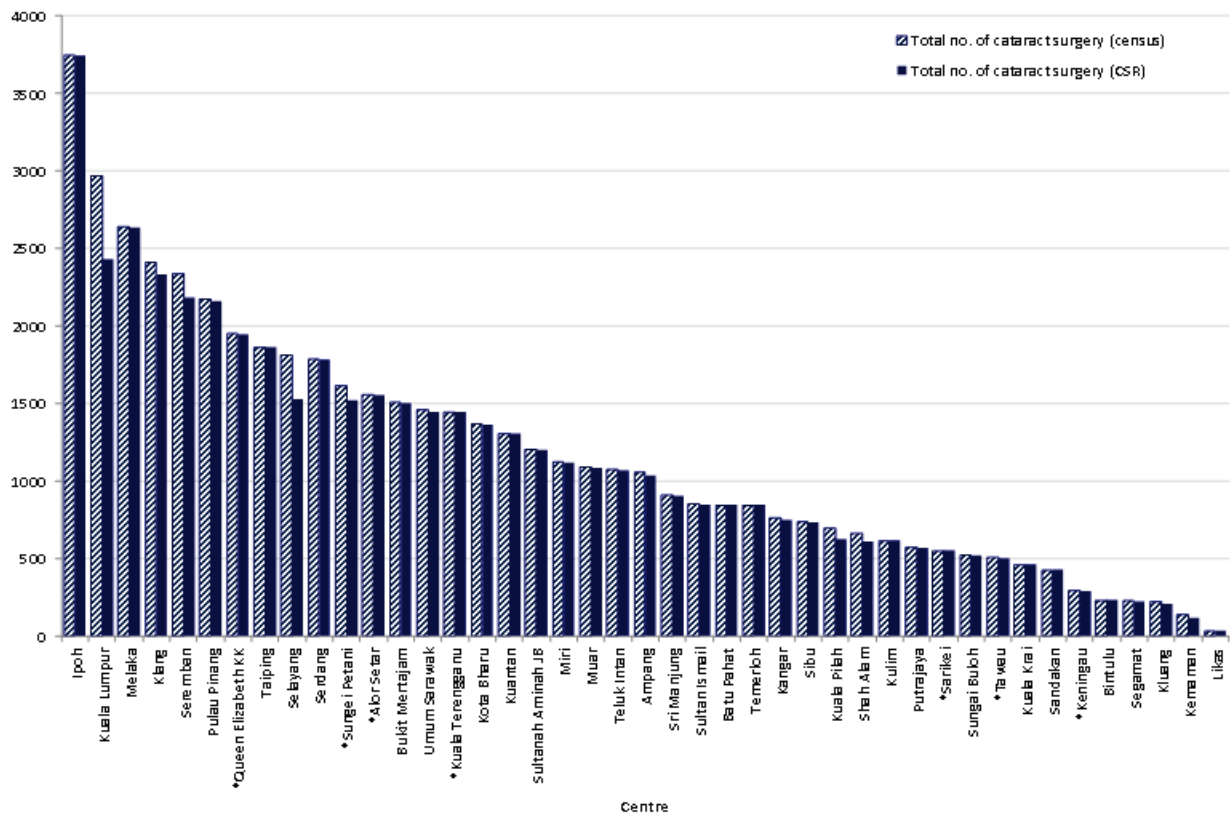


Figure 1.1.1-2 Ascertainment by SDP, CSR 2018

1.2 Characteristics of Patient

1.2.1 Demography

Table 1.2.1-1: Age and Gender Distribution, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Total number of cataract surgery	24438		28506		30611		32473		37150		40532		44534		50624		54242		55687	
Age																				
Mean (years)	64.7		65		65		65		65.7		65.9		65.7		65.9		66.0		66.1	
Median (years)	66		66		66		66		67		67		67		67		67		67	
Minimum (month)	1.2		1.8		2.6		0.8		0.8		3.3		1.7		2.3		2		3.9	
Maximum (years)	99		99		104		99		105		101		97		110		99		99	
% Distribution																				
Age group, years	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
0-4	56	0.2	60	0.2	49	0.2	64	0.2	20	0.1	25	0.1	68	0.2	64	0.1	90	0.2	101	0.2
5-9	66	0.3	70	0.3	74	0.2	81	0.3	41	0.1	40	0.1	70	0.2	84	0.2	101	0.2	102	0.2
10-14	43	0.2	47	0.2	57	0.2	61	0.2	64	0.2	49	0.1	69	0.2	75	0.2	64	0.1	63	0.1
15-19	52	0.2	70	0.3	72	0.2	64	0.2	82	0.2	77	0.2	62	0.1	86	0.2	88	0.2	98	0.2
20-24	77	0.3	73	0.3	103	0.3	75	0.2	94	0.3	86	0.2	118	0.3	104	0.2	119	0.2	111	0.2
25-29	104	0.4	90	0.3	90	0.3	96	0.3	113	0.3	106	0.3	127	0.3	147	0.3	149	0.3	168	0.3
30-34	106	0.4	137	0.5	125	0.4	146	0.5	133	0.4	128	0.3	177	0.4	196	0.4	206	0.4	246	0.4
35-39	180	0.7	198	0.7	224	0.7	196	0.6	219	0.6	212	0.5	280	0.6	295	0.6	296	0.6	347	0.6
40-44	377	1.5	457	1.6	408	1.3	474	1.5	459	1.2	469	1.2	478	1.1	521	1.0	576	1.1	586	1.1
45-49	881	3.6	966	3.4	984	3.2	988	3.0	1110	3.0	1035	2.6	1205	2.7	1193	2.4	1198	2.2	1208	2.2
50-54	1816	7.4	2077	7.3	2186	7.1	2089	6.4	2220	6.0	2365	5.8	2525	5.7	2775	5.5	2848	5.3	2765	5.0
55-59	2868	11.7	3379	11.9	3646	11.9	3758	11.6	4158	11.2	4507	11.1	4954	11.1	5470	10.8	5661	10.4	5572	10.0
60-64	4088	16.7	4846	17.0	5341	17.5	5689	17.5	6443	17.3	7272	17.9	7914	17.8	9059	17.9	9629	17.8	9872	17.7
65-69	4656	19.1	5069	17.8	5609	18.3	6372	19.6	7556	20.3	8563	21.1	9742	21.9	11365	22.5	11971	22.1	12710	22.8

70-74	4878	20.0	5651	19.8	5870	19.2	6102	18.8	7045	19.0	7444	18.4	7912	17.8	9256	18.3	10732	19.8	10852	19.5
75-79	2789	11.4	3446	12.1	3816	12.5	4135	12.7	5077	13.7	5502	13.6	5965	13.4	6481	12.8	6948	12.8	7086	12.7
≥80	1401	5.7	1868	6.6	1957	6.4	2083	6.4	2316	6.2	2652	6.5	2868	6.4	3453	6.8	3566	6.6	3800	6.8
Missing	0	0	2	0.0	0	0	0	0	0	0	0	0	0	0	1	0.0	0	0.0	0	0.0
Gender																				
Male	11829	48.4	13631	47.8	14696	48	15506	47.8	17604	47.4	19109	47.2	21486	48.3	24070	47.6	25917	47.8	26085	46.8
Female	12609	51.6	14871	52.2	15915	52	16966	52.3	19546	52.6	21423	52.8	23048	51.7	26555	52.5	28325	52.2	29602	53.2
Missing	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

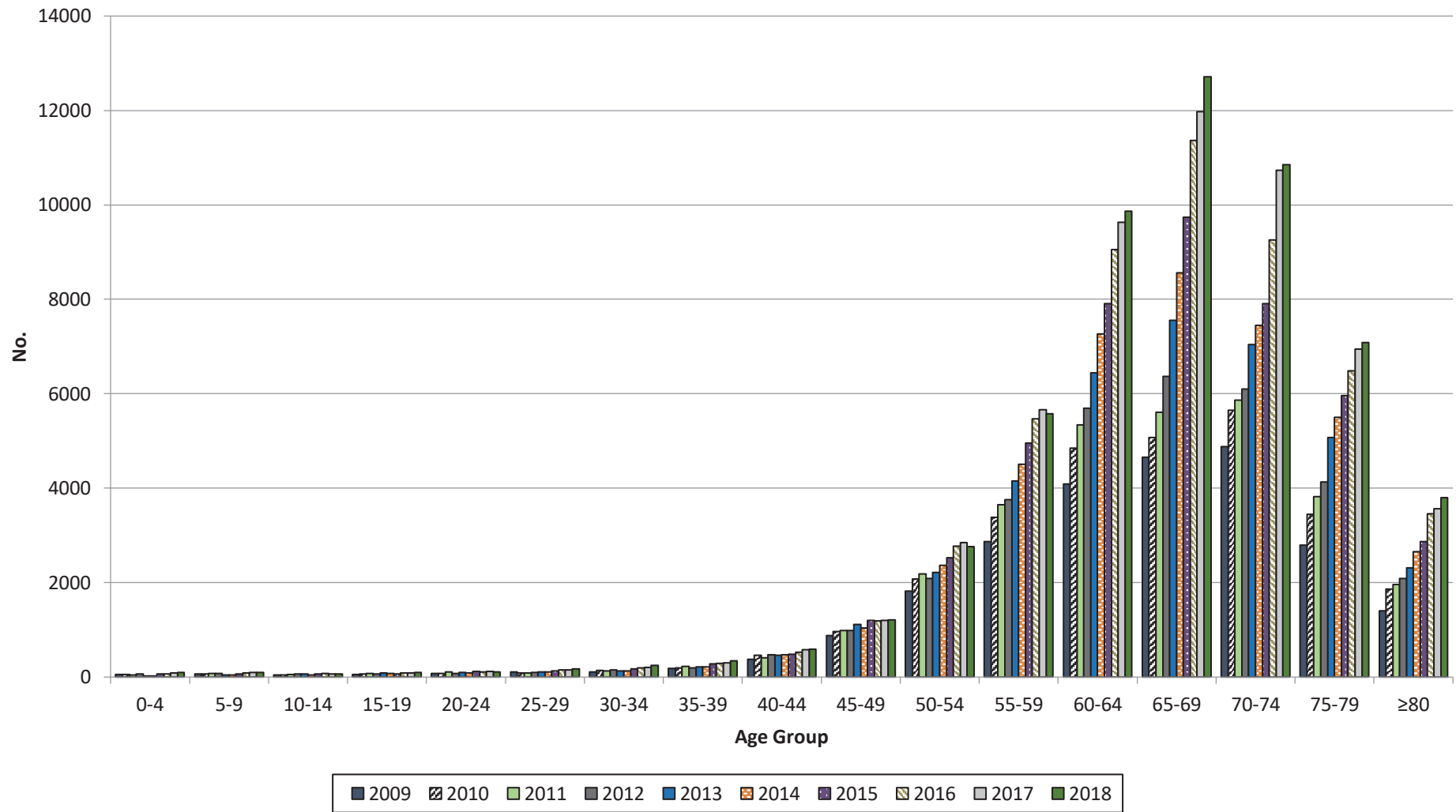


Figure 1.2.1-1: Age Distribution, CSR 2009-2018

1.2.2 Systemic Co-morbidity

Table 1.2.1-2: Distribution of Systemic Co-morbidity, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
Percentage of patients with any systemic co-morbidity	71		70.6		72		72.4		74.8		75.6		76.2		78.7		79.7		81.6	
Percentage of patients with specific systemic co-morbidity																				
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Hypertension	13050	53.4	15630	54.8	17238	56.3	18655	57.45	22327	60.1	24832	61.3	27700	62.2	32708	64.6	35633	65.7	37677	67.7
Diabetes Mellitus	9556	39.1	11598	40.7	12778	41.7	13635	41.99	16073	43.3	17976	44.4	19670	44.2	23157	45.7	25237	46.5	26421	47.4
Ischaemic Heart Disease	2294	9.4	2441	8.6	2515	8.2	2565	7.9	3026	8.1	3283	8.1	3438	7.7	3936	7.8	4384	8.1	4565	8.2
Renal Failure	679	2.8	804	2.8	814	2.7	822	2.53	1021	2.7	1160	2.9	1409	3.2	1696	3.4	1901	3.5	2042	3.7
COAD/Asthma	1039	4.3	1024	3.6	1088	3.6	1104	3.4	1340	3.6	1543	3.8	1544	3.5	1789	3.5	1891	3.5	2023	3.6
Cerebrovascular accident	305	1.2	302	1.1	380	1.2	352	1.08	444	1.2	571	1.4	618	1.4	800	1.6	944	1.7	1043	1.9
7. Others	2460	10.1	2891	10.1	3538	11.6	3916	12.06	5766	15.5	6797	16.8	7904	17.7	10196	20.1	12549	23.1	14362	25.8

Number or percentage may be more than total or 100% as patients might have more than one systemic co-morbidity

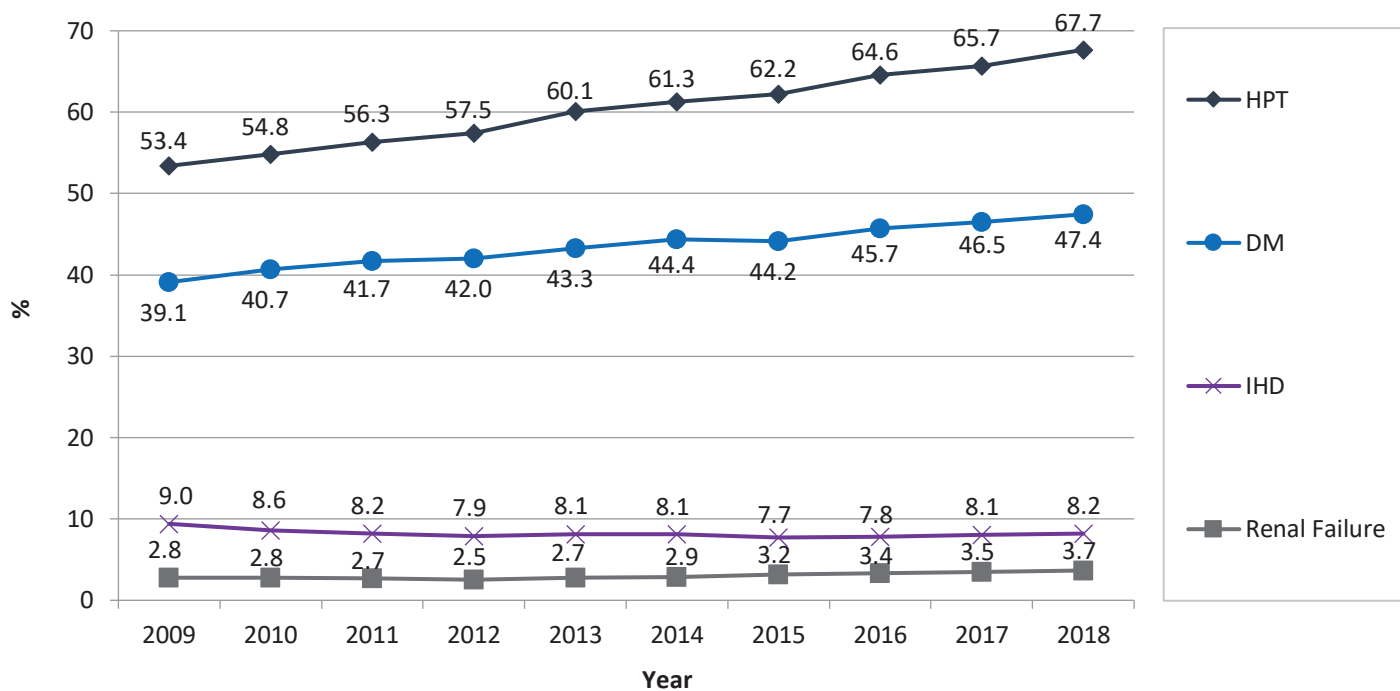


Figure 1.2.1-2: Percentage of Patients with Specific Ocular Co-morbidity, CSR 2009-2018

1.2.2 Cause of Cataract

Table 1.2.2-1: Causes of Cataract, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Primary cataract	23117	94.6	26981	94.7	29050	94.9	30813	94.9	35116	94.5	38908	96.0	42949	96.4	48719	96.2	51143	94.3	53742	96.5
Secondary cataract	587	2.4	660	2.3	764	2.5	608	1.9	547	1.5	568	1.4	750	1.7	818	1.6	852	1.6	948	1.7
Missing value	734	3	865	3	797	2.6	1052	3.2	1487	4.0	1056	2.6	835	1.9	1088	2.1	2247	4.1	997	1.8
Primary Cataract (N)	23117		26981		29050		30813		35116		38168		42237		47967		51143		53742	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Senile/age related	22782	98.6	26671	98.9	28736	98.9	30299	98.3	34841	99.2	37904	99.3	41822	99.0	47541	99.1	49601	97.0	52213	97.2
Development	166	0.7	236	0.9	249	0.9	419	1.36	233	0.7	215	0.6	302	0.7	331	0.7	357	0.7	350	0.7
Congenital	124	0.5	44	0.2	34	0.1	57	0.18	11	0.0	13	0.0	55	0.1	48	0.1	74	0.1	72	0.1
Others	45	0.2	30	0.1	31	0.1	38	0.12	31	0.1	36	0.1	58	0.1	47	0.1	38	0.1	48	0.1
Secondary Cataract (N)	587		660		764		608		547		541		717		798		852		948	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Trauma	330	56.2	346	52.4	383	50.1	313	51.48	322	58.9	343	63.4	423	59.0	460	57.6	431	50.6	461	48.6
Surgery induced	107	18.2	93	14.1	101	13.2	122	20.07	88	16.1	78	14.4	110	15.3	144	18.0	158	18.5	208	21.9
Drug induced	79	13.5	64	9.7	60	7.9	46	7.57	48	8.8	71	13.1	96	13.4	95	11.9	92	10.8	117	12.3
Others	71	12.1	157	23.8	220	28.8	127	20.89	89	16.3	49	9.1	88	12.3	99	12.4	150	17.6	145	15.3

1.2.3 First or Second Eye Surgery

Table 1.2.3-1: First of Second/Fellow eye Surgery, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
First eye surgery	16446	67.3	18919	66.4	20466	66.9	21539	66.3	23986	64.6	26080	64.3	28807	64.7	32404	64.0	34385	63.4	34781	62.5
Fellow eye surgery	7938	32.5	9441	33.1	10088	33.0	10896	33.6	13045	35.1	14267	35.2	15665	35.2	18151	35.9	19816	36.5	20866	37.5
Missing	54	0.2	146	0.5	57	0.2	38	0.1	119	0.3	185	0.5	62	0.1	70	0.1	41	0.1	40	0.1
Patients who had second surgery in the same year	2702	11.1	2129	7.5	2246	7.3	2545	7.8	3214	8.7	3336	8.2	3721	8.4	4663	9.2	5399	10.0	5377	9.7
Period of time between first and fellow eye surgery (months)																				
N	7353		9378		10009		10784		12922		14170		15562		18046		19215		18266	
Mean	24.4		36.1		39.2		40.9		42.3		47.5		46.6		45.4		41.5		22.8	
SD	31.5		43.6		49.3		52.4		58.4		59.6		62.4		63.3		63.7		35.7	
Median	12.1		15.1		15.4		14.7		14.3		15.0		14.5		13.4		12.0		10.4	
Patients who had cataract surgery before	7938		9441		10088		10896		13045		14267		15665		18151		19816		20866	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Eyes with intra-operative complications during surgery in the first eye	346	4.4	324	3.4	302	3.0	281	2.6	341	2.6	386	2.7	396	2.5	464	2.6	576	2.9	594	2.8

1.2.4 Past Ocular Surgery of the Operated Eye

Table 1.2.4-1: Past Ocular Surgery of the Operated Eye, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of patients	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
No. of eyes with past ocular surgery record (N)	23109		26711		28349		30687		34625		37935		42425		48563		51831		53454	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Patients with no past ocular surgery	22387	96.9	25870	96.9	27400	96.7	29770	97.0	33721	97.4	36938	97.4	41080	96.8	47024	96.8	50163	96.8	51670	96.7
Vitreoretinal surgery	267	1.2	352	1.3	325	1.1	326	1.1	350	1.0	329	0.9	581	1.4	606	1.2	627	1.2	732	1.4
Pterygium excision	164	0.7	212	0.8	207	0.7	208	0.7	268	0.8	386	1.0	401	0.9	514	1.1	633	1.2	666	1.2
Filtering surgery	69	0.3	65	0.2	80	0.3	75	0.2	66	0.2	60	0.2	99	0.2	122	0.3	90	0.2	65	0.1
Penetrating keratoplasty	18	0.1	21	0.1	11	0	11	0.0	18	0.1	8	0.0	21	0.0	25	0.1	20	0.0	18	0.0
Others	216	0.9	203	0.8	332	1.2	305	1.0	220	0.6	236	0.6	263	0.6	289	0.6	311	0.6	326	0.6

Number or percentage may be more than total or 100% as patients might have more than one past ocular surgery

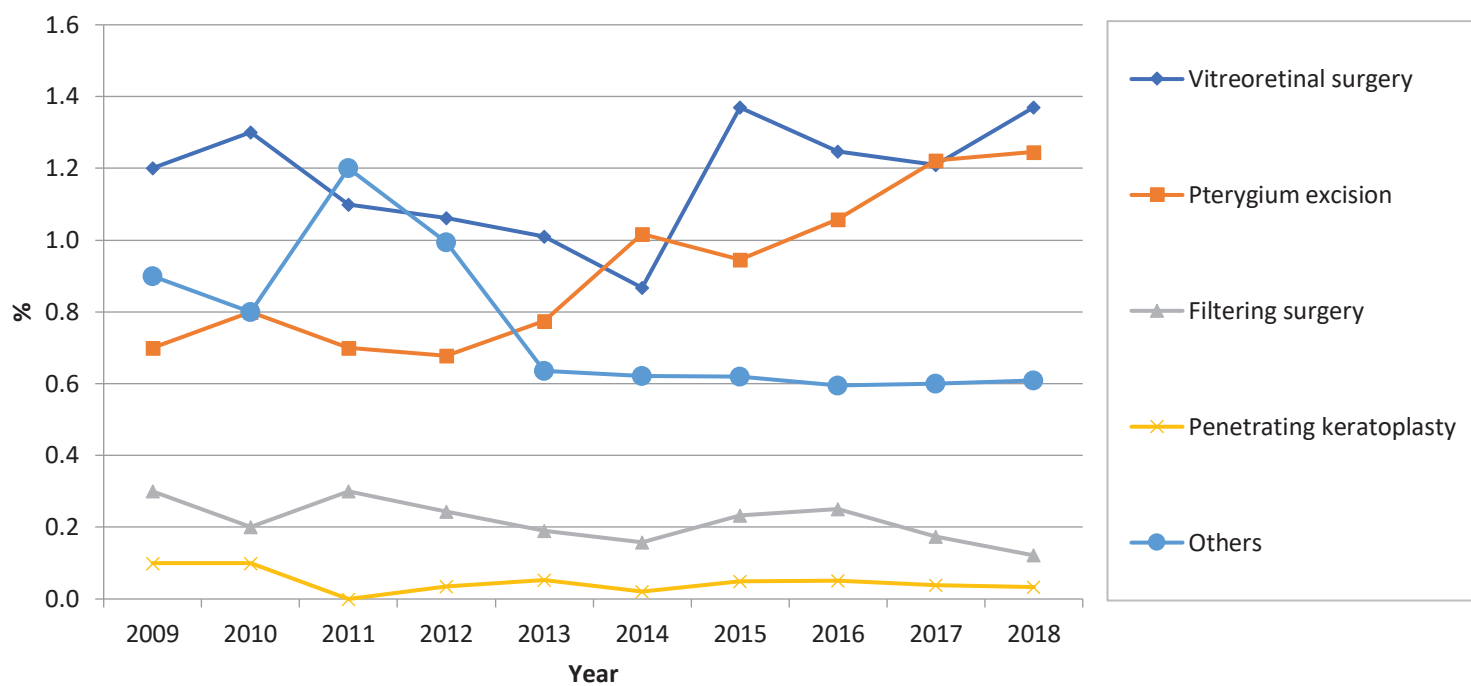


Figure 1.2.4-1: Percentage Distribution of Past Ocular Surgery of the Operated Eye, CSR 2009-2018

1.2.5 Pre-existing Ocular Co-morbidity

Table 1.2.5-1: Distribution of Pre-existing Ocular Co-Morbidity, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Patients with any ocular co-morbidity	9442	38.6	11977	42	12756	41.7	13024	40.1	15088	40.6	16142	39.8	17521	39.3	18490	36.5	18879	34.8	19148	34.4
Patients with specific ocular co-morbidity																				
Anterior segment																				
1. Glaucoma	1655	6.8	1799	6.3	1976	6.5	2095	6.5	2349	6.3	2385	5.9	2861	6.4	3291	6.5	3411	6.3	3635	6.5
2. Pterygium involving the cornea	345	1.4	387	1.4	405	1.3	405	1.3	477	1.3	540	1.3	534	1.2	565	1.1	637	1.2	715	1.3
3. Pseudoexfoliation	318	1.3	289	1	312	1	365	1.1	381	1.0	445	1.1	492	1.1	527	1.0	483	0.9	561	1.0
4. Corneal opacity	231	0.9	251	0.9	299	1	311	1	338	0.9	447	1.1	460	1.0	520	1.0	519	1.0	584	1.0
5. Chronic uveitis	80	0.3	89	0.3	98	0.3	70	0.2	96	0.3	100	0.2	125	0.3	128	0.3	170	0.3	158	0.3
Len related complication																				
1. Phacomorphic	83	0.3	120	0.4	114	0.4	138	0.42	90	0.2	110	0.3	156	0.4	181	0.4	199	0.4	182	0.3
3. Subluxated/Disclosed	83	0.3	95	0.3	119	0.4	120	0.37	112	0.3	119	0.3	154	0.3	185	0.4	166	0.3	135	0.2
2. Phacolytic	47	0.2	59	0.2	69	0.2	41	0.13	56	0.2	63	0.2	88	0.2	93	0.2	80	0.1	80	0.1
Posterior segment																				
1. Diabetic Retinopathy: Non-Proliferative	916	3.7	996	3.5	1783	5.8	1915	5.9	2214	6.0	2471	6.1	2603	5.8	3200	6.3	3659	6.7	3851	6.9
2. Cannot be assessed	3139	12.8	4457	15.6	5053	16.5	4914	15.13	5881	15.8	6238	15.4	5960	13.4	4962	9.8	4085	7.5	3331	6.0
3. Diabetic Retinopathy: Proliferative	1307	5.3	1973	6.9	1031	3.4	933	2.87	1021	2.7	1134	2.8	1338	3.0	1539	3.0	1633	3.0	1878	3.4
4. ARMD	387	1.6	462	1.6	494	1.6	521	1.6	609	1.6	695	1.7	875	2.0	997	2.0	1103	2.0	1098	2.0
5. Diabetic Retinopathy: CSME*	278	1.1	346	1.2	384	1.3	368	1.13	473	1.3	544	1.3	624	1.4	728	1.4	807	1.5	865	1.6
6. Retinal detachment	294	1.2	308	1.1	432	1.4	341	1.05	295	0.8	270	0.7	487	1.1	545	1.1	498	0.9	654	1.2
7. Other macular disease (includes hole or scar)	188	0.8	277	1	251	0.8	308	0.95	309	0.8	375	0.9	431	1.0	515	1.0	658	1.2	622	1.1
8. Diabetic Retinopathy: Vitreous haemorrhage	230	0.9	250	0.9	296	1	258	0.79	237	0.6	275	0.7	347	0.8	331	0.7	342	0.6	348	0.6
9. Optic nerve disease, any type	118	0.5	149	0.5	123	0.4	182	0.56	191	0.5	206	0.5	238	0.5	227	0.4	224	0.4	233	0.4
Miscellaneous																				

1. Amblyopia	62	0.3	75	0.3	99	0.3	98	0.3	97	0.3	93	0.2	106	0.2	92	0.2	143	0.3	135	0.2
2. Significant previous eye trauma	39	0.2	51	0.2	45	0.2	49	0.15	48	0.1	61	0.2	84	0.2	73	0.1	73	0.1	69	0.1
3. Pre-existing non glaucoma field defect	6	0	3	0	4	0	6	0.02	4	0.0	8	0.0	15	0.0	3	0.0	8	0.0	8	0.0
4. Others	1053	4.3	1321	4.6	1505	4.9	1729	5.32	2119	5.7	2065	5.1	2444	5.5	2890	5.7	3177	5.9	3424	6.1

*CSME=Clinically Significant Macular Oedema

Number or percentage may be more than total or 100% as patients might have more than one ocular co-morbidity

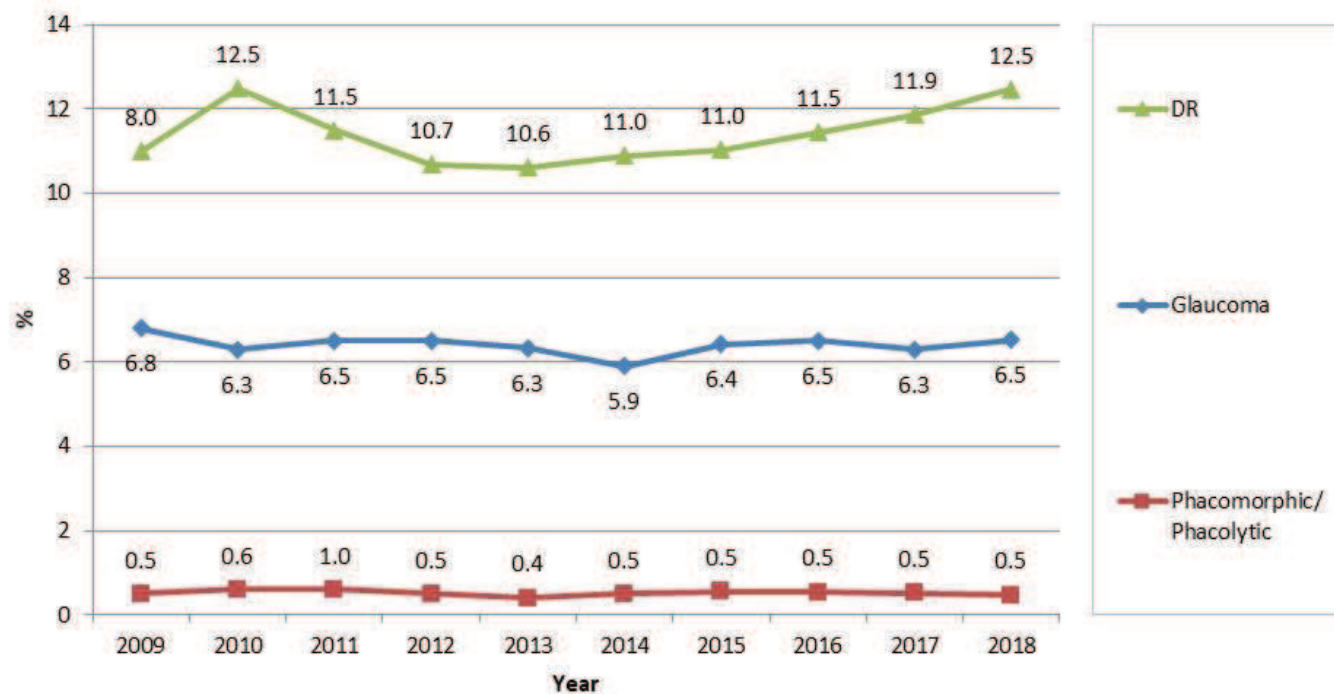


Figure 1.2.5-1: Percentage Distribution of Eyes with Diabetic Retinopathy, Glaucoma and Lens-induced Glaucoma, CSR 2009-2018

1.2.6 Pre-operative Vision

Table 1.2.6-1: Distribution of Pre-Operative Vision, CSR 2009-2018

Year		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of patients (N)		24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Patients with unaided VA		23796	97.4	27977	98.1	30018	98.1	31833	98.0	35988	96.9	39019	96.3	43260	97.1	49635	98.0	53643	98.9	55296	99.3
Patients with pin hole VA		11595	47.4	14126	49.6	15134	49.4	16120	49.6	16737	45.1	16444	40.6	19271	43.3	37356	73.8	48999	90.3	54338	97.6
Patients with unaided VA and no ocular comorbid		14581	59.7	16221	56.9	17486	57.1	19020	58.6	21223	57.1	23274	57.4	26159	58.7	31465	62.2	34938	64.4	36254	65.1
Patients with no refraction		19288	78.9	20611	72.3	22679	74.1	25158	77.5	28732	77.3	31008	76.5	18375	41.3	33429	66.0	33328	61.4	8681	15.6
6/12 and better	Unaided	788	3.3	1016	3.6	1133	3.8	1397	4.4	1865	5.2	1855	4.8	2115	4.9	2671	5.4	2992	5.6	3266	5.9
	Pin Hole	2037	17.6	2408	17.0	2843	18.8	3099	19.2	3756	22.4	3706	22.5	4104	21.3	6506	17.4	8313	17.0	9126	16.8
	Unaided and no ocular comorbid	567	3.9	705	4.3	806	4.6	983	5.2	1309	6.2	1309	5.6	1438	5.5	1846	5.9	2098	6.0	2222	6.1
<6/12 - 6/18	Unaided	1392	5.8	1750	6.3	2087	7.0	2311	7.3	2701	7.5	2958	7.6	3483	8.1	4271	8.6	4957	9.2	5309	9.6
	Pin Hole	2220	19.1	2688	19.0	3128	20.7	3221	20.0	3525	21.1	3506	21.3	4000	20.8	6465	17.3	7966	16.3	8645	15.9
	Unaided and no ocular comorbid	945	6.5	1205	7.4	1456	8.3	1650	8.7	1878	8.8	2100	9.0	2451	9.4	2997	9.5	3505	10.0	3743	10.3
<6/18 - 6/60	Unaided	7869	33.1	9238	33.0	10255	34.2	11296	35.5	12787	35.5	14404	36.9	15805	36.5	18372	37.0	20294	37.8	21077	38.1
	Pin Hole	4454	38.4	5116	36.2	5636	37.2	5989	37.2	6228	37.2	6320	38.4	7056	36.6	11511	30.8	14703	30.0	15614	28.7
	Unaided and no ocular comorbid	5421	37.2	6101	37.6	6982	39.9	7711	40.5	8588	40.5	9780	42.0	10847	41.5	12648	40.2	14115	40.4	14547	40.1
<6/60 - 3/60	Unaided	1588	6.7	2085	7.5	2227	7.4	2316	7.3	2686	7.5	2954	7.6	3285	7.6	3794	7.6	3960	7.4	4236	7.7
	Pin Hole	438	3.8	580	4.1	636	4.2	646	4.0	678	4.1	673	4.1	846	4.4	1687	4.5	2124	4.3	2460	4.5
	Unaided and no ocular comorbid	1064	7.3	1308	8.1	1426	8.2	1489	7.8	1699	8.0	1848	7.9	2050	7.8	2504	8.0	2679	7.7	2804	7.7
<3/60	Unaided	12159	51.1	13888	49.6	14316	47.7	14513	45.6	15949	44.3	16848	43.2	18572	42.9	20527	41.4	21440	40.0	21408	38.7
	Pin Hole	2446	21.1	3334	23.6	2891	19.1	3165	19.6	2550	15.2	2239	13.6	3265	16.9	11187	29.9	15893	32.4	18493	34.0
	Unaided and no ocular comorbid	6584	45.2	6902	42.5	6816	39.0	7187	37.8	7749	36.5	8237	35.4	9373	35.8	11470	36.5	12541	35.9	12938	35.7
Unaided VA for patient with no refraction																					
n		19288		20611		22679		25158		28732		31008		31079		33429		33328		8681	
6/12 and better		553	2.9	651	3.2	702	3.1	887	3.5	1210	4.2	1228	4.0	1335	4.3	1519	4.5	1630	4.9	350	4.0

<6/12 - 6/18	992	5.1	1062	5.2	1217	5.4	1431	5.7	1704	5.9	1893	6.1	2006	6.5	2376	7.1	2681	8.0	599	6.9
<6/18 - 6/60	5654	29.3	5795	28.1	6624	29.2	7762	30.9	8755	30.5	9875	31.8	9619	31.0	10817	32.4	11462	34.4	2731	31.5
<6/60 - 3/60	1182	6.1	1382	6.7	1509	6.7	1755	7.0	1943	6.8	2056	6.6	2125	6.8	2372	7.1	2275	6.8	667	7.7
<3/60	10412	54.0	11302	54.8	12134	53.5	12777	50.8	14091	49.0	14525	46.8	14846	47.8	15487	46.3	14799	44.4	3997	46.0

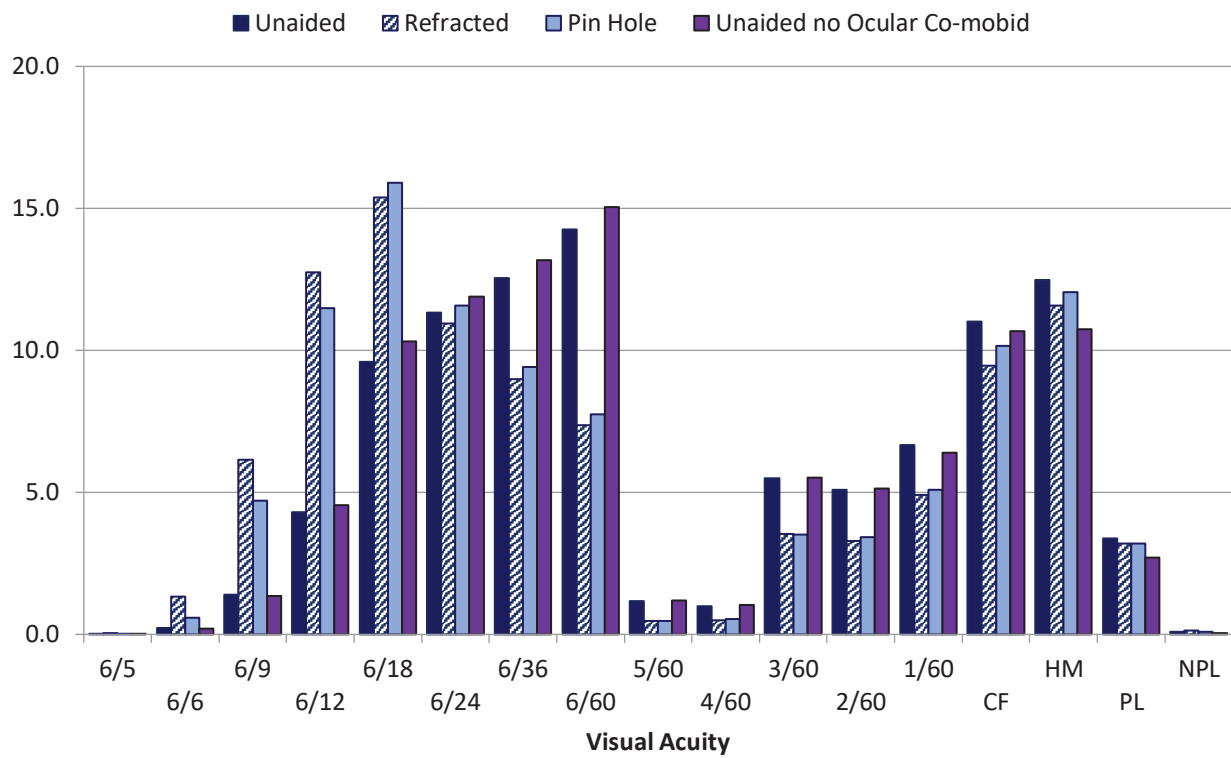


Figure 1.2.6-1: Distribution of Pre-operative Vision, CSR 2018

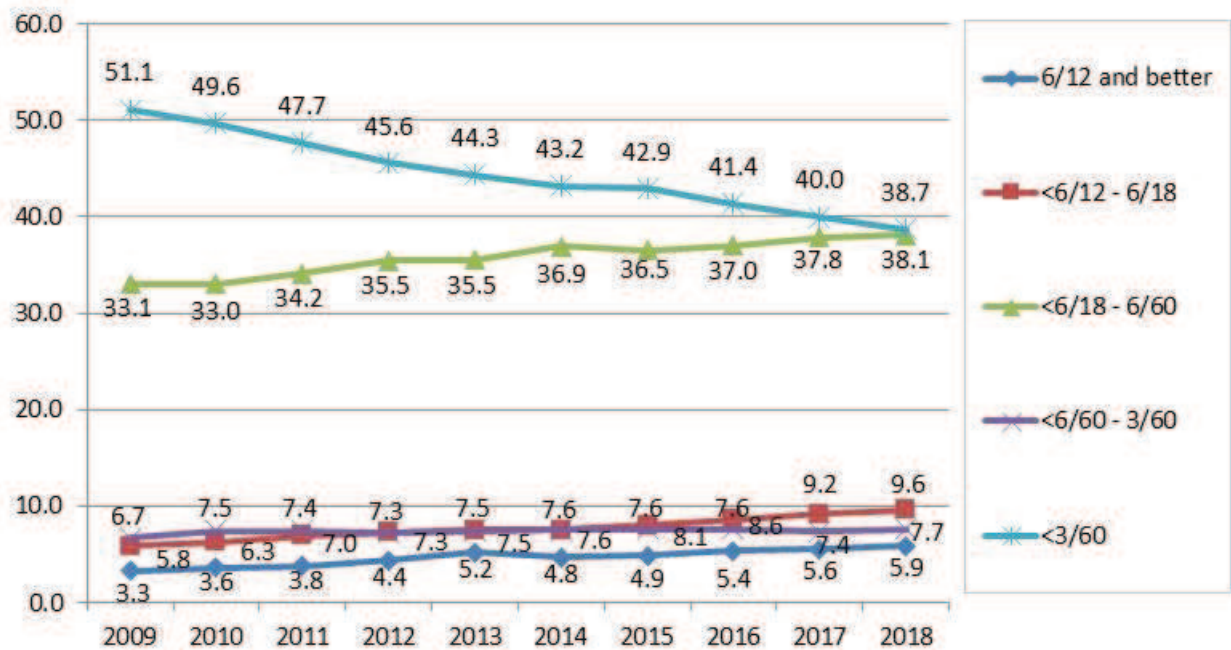


Figure 1.2.6-2: Distribution of Pre-operative Vision (Unaided), CSR 2009-2018

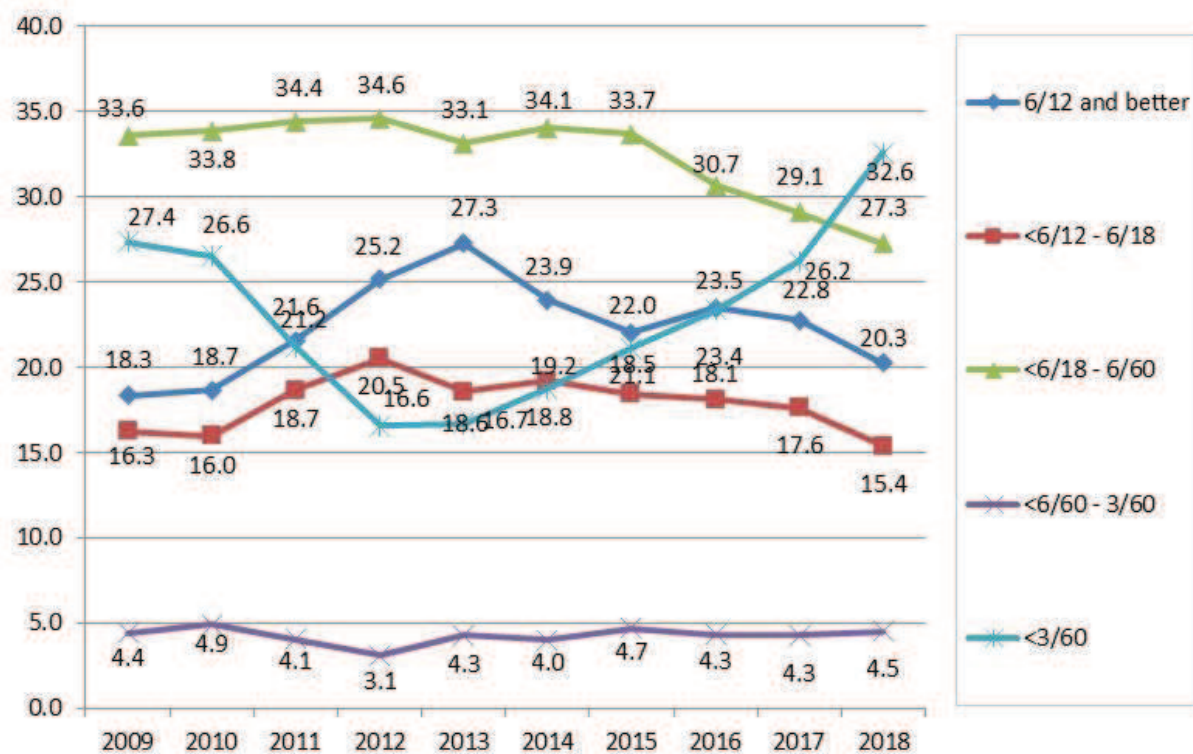


Figure 1.2.6-3: Distribution of Pre-operative Vision (Refracted), CSR 2009-2018

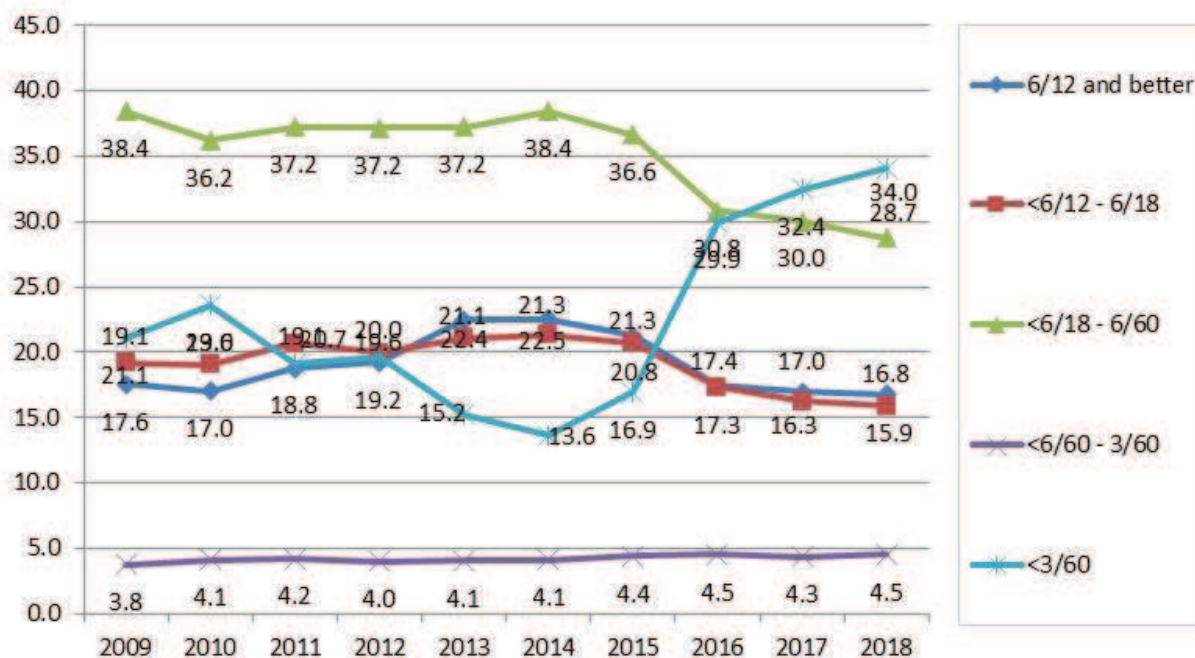


Figure 1.2.6-4: Distribution of Pre-operative Vision (Pin Hole), CSR 2009-2018

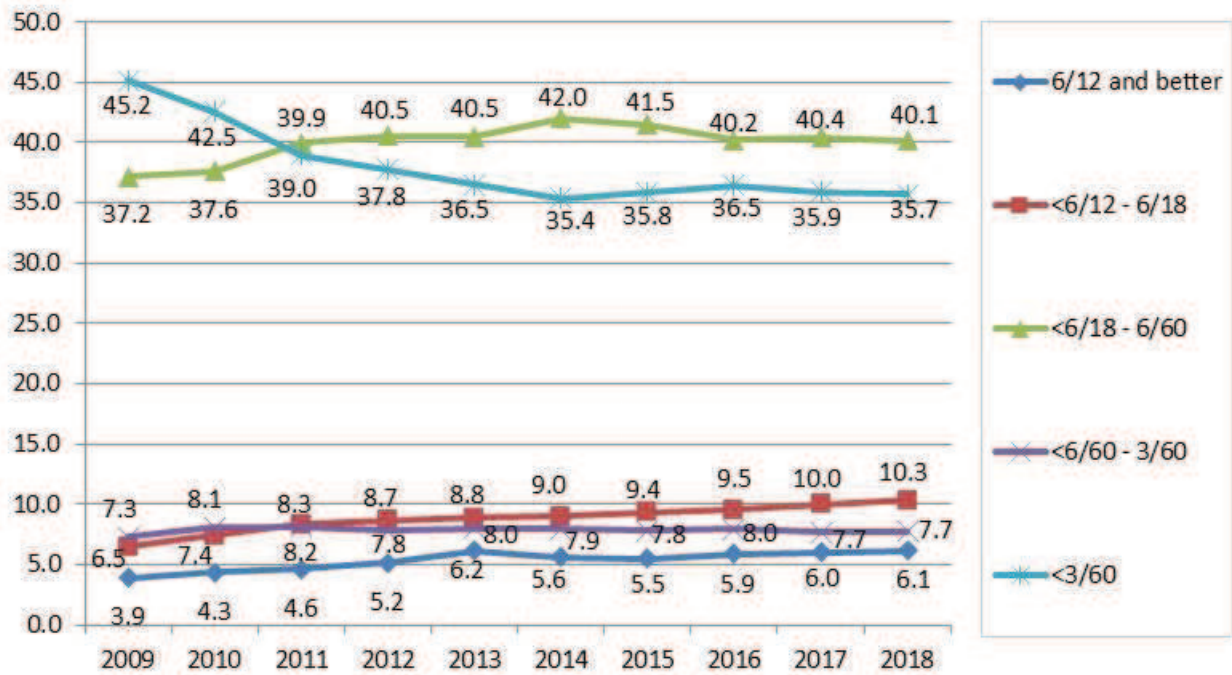


Figure 1.2.6-5: Distribution of Pre-operative Vision (Unaided) and no Ocular Co-morbidity, CSR 2009-2018

1.2.7 Target Refractive Power

Table 1.2.7-1: Distribution of Target Refractive Power, CSR 2009-2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operated eye (N)	20279	24524	25885	26059	28685	32256	36703	43840	48153	50276
Mean	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5
SD	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Median	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5
Minimum	-9.9	-9.1	-9.1	-8	-8.5	-8.1	-9.9	-10.0	-10.0	-9.5
Maximum	5.9	6	4.8	9	9	6.0	6.1	6.2	8.6	6.2

Table 1.2.7-2: Distribution of Target Refractive Power (excluding age 0-5 years), CSR 2009-2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operated eye (N)	20236	24490	25848	26017	28678	32236	36663	43798	48083	50204
Mean	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5
SD	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Median	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5
Minimum	-9.9	-9.1	-9.1	-8	-8.5	-8.1	-9.9	-10.0	-10.0	-9.5
Maximum	4.9	6	4.8	9	9	2.8	6.1	2.3	8.6	4.0

Table 1.2.7-3: Distribution of Target Refractive Power, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Target refractive power (Dioptres)	Operated eye N=20279		Operated eye N=24524		Operated eye N=25885		Operated eye N=26059		Operated eye N=28685		Operated eye N=32256		Operated eye N=36703		Operated eye N=43840		Operated eye N=48153		Operated eye N=50276	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
-10-<(-9.5)	2	0	0	0	0	0	0	0	0	0	0	0	1	0.0	2	0.0	1	0.0	0	0.0
-9.5-<(-9)	1	0	2	0	1	0	0	0	0	0	0	0	1	0.0	2	0.0	2	0.0	2	0.0
-9-<(-8.5)	0	0	0	0	0	0	0	0	1	0	0	0	1	0.0	2	0.0	0	0.0	1	0.0
-8.5-<(-8)	0	0	0	0	0	0	0	0	1	0	1	0	2	0.0	1	0.0	1	0.0	1	0.0
-8-<(-7.5)	1	0	1	0	0	0	1	0	0	0	1	0	1	0.0	0	0.0	1	0.0	0	0.0
-7.5-<(-7)	1	0	1	0	0	0	2	0	0	0	0	0	1	0.0	0	0.0	1	0.0	3	0.0
-7-<(-6.5)	0	0	1	0	1	0	1	0	1	0	1	0	0	0.0	1	0.0	0	0.0	0	0.0
-6.5-<(-5)	7	0	4	0	10	0	10	0	9	0	10	0	4	0.0	7	0.0	11	0.0	6	0.0
-5-<(-4.5)	7	0	3	0	3	0	5	0	5	0	1	0	4	0.0	4	0.0	9	0.0	5	0.0
-4.5-<(-4)	5	0	10	0	3	0	5	0	3	0	4	0	3	0.0	6	0.0	7	0.0	3	0.0
-4-<(-3.5)	11	0.1	5	0	11	0	5	0	1	0	5	0	5	0.0	3	0.0	3	0.0	5	0.0
-3.5-<(-3)	11	0.1	15	0.1	12	0.1	6	0	8	0	5	0	10	0.0	5	0.0	8	0.0	6	0.0
-3-<(-2.5)	18	0.1	29	0.1	15	0.1	15	0.1	15	0.1	9	0.0	13	0.0	20	0.1	17	0.0	23	0.1
-2.5-<(-2)	29	0.1	33	0.1	26	0.1	38	0.2	35	0.1	27	0.1	31	0.1	33	0.1	48	0.1	55	0.1
-2-<(-1.5)	58	0.3	46	0.2	54	0.2	67	0.3	55	0.2	52	0.2	61	0.2	65	0.2	126	0.3	117	0.2
-1.5-<(-1)	260	1.3	292	1.2	201	0.8	226	0.9	174	0.6	209	0.7	236	0.6	237	0.5	419	0.9	418	0.8
-1-<(-0.5)	7972	39.3	7590	31	7507	29	7190	27.6	6241	21.8	6840	21.2	8908	24.3	12314	28.1	15812	32.8	17545	34.9
-0.5-<0	10604	52.3	15218	62.1	16913	65.3	17421	66.9	21135	73.7	24210	75.1	26887	73.3	30789	70.2	31292	65.0	31674	63.0
0-<0.5	977	4.8	920	3.8	849	3.3	629	2.4	697	2.4	790	2.5	461	1.3	293	0.7	259	0.5	298	0.6
0.5-<1	182	0.9	237	1	234	0.9	216	0.8	187	0.7	73	0.2	35	0.1	28	0.1	39	0.1	32	0.1
1-<1.5	17	0.1	23	0.1	20	0.1	32	0.1	8	0	4	0	13	0.0	14	0.0	13	0.0	12	0.0
1.5-<2	22	0.1	19	0.1	9	0	52	0.2	28	0.1	5	0.0	8	0.0	3	0.0	16	0.0	11	0.0
2-<2.5	85	0.4	69	0.3	12	0.1	123	0.5	69	0.2	5	0.0	3	0.0	3	0.0	32	0.1	14	0.0
2.5-<3	4	0	3	0	2	0	10	0	11	0	2	0	2	0.0	0	0.0	10	0.0	15	0.0
3-<3.5	2	0	0	0	1	0	1	0	0	0	0	0	1	0.0	0	0.0	10	0.0	7	0.0
3.5-<4	0	0	0	0	0	0	0	0	0	0	1	0	4	0.0	3	0.0	4	0.0	10	0.0

4-<4.5	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0.0	2	0.0	3	0.0	4	0.0
4.5-<5	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0.0	1	0.0	1	0.0	1	0.0
5-<5.5	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.0	0	0.0	1	0.0	2	0.0
5.5-<6	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	1	0.0	1	0.0	3	0.0
6-<6.5	0	0	1	0	0	0	0	0	0	0	0	1	0	2	0.0	1	0.0	3	0.0	3	0.0
6.5-<7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	1	0.0	0	0.0
7-<7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	1	0.0	0	0.0
7.5-<8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0
8-<8.5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.0	0	0.0	1	0.0	0	0.0
9-<9.5	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0

Values outside the +10D and -10D were excluded from analysis as they would skew the mean.

Table 1.2.7-4: Distribution of Target Refractive Power (excluding age 0-5 years), CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Target refractive power (Dioptres)	Operated eye N=20236		Operated eye N=24490		Operated eye N=25848		Operated eye N=26017		Operated eye N=28678		Operated eye N=32236		Operated eye N=36663		Operated eye N=43798		Operated eye N=		Operated eye N=50204	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
-10-<(-9.5)	2	0.0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	1	0.0	0	0.0
-9.5-<(-9)	1	0.0	2	0	1	0	0	0	0	0	0	0	1	0	2	0	2	0.0	2	0.0
-9-<(-8.5)	0	0.0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0.0	1	0.0
-8.5-<(-8)	0	0.0	0	0	0	0	0	0	1	0	1	0	2	0	1	0	1	0.0	1	0.0
-8-<(-7.5)	1	0.0	1	0	0	0.0	1	0.0	0	0	1	0	1	0	0	0	1	0.0	0	0.0
-7.5-<(-7)	1	0.0	1	0	0	0.0	2	0.0	0	0	0	0	1	0	0	0	1	0.0	3	0.0
-7-<(-6.5)	0	0.0	1	0.0	1	0.0	1	0.0	1	0	1	0	0	0	1	0	0	0.0	0	0.0
-6.5-<(-5)	6	0.0	4	0.0	10	0.0	10	0.0	9	0	10	0	4	0	7	0	11	0.0	6	0.0
-5-<(-4.5)	7	0.0	3	0.0	3	0.0	5	0.0	5	0	1	0	4	0	4	0	9	0.0	5	0.0
-4.5-<(-4)	5	0.0	10	0.0	3	0.0	5	0.0	3	0	4	0	3	0	5	0	7	0.0	3	0.0

-4-<(-3.5)	9	0.0	5	0.0	11	0.0	5	0.0	1	0	5	0	5	0	2	0	3	0.0	5	0.0
-3.5-<(-3)	10	0.1	15	0.1	12	0.1	6	0.0	8	0	5	0	10	0	5	0	8	0.0	5	0.0
-3-<(-2.5)	18	0.1	29	0.1	15	0.1	15	0.1	15	0.1	9	0.0	13	0.0	19	0.0	17	0.0	23	0.1
-2.5-<(-2)	29	0.1	33	0.1	26	0.1	37	0.1	33	0.1	27	0.1	31	0.1	33	0.1	47	0.1	55	0.1
-2-<(-1.5)	58	0.3	46	0.2	53	0.2	67	0.3	55	0.2	52	0.2	59	0.2	65	0.2	126	0.3	117	0.2
-1.5-<(-1)	259	1.3	291	1.2	199	0.8	226	0.9	174	0.6	209	0.7	236	0.6	236	0.5	417	0.9	418	0.8
-1-<(-0.5)	7968	39.4	7587	31.0	7503	29.0	7186	27.6	6240	21.8	6839	21.2	8905	24.3	12310	28.1	15811	32.9	17539	34.9
-0.5-<0	10587	52.3	15210	62.1	16903	65.4	17406	66.9	21132	73.7	24202	75.1	26878	73.3	30781	70.3	31284	65.1	31669	63.1
0-<0.5	970	4.8	910	3.7	836	3.2	623	2.4	696	2.4	788	2.4	457	1.3	286	0.7	250	0.5	296	0.6
0.5-<1	177	0.9	235	1.0	232	0.9	215	0.8	187	0.7	69	0.2	34	0.1	27	0.1	34	0.1	25	0.1
1-<1.5	17	0.1	19	0.1	16	0.1	25	0.1	8	0	4	0	9	0	7	0	8	0.0	7	0.0
1.5-<2	20	0.1	16	0.1	8	0.0	49	0.2	28	0.1	3	0.0	3	0.0	1	0.0	10	0.0	4	0.0
2-<2.5	85	0.4	68	0.3	12	0.1	121	0.5	69	0.2	5	0.0	2	0.0	2	0.0	24	0.1	6	0.0
2.5-<3	4	0.0	3	0.0	2	0.0	8	0.0	11	0	1	0	1	0	0	0	8	0.0	12	0.0
3-<3.5	1	0.0	0	0.0	1	0.0	1	0.0	0	0	0	0	0	0	0	0	1	0.0	1	0.0
3.5-<4	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0	1	0	0	0	0	0.0	1	0.0
4-<4.5	0	0.0	0	0.0	0	0.0	1	0.0	0	0	0	0	0	0	0	0	0	0.0	0	0.0
4.5-<5	1	0.0	1	0.0	1	0.0	0	0.0	0	0	0	0	0	0	0	0	0	0.0	0	0.0
5-<5.5	0	0.0	1	0.0	0	0.0	0	0.0	0	0	0	0	0	0	0	0	0	0.0	0	0.0
5.5-<6	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0	0	0	0	0	0	0.0	0	0.0
6-<6.5	0	0.0	1	0.0	0	0.0	0	0.0	0	0	0	0	1	0	0	0	0	0.0	0	0.0
6.5-<7	0	0.0	0	0.0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0
7-<7.5	0	0.0	0	0.0	0	0.0	0	0	0	0	0	0	0	0	0	0	1	0.0	0	0.0
7.5-<8	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0
8-<8.5	0	0.0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0
8.5-<9	0	0.0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	0	0.0
9-<9.5	0	0.0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0.0	0	0.0
9.5-10	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0

Values outside the +10D and -10D were excluded from analysis as they would skew the mean..

1.3 Cataract Surgical Practice

1.3.1 Number of Cataract Surgery by SDP

Table 1.3.1-1: Range (in Number) of Cataract Surgery Registered by SDP per year, Census versus CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of SDP	Census	CSR	Census	CSR	Census	CSR	Census	CSR	Census	CSR	Census	CSR	Census	CSR	Census	CSR	Census	CSR	Census	CSR
	36	36	36	36	36	36	36	36	41	41	43	43	50	50	54	54	54	54	51	51
<100	1	1	1	1	1	1	1	1	4	4	2	2	7	8	8	8	3	3	1	1
100-500	12	15	10	13	9	9	8	8	7	9	8	11	8	9	11	11	15	15	11	12
501-1000	14	12	14	12	16	16	15	16	14	13	15	14	16	16	12	13	14	13	16	15
>1000	9	8	11	10	10	10	12	11	16	15	18	16	19	17	23	22	22	23	23	23

Table 1.3.1-2: Number of Cataract Surgery by Month, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
Month	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
January	1668	6.8	2347	8.2	2241	7.3	2460	7.6	2844	7.7	3161	7.8	3528	7.9	3972	7.9	3889	7.2	5038	9.1
February	1884	7.7	1985	7.0	1815	5.9	2762	8.5	2448	6.6	3258	8.0	2797	6.3	3732	7.4	4138	7.6	4242	7.6
March	2122	8.7	2850	10.0	2676	8.7	3055	9.4	2997	8.1	3924	9.7	4057	9.1	4750	9.4	4848	8.9	5192	9.3
April	2295	9.4	2714	9.5	2634	8.6	2612	8.0	3378	9.1	3855	9.5	4186	9.4	4495	8.9	4452	8.2	5296	9.5
May	2036	8.3	2559	9.0	2576	8.4	3004	9.3	3233	8.7	3153	7.8	3561	8.0	4390	8.7	4464	8.2	4010	7.2
June	2086	8.5	2591	9.1	2686	8.8	2652	8.2	3119	8.4	3501	8.6	3863	8.7	4286	8.5	3377	6.2	3306	5.9
July	2322	9.5	2670	9.4	2845	9.3	3121	9.6	3557	9.6	3122	7.7	3080	6.9	3221	6.4	4888	9.0	5679	10.2
August	1975	8.1	2401	8.4	2570	8.4	2237	6.9	2591	7.0	3403	8.4	3803	8.5	4939	9.8	5226	9.6	4758	8.5
September	1572	6.4	1659	5.8	2468	8.1	2454	7.6	3372	9.1	3433	8.5	3702	8.3	3913	7.7	4182	7.7	4282	7.7
October	2266	9.3	2447	8.6	2794	9.1	3064	9.4	3421	9.2	3163	7.8	4131	9.3	4471	8.8	5212	9.6	5416	9.7
November	2006	8.2	2102	7.4	2632	8.6	2625	8.1	3162	8.5	3477	8.6	4107	9.2	5009	9.9	5877	10.8	4520	8.1
December	2206	9.0	2181	7.6	2674	8.7	2427	7.5	3028	8.2	3082	7.6	3719	8.4	3447	6.8	3689	6.8	3948	7.1

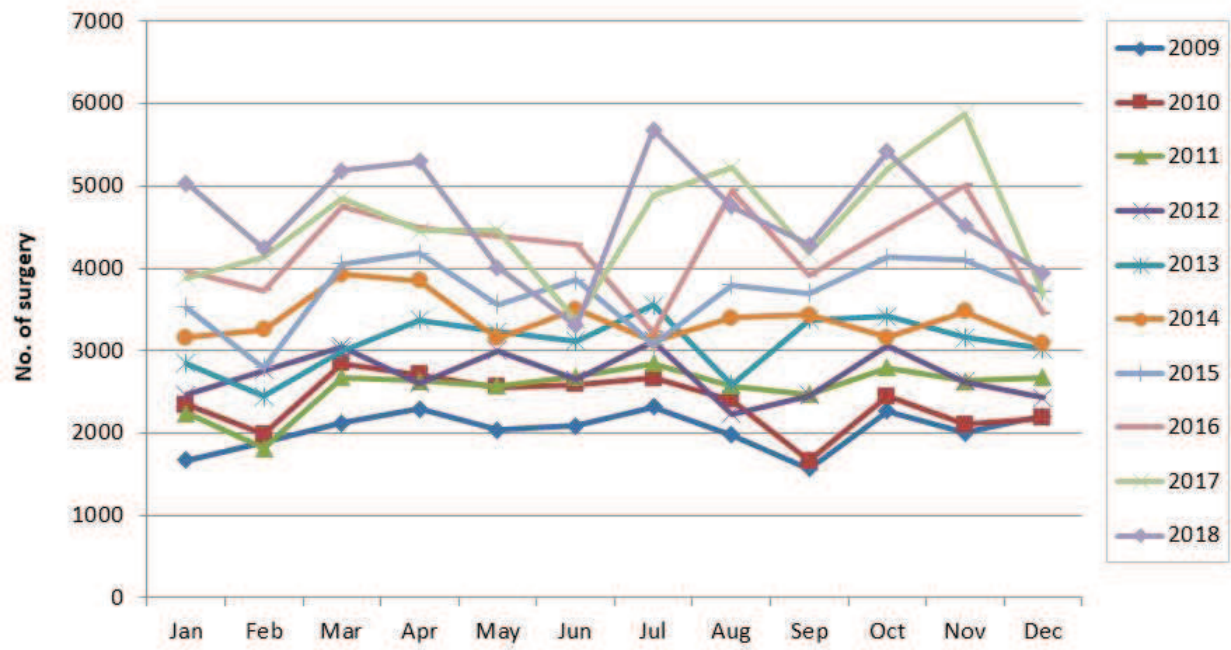


Figure 1.3.1-1: Number of Cataract Surgeries by Month, CSR 2009-2018

1.3.2 Number of Cataract Surgery Registered to CSR by State

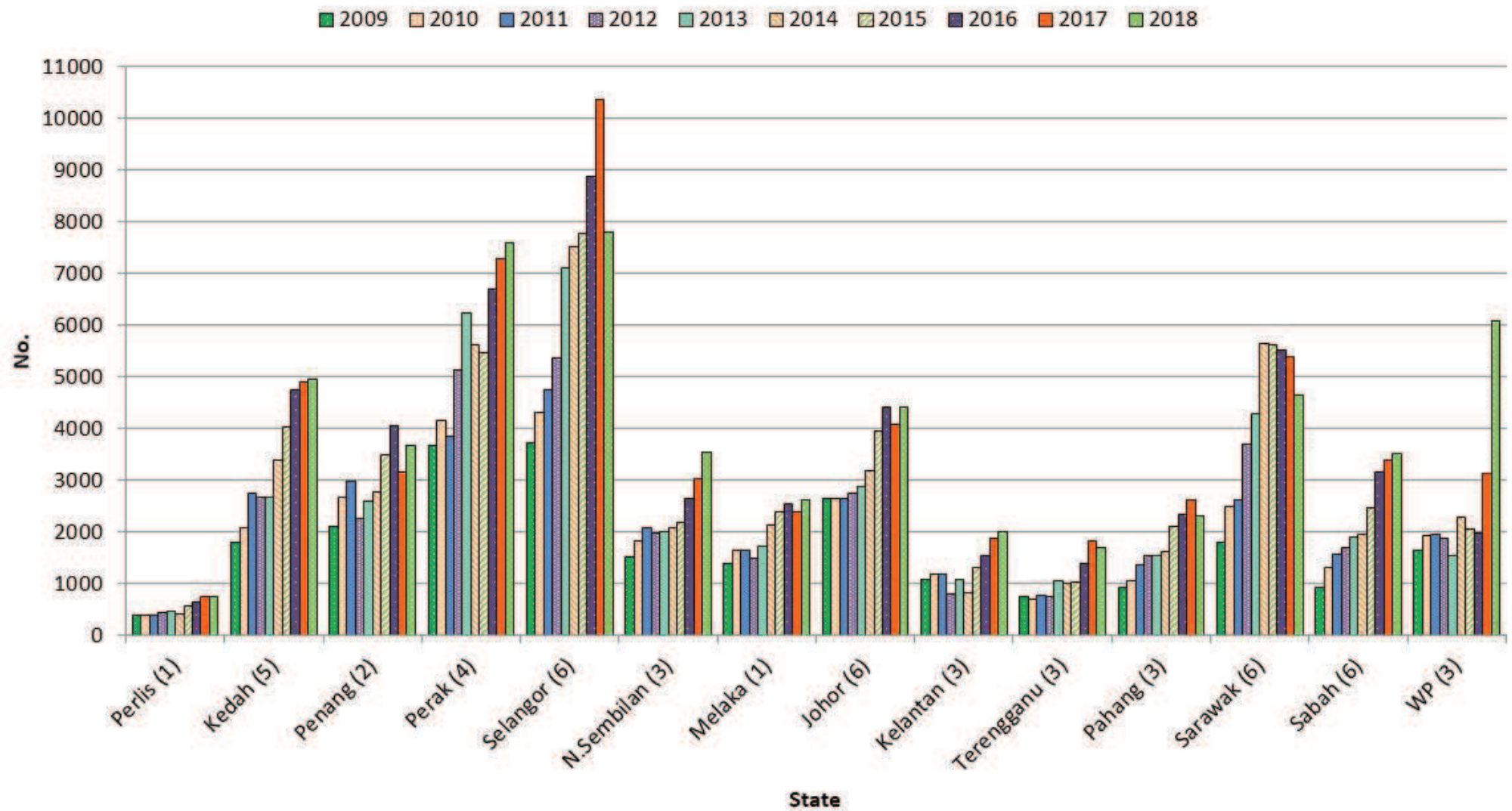


Figure 1.3.2-1: Number of Cataract Surgeries by State, CSR 2009-2018

1.3.3 Surgeon Status

Table 1.3.3-1: Surgeon Status, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Specialist	19400	79.4	24216	84.9	25590	83.6	27684	85.3	32861	88.5	36197	89.3	39624	89.0	44995	88.9	47641	87.8	49791	89.4
Gazetting Specialist	2053	8.4	1405	4.9	2487	8.1	2411	7.4	2014	5.4	2034	5.0	2251	5.1	2282	4.5	3107	5.7	2770	5.0
Medical Officer	2750	11.3	2871	10.1	2478	8.1	2354	7.3	2244	6.0	2249	5.6	2558	5.7	3090	6.1	3340	6.2	2989	5.4
Missing/NA	235	1.0	14	0.1	56	0.2	24	0.1	31	0.1	52	0.1	101	0.2	258	0.5	154	0.3	137	0.3

Table 1.3.3-2: Surgeon Status for Phaco, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of patients (N)	17717		21810		23872		26345		31625		35429		39131		45346		49543		51209	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Specialist	15206	85.8	19797	90.8	20963	87.8	23291	88.4	28774	91.0	32417	91.5	35766	91.4	41212	90.9	44302	89.4	46389	90.6
Gazetting Specialist	1422	8.0	929	4.3	1845	7.7	1850	7.0	1694	5.4	1776	5.0	1899	4.9	2021	4.5	2807	5.7	2512	4.9
Medical Officer	923	5.2	1078	4.9	1050	4.4	1182	4.5	1132	3.6	1189	3.4	1372	3.5	1862	4.1	2283	4.6	2171	4.2
Missing/NA	166	0.9	6	0.0	14	0.1	22	0.1	25	0.1	47	0.1	94	0.2	251	0.6	151	0.3	137	0.3

Table 1.3.3-3: Surgeon Status for ECCE, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of patients (N)	5457		5363		5291		4784		4086		3613		3677		3439		3656		3243	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Specialist	3133	57.4	3237	60.4	3406	64.4	3231	67.5	2794	68.4	2434	67.4	2333	63.5	2113	61.4	2378	65.0	2251	69.4
Gazetting Specialist	516	9.5	405	7.6	513	9.7	435	9.1	218	5.3	170	4.7	226	6.2	164	4.8	259	7.1	206	6.4
Medical Officer	1754	32.1	1718	32.0	1369	25.9	1116	23.3	1072	26.2	1007	27.9	1116	30.4	1162	33.8	1017	27.8	786	24.2
Missing/NA	54	1.0	3	0.0	3	0.1	2	0.0	2	0.1	2	0.1	2	0.1	0	0.0	2	0.1	0	0.0

Table 1.3.3-4: Specialist by SDP, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	19400	79.4	24216	85.0	25590	83.6	27684	85.3	32861	88.5	36197	89.3	39624	89.0	44995	88.9	47641	87.8	49791	89.4
Likas	-	-	-	-	-	-	-	-	-	-	-	-	15	100.0	23	100.0	33	100.0	34	100.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	100.0	398	100.0	223	100.0
Sri Manjung	318	97.2	375	96.9	417	99.3	464	99.6	820	98.6	623	99.7	666	100.0	490	71.6	737	84.9	909	100.0
Taiping	610	99.7	683	76.8	853	89.5	899	80.4	1195	93.1	1231	99.8	1317	99.8	1575	100.0	1765	100.0	1863	100.0
Tawau	296	99.3	399	99.5	574	99.8	648	100.0	503	100.0	540	100.0	603	99.3	634	93.1	296	99.0	413	100.0
KK-KKM Sarawak	-	-	-	-	-	-	-	-	76	100.0	798	96.0	1111	98.2	908	99.0	852	96.3	569	99.5
Sarikei	-	-	-	-	-	-	-	-	285	99.7	554	99.8	643	99.4	689	99.3	431	100.0	543	99.1
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	100.0	209	98.6
Sungai Buloh	361	93.3	467	99.8	450	100.0	514	100.0	579	99.8	686	99.0	770	99.5	817	99.9	727	99.5	516	98.5
Kulim	-	-	-	-	-	-	-	-	-	-	265	100.0	395	94.5	528	92.8	600	98.5	605	98.4
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	185	99.5	2	100.0	62	100.0	135	97.8	191	97.9
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	125	95.4	270	98.2	452	94.2	575	97.5
Bintulu	101	81.5	219	84.9	330	99.4	389	99.5	375	97.9	374	100.0	350	100.0	197	100.0	261	100.0	224	97.4
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	4	100.0	191	86.8	402	90.5	700	97.2
Kemaman	-	-	-	-	-	-	-	-	47	100.0	72	100.0	3	100.0	17	60.7	161	100.0	112	96.6
Pulau Pinang	1024	74.5	1516	80.8	1816	83.1	1079	81.1	1320	77.8	1639	91.5	2076	92.7	2343	90.4	1626	98.6	2091	96.6
Sungei Petani	683	99.9	546	97.8	731	90.1	740	87.6	859	92.4	932	91.2	896	89.1	1104	97.0	1090	79.3	1300	96.2
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	209	100.0	339	100.0	321	91.2	266	95.3
Serdang	567	94.8	506	97.3	610	91.6	677	95.5	957	93.5	1233	97.5	981	99.9	530	98.9	808	91.6	1685	94.5
Kuala Lumpur	871	62.0	1359	82.5	1265	78.0	1387	91.5	1090	94.8	1750	90.6	1512	94.0	1403	90.2	1388	94.8	2291	94.4
Klang	690	76.3	833	82.7	966	91.0	1317	93.3	1523	94.5	1363	93.3	1946	98.4	2164	97.2	2236	96.3	2196	94.2
Bukit Mertajam	715	96.2	782	97.3	744	92.7	879	94.7	853	93.8	967	96.9	1178	93.1	1345	97.5	1336	93.7	1412	93.6
Temerloh	382	59.7	290	64.4	651	95.6	827	95.3	837	96.7	954	91.1	845	99.3	923	91.5	850	91.7	793	93.5
KK-KKM Pahang	-	-	-	-	-	-	-	-	59	92.2	-	-	186	99.5	114	95.8	282	95.9	158	93.5
Sultanah Aminah JB	1079	81.9	1097	79.7	770	68.3	1079	90.3	1177	87.2	1362	98.6	1607	97.8	1253	79.6	744	80.8	1126	93.4
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	33	86.8	33	82.5	50	100.0	252	91.0	156	93.4
Kuala Krai	169	96.6	211	97.2	230	95.8	226	91.5	397	100.0	354	97.0	351	90.2	316	91.9	284	81.8	424	92.4

Kota Bharu	804	88.3	858	89.4	862	91.1	485	89.0	625	91.6	279	97.9	831	90.2	1021	91.7	1239	88.8	1263	92.3
Muar	388	71.6	606	98.2	405	58.5	493	74.1	699	97.5	445	61.0	922	99.4	1085	100.0	944	90.9	1002	92.3
Alor Setar	846	76.2	1376	90.1	1742	89.8	1595	86.9	1429	81.3	1839	87.3	2153	92.2	2400	91.7	2351	91.7	1420	92.1
Putrajaya	251	100.0	282	100.0	329	100.0	349	98.3	386	98.7	360	98.1	452	97.6	416	97.0	479	96.2	527	92.1
KK-KKM Static*	-	-	-	-	-	-	-	-	1564	98.8	2197	97.0	1714	94.0	2536	87.4	3187	90.9	3819	89.6
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	353	100.0	668	100.0	548	89.4
Teluk Intan	539	88.1	642	93.0	397	59.9	439	71.3	677	61.4	684	67.5	731	78.4	1256	94.6	1034	85.7	954	89.1
Sandakan	72	45.6	123	59.1	98	36.2	128	48.3	404	98.3	235	99.2	411	82.4	364	87.9	365	71.2	379	88.6
Seremban	812	66.1	1147	75.5	1262	78.6	1109	71.1	1167	76.8	1078	68.0	1213	70.3	1435	78.3	1426	73.4	1936	88.5
Ipoh	1460	68.3	1859	84.5	1479	81.0	2459	83.9	2741	90.4	2614	94.7	1978	77.7	2727	87.3	3192	92.1	3273	87.3
Sultan Ismail	183	98.9	203	78.7	283	100.0	279	100.0	353	94.4	609	100.0	827	100.0	885	100.0	669	82.2	742	87.2
Kuala Terengganu	665	89.5	612	85.7	629	81.7	700	91.5	890	87.8	712	79.1	779	78.9	1046	79.2	1174	84.3	1227	85.9
Sibu	130	33.6	345	75.8	230	45.5	675	90.6	759	84.3	859	99.2	521	89.7	763	95.9	787	98.4	620	84.5
Melaka	1098	79.2	1342	80.9	1367	83.3	1392	93.5	1550	90.2	1968	92.0	2133	89.3	2247	88.2	1992	83.2	2214	84.0
Kangar	395	99.0	395	98.8	402	99.8	445	98.0	386	82.8	365	85.7	458	79.5	567	87.0	449	60.4	625	83.1
Batu Pahat	336	55.8	290	70.6	410	74.0	262	43.1	405	93.5	467	100.0	561	100.0	666	100.0	536	82.6	700	82.5
Miri	404	100.0	576	99.8	501	76.3	513	56.9	904	98.8	888	93.6	583	64.6	742	71.0	1101	93.0	921	82.1
Kuantan	235	80.2	553	89.9	614	90.3	607	88.7	490	79.2	497	86.3	707	65.5	1004	82.0	1245	88.9	1069	82.0
Umum Sarawak	698	78.2	941	78.0	993	87.8	1375	83.0	1490	86.6	1514	73.2	1731	85.7	1631	86.8	1526	83.8	1181	81.8
Selayang	1164	82.1	1414	83.2	1523	81.9	1465	80.1	1088	81.4	730	81.2	1119	82.7	1098	85.3	932	82.0	1216	79.7
Kuala Pilah	257	88.6	310	96.3	465	96.3	424	98.8	425	86.4	461	93.5	377	83.4	516	86.0	478	74.0	481	76.5
Ampang	421	97.2	491	78.3	620	87.6	809	90.3	813	82.7	722	76.3	633	71.9	526	70.1	889	78.8	757	73.2
Queen Elizabeth KK	344	79.4	552	88.5	540	78.7	551	72.2	658	67.3	737	70.9	900	79.4	1022	73.2	1354	77.9	1313	72.9
Keningau	31	100.0	16	21.1	32	61.5	5	29.4	6	40.0	22	16.5	0	0.0	14	3.8	0	0.0	20	8.1
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	57	95.0	80	89.9	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	9	100.0	17	94.4	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	807	68.3	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93	100.0	33	100.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	94.0	90	100.0	-	-

*PPKM-HS and KK-KKM Jitra

Table 1.3.3-5: Gazetting Specialist by SDP, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	2053	8.4	1405	4.9	2487	8.1	2411	7.4	2,014	5.4	2,034	5.0	2,251	5.1	2,282	4.5	3,107	5.7	2,770	5.0
Kuala Pilah	0	0.0	0	0.0	0	0.0	0	0.0	53	10.8	30	6.1	71	15.7	66	11.0	165	25.5	138	21.9
Queen Elizabeth KK	44	10.2	42	6.7	92	13.4	152	19.9	173	17.7	202	19.4	169	14.9	279	20.0	264	15.2	365	20.3
Batu Pahat	197	32.7	75	18.2	135	24.4	329	54.1	26	6.0	0	0.0	0	0.0	0	0.0	113	17.4	148	17.5
Miri	0	0.0	0	0.0	148	22.5	383	42.5	11	1.2	58	6.1	313	34.7	261	25.0	22	1.9	153	13.6
Umum Sarawak	56	6.3	96	8.0	54	4.8	141	8.5	175	10.2	483	23.4	240	11.9	153	8.1	250	13.7	190	13.2
Sultan Ismail	2	1.1	55	21.3	0	0.0	0	0.0	21	5.6	0	0.0	0	0.0	0	0.0	145	17.8	109	12.8
Kuantan	17	5.8	1	0.2	1	0.1	0	0.0	38	6.1	12	2.1	206	19.1	97	7.9	33	2.4	132	10.1
Kuala Terengganu	9	1.2	28	3.9	93	12.1	8	1.0	50	4.9	133	14.8	130	13.2	172	13.0	76	5.5	132	9.2
Ampang	0	0.0	4	0.6	6	0.8	18	2.0	7	0.7	0	0.0	59	6.7	60	8.0	5	0.4	90	8.7
Muar	149	27.5	6	1.0	287	41.5	172	25.9	13	1.8	282	38.7	5	0.5	0	0.0	95	9.1	84	7.7
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	47	7.7
Melaka	44	3.2	66	4.0	147	9.0	14	0.9	2	0.1	4	0.2	80	3.3	193	7.6	234	9.8	199	7.5
Selayang	118	8.3	24	1.4	3	0.2	60	3.3	40	3.0	24	2.7	93	6.9	34	2.6	79	6.9	100	6.6
Teluk Intan	0	0.0	4	0.6	221	33.3	133	21.6	362	32.8	282	27.8	153	16.4	0	0.0	111	9.2	66	6.2
Temerloh	139	21.7	99	22.0	0	0.0	25	2.9	16	1.8	82	7.8	0	0.0	77	7.6	74	8.0	46	5.4
Kangar	1	0.3	0	0.0	1	0.2	0	0.0	66	14.2	14	3.3	0	0.0	0	0.0	213	28.7	40	5.3
Sultanah Aminah JB	136	10.3	202	14.7	320	28.4	82	6.9	158	11.7	8	0.6	6	0.4	263	16.7	134	14.5	60	5.0
KK-KKM Pahang	-	-	-	-	-	-	-	-	5	7.8	-	-	1	0.5	5	4.2	0	0.0	8	4.7
Ipoh	118	5.5	0	0.0	63	3.5	230	7.8	156	5.1	43	1.6	322	12.6	180	5.8	26	0.8	161	4.3
Klang	142	15.7	109	10.8	92	8.7	94	6.7	68	4.2	79	5.4	1	0.1	15	0.7	57	2.5	90	3.9
Pulau Pinang	226	16.4	220	11.7	186	8.5	30	2.3	63	3.7	22	1.2	79	3.5	80	3.1	22	1.3	72	3.3
Bukit Mertajam	2	0.3	0	0.0	40	5.0	33	3.6	13	1.4	0	0.0	55	4.3	0	0.0	69	4.8	49	3.2
Alor Setar	30	2.7	7	0.5	3	0.2	131	7.1	165	9.4	96	4.6	1	0.0	4	0.2	65	2.5	47	3.0
Kota Bharu	2	0.2	2	0.2	4	0.4	6	1.1	5	0.7	0	0.0	6	0.7	4	0.4	76	5.4	40	2.9
Kuala Lumpur	368	26.2	15	0.9	86	5.3	20	1.3	15	1.3	62	3.2	31	1.9	33	2.1	16	1.1	60	2.5
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	3	7.9	5	12.5	0	0.0	8	2.9	4	2.4
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	28	12.7	42	9.5	14	1.9

KK-KKM Static*	-	-	-	-	-	-	-	-	7	0.4	2	0.1	6	0.3	6	0.2	9	0.3	75	1.8
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	3	2.2	3	1.5
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	3	1.4
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	15	4.3	3	1.1
Keningau	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.9	2	0.8
Serdang	29	4.8	6	1.2	33	5.0	16	2.3	31	3.0	3	0.2	1	0.1	0	0.0	59	6.7	12	0.7
Sungei Petani	0	0.0	0	0.0	47	5.8	3	0.4	0	0.0	0	0.0	74	7.4	0	0.0	194	14.1	10	0.7
Seremban	18	1.5	46	3.0	6	0.4	4	0.3	32	2.1	74	4.7	120	7.0	48	2.6	157	8.1	11	0.5
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	12	2.5	3	0.5
KK-KKM Sarawak	-	-	-	-	-	-	-	-	0	0.0	32	3.9	20	1.8	9	1.0	33	3.7	3	0.5
Putrajaya	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	0.8	1	0.2
Bintulu	0	0.0	0	0.0	0	0.0	0	0.0	8	2.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kemaman	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	11	39.3	0	0.0	0	0.0
Kuala Krai	0	0.0	0	0.0	10	4.2	21	8.5	0	0.0	0	0.0	0	0.0	0	0.0	3	0.9	0	0.0
Kulim	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Sandakan	1	0.6	0	0.0	55	20.3	17	6.4	0	0.0	0	0.0	0	0.0	0	0.0	89	17.3	0	0.0
Sarikei	-	-	-	-	-	-	-	-	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Sibu	194	50.1	92	20.2	254	50.3	68	9.1	138	15.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sri Manjung	0	0.0	0	0.0	0	0.0	2	0.4	7	0.8	0	0.0	0	0.0	191	27.9	128	14.7	0	0.0
Sungai Buloh	9	2.3	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3	1	0.1	0	0.0	0	0.0	0	0.0
Taiping	2	0.3	206	23.2	100	10.5	219	19.6	89	6.9	2	0.2	3	0.2	0	0.0	0	0.0	0	0.0
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	9	1.3	1	0.3	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0.3	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4.8	0	0.0	-	-

*PPKM-HS and KK-KKM Jitra

Table 1.3.3-6: Medical Officer by SDP, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	2750	11.3	2871	10.1	2478	8.1	2354	7.2	2,244	6.0	2,249	5.5	2,558	5.7	3,090	6.1	3,340	6.2	2,989	5.4
Keningau	0	0.0	60	78.9	20	38.5	12	70.6	9	60.0	111	83.5	82	100.0	356	96.2	321	99.1	224	91.1
Ampang	12	2.8	132	21.1	82	11.6	69	7.7	163	16.6	224	23.7	188	21.4	164	21.9	234	20.7	187	18.1
Sibu	63	16.3	18	4.0	21	4.2	2	0.3	3	0.3	7	0.8	60	10.3	33	4.1	13	1.6	114	15.5
Selayang	136	9.6	261	15.4	333	17.9	304	16.6	209	15.6	145	16.1	141	10.4	155	12.0	126	11.1	210	13.8
Kangar	3	0.8	5	1.3	0	0.0	9	2.0	14	3.0	47	11.0	118	20.5	85	13.0	81	10.9	87	11.6
Sandakan	85	53.8	85	40.9	118	43.5	120	45.3	7	1.7	2	0.8	88	17.6	50	12.1	59	11.5	49	11.4
Seremban	392	31.9	326	21.5	337	21.0	446	28.6	321	21.1	433	27.3	393	22.8	349	19.1	359	18.5	241	11.0
Melaka	244	17.6	250	15.1	128	7.8	82	5.5	167	9.7	166	7.8	176	7.4	109	4.3	168	7.0	224	8.5
Ipoh	335	15.7	330	15.0	230	12.6	220	7.5	114	3.8	102	3.7	247	9.7	216	6.9	248	7.2	313	8.4
Kuantan	41	14.0	61	9.9	65	9.6	77	11.3	90	14.5	67	11.6	166	15.4	124	10.1	123	8.8	103	7.9
Putrajaya	0	0.0	0	0.0	0	0.0	6	1.7	5	1.3	7	1.9	11	2.4	13	3.0	15	3.0	44	7.7
Kuala Krai	6	3.4	6	2.8	0	0.0	0	0.0	0	0.0	11	3.0	38	9.8	28	8.1	60	17.3	35	7.6
Queen Elizabeth KK	45	10.4	30	4.8	54	7.9	60	7.9	147	15.0	100	9.6	64	5.6	96	6.9	121	7.0	122	6.8
KK-KKM Static*	-	-	-	-	-	-	-	-	12	0.8	23	1.0	7	0.4	100	3.4	157	4.5	230	5.4
Umum Sarawak	139	15.6	170	14.1	84	7.4	141	8.5	56	3.3	71	3.4	48	2.4	95	5.1	46	2.5	73	5.1
Serdang	2	0.3	8	1.5	23	3.5	16	2.3	35	3.4	28	2.2	0	0.0	6	1.1	15	1.7	87	4.9
Alor Setar	234	21.1	144	9.4	194	10.0	109	5.9	164	9.3	169	8.0	182	7.8	212	8.1	147	5.7	74	4.8
Kota Bharu	105	11.5	100	10.4	80	8.5	54	9.9	52	7.6	6	2.1	84	9.1	88	7.9	81	5.8	65	4.8
Kuala Terengganu	69	9.3	74	10.4	48	6.2	57	7.5	74	7.3	55	6.1	78	7.9	103	7.8	143	10.3	69	4.8
Teluk Intan	73	11.9	44	6.4	45	6.8	44	7.1	62	5.6	46	4.5	48	5.2	71	5.4	61	5.1	51	4.8
Miri	0	0.0	1	0.2	8	1.2	5	0.6	0	0.0	3	0.3	7	0.8	42	4.0	61	5.2	48	4.3
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	2	5.3	2	5.0	0	0.0	17	6.1	7	4.2
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	16	4.5	10	3.6
Kemaman	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	3.4
Kuala Lumpur	166	11.8	274	16.6	271	16.7	108	7.1	44	3.8	120	6.2	64	4.0	120	7.7	60	4.1	77	3.2
Bukit Mertajam	26	3.5	22	2.7	19	2.4	16	1.7	43	4.7	31	3.1	32	2.5	34	2.5	21	1.5	47	3.1
Sungei Petani	1	0.1	12	2.2	33	4.1	102	12.1	71	7.6	90	8.8	36	3.6	34	3.0	91	6.6	42	3.1

Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	18	2.9	
Bintulu	23	18.5	39	15.1	2	0.6	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	2.6
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	6	4.6	5	1.8	16	3.3	12	2.0
Klang	70	7.7	63	6.3	1	0.1	0	0.0	20	1.2	19	1.3	31	1.6	48	2.2	28	1.2	44	1.9
KK-KKM Pahang	-	-	-	-	-	-	-	-	0	0.0	-	-	0	0.0	0	0.0	12	4.1	3	1.8
Kuala Pilah	33	11.4	12	3.7	18	3.7	5	1.2	14	2.8	2	0.4	4	0.9	18	3.0	3	0.5	10	1.6
Kulim	-	-	-	-	-	-	-	-	-	-	0	0.0	22	5.3	41	7.2	9	1.5	10	1.6
Sultanah Aminah JB	102	7.7	77	5.6	37	3.3	34	2.8	15	1.1	11	0.8	30	1.8	59	3.7	43	4.7	19	1.6
Sungai Buloh	17	4.4	1	0.2	0	0.0	0	0.0	1	0.2	5	0.7	2	0.3	1	0.1	4	0.5	8	1.5
Temerloh	119	18.6	61	13.6	30	4.4	16	1.8	13	1.5	11	1.1	6	0.7	9	0.9	3	0.3	9	1.1
Sarikei	-	-	-	-	-	-	-	-	0	0.0	1	0.2	4	0.6	5	0.7	0	0.0	5	0.9
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	1	0.5	0	0.0	6	0.8
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	1	0.5	0	0.0	0	0.0	0	0.0	1	0.5
Batu Pahat	69	11.5	46	11.2	9	1.6	17	2.8	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Muar	5	0.9	5	0.8	0	0.0	0	0.0	5	0.7	2	0.3	1	0.1	0	0.0	0	0.0	0	0.0
Pulau Pinang	124	9.0	140	7.5	184	8.4	221	16.6	312	18.4	130	7.3	85	3.8	168	6.5	1	0.1	1	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Sri Manjung	9	2.8	12	3.1	3	0.7	0	0.0	0	0.0	0	0.0	0	0.0	3	0.4	3	0.3	0	0.0
Sultan Ismail	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Taiping	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tawau	2	0.7	2	0.5	1	0.2	0	0.0	0	0.0	0	0.0	4	0.7	38	5.6	2	0.7	0	0.0
KK-KKM Sarawak	-	-	-	-	-	-	-	-	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	3	5.0	9	10.1	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	1	5.6	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	372	31.5	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1.2	0	0.0	-	-

*PPKM-HS and KK-KKM Jitra

1.3.4 Duration of Surgery

Table 1.3.4-1: Duration of Surgery by Types of Cataract Surgery, CSR 2009-2018

Year	2009*		2010*		2011*		2012*		2013*		2014*		2015*		2016*		2017*		2018*	
	Mean	SD	Mean	SD	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR
All eyes	38.2	20.4	35.5	19.3	30	20-40	30	20-40	27	20-38	26	20-36	25	20-36	25	20-35	25	20-34	24	19-32
Phaco	33.6	17.7	31.3	16.4	26	20-35	25	19-33	25	20-33	25	20-32	25	20-31	23	19-30	23	19-30	23	18-30
Lens Aspiration	46.1	25.9	45.4	28.9	40	30-60	35	25-56	31	23-50	35	25-50.5	39	25-60	35	25-53	37	25-57	35	25-53
SICS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	35	28.5-45
ECCE	49.1	20.9	47.4	20.2	43	31-60	40	30-55	45	33-60	45	35-61	50	37-65	50	36-65	53	40-70	53	40-70
ICCE	58.1	24.4	57.6	28.3	55	45-71	55	40-71	52	35-69.5	53	42-70	58	44-74.5	55	42-70	60	45-77	55	43-70
Phaco → ECCE	59.7	24.2	56.1	21.7	55	40-70	55	40-70	55	41-67	55	43-70	58	45-74	58	45-73	-	-	-	-

Data entered with extreme values i.e. more than 3 hours and less than 15 minutes were not analyzed as it would skew the data

Table 1.3.4-2: Duration of Surgery by Surgeon Status, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	Mean	SD	Mean	SD	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR
Phaco Specialist	32.6	17.3	30.7	16.3	25	20-35	25	20-34	25	20-31	25	20-30	24	20-30	23	18-30	23	18-30	22	18-29
Gazetting Specialist	39.8	19.9	36.2	15.8	30	24-40	28	21-37	30	23-40	30	25-40	33	25-45	31	24-42	30	23-38	30	23-40
Medical Officers	41.5	17.7	38.2	16.6	30	25-43.5	34	25-45	32	25-44	30	25-40	30	22-40	26	20-40	32	23-45	30	22-44
ECCE Specialist	42.6	18	42	17.3	36	30-50	35	30-48	40	30-53	40	30-55	42	32-55	41	31-56	46	35-61	47	35-62
Medical Officers	60.5	21.4	57.4	22	55	45-70	57	45-66	60	50-72	60	50-75	60.5	50-78	61	50-80	64	51-85	65	51-80
Gazetting Specialist	48.4	19.1	48.6	16.1	46	39-60	45	35-55	50	40-60	54	45-70	60	45-75	57	45-70	60	45-74	68	55-84

1.3.5 Distribution of Cataract Surgery Performed as Day Care

Table 1.3.5-1: Distribution of Cataract Surgery Performed as Day Care, CSR 2009-2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of SDPs	36	36	36	36	41	43	50	54	54	?
Total number of cataract surgery registered to CSR	24438	28506	30611	32473	37150	40532	44534	50625	54242	55687
Number of surgery excluding children and combined surgery	22517	26514	28398	30144	32833	37999	41956	48915	52475	53912
Number and % of day care surgery excluding children and combined surgery	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
	10633 47.2	13657 51.5	14842 52.3	17827 59.1	20495 62.4	25342 66.7	28959 69.0	34843 71.2	39591 75.4	41755 77.5

*SDP in 2002, 2003 and 2004 included private centres and university hospitals

Table 1.3.5-2: Distribution of Cataract Surgery Performed as Day Care (Excluding Children and Combined Surgery), CSR 2009-2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
All Centres	10633 47.2	13657 51.5	14842 52.3	17827 59.1	20495 62.4	25342 66.7	28959 69.0	34843 71.2	39591 75.4	41755 77.5
KK-KKM Kelantan	- -	- -	- -	- -	- -	184 99.5	2 100.0	61 100.0	136 100.0	194 100.0
KK-KKM Static*	- -	- -	- -	- -	0 0.0	2264 100.0	1824 100.0	2893 100.0	3501 100.0	4245 99.9
Sarikei	- -	- -	- -	- -	274 96.1	536 96.9	623 98.7	688 99.6	425 99.3	540 99.6
Bukit Mertajam	650 88.8	714 90.8	719 93.5	846 94.3	840 96.2	906 95.3	1182 96.6	1336 98.2	1391 98.4	1466 98.7
Miri	397 99.7	568 99.3	640 100.0	868 99.9	910 100.0	939 100.0	859 98.7	1012 98.4	1147 99.1	1077 98.6
KK-KKM Sarawak	- -	- -	- -	- -	74 98.7	811 99.8	1087 96.5	914 99.9	883 100.0	560 98.2
Melaka	1121 89.3	1425 90.2	1530 95.7	1384 95.5	1504 91.9	1983 96.7	2233 96.8	2446 98.0	2295 97.5	2518 97.9
Seremban	789 85.3	1241 89.4	1433 93.7	1410 96.4	1405 96.8	1442 96.1	1591 97.1	1688 96.2	1808 95.6	2103 97.8

Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	346	99.7	655	98.8	595	97.4	
Sibu	1	0.3	2	0.4	3	0.6	394	59.7	630	76.1	790	93.9	549	95.6	755	96.1	771	97.7	705	97.4
Umum Sarawak	809	95.2	1096	95.0	1055	97.1	1547	97.7	1575	97.9	1838	95.5	1770	95.6	1715	95.1	1650	94.3	1328	97.1
Pulau Pinang	1232	92.0	1682	94.8	1946	97.1	1262	96.8	1606	97.7	1599	97.7	2005	96.1	2384	96.7	1531	96.8	2002	96.6
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	91	70.0	263	96.0	446	94.5	539	94.6
Putrajaya	191	76.7	254	90.7	299	92.3	335	96.3	367	94.1	331	90.9	433	95.2	409	95.6	460	94.1	536	94.0
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	4	100.0	139	64.1	399	92.4	657	93.3
Sultanah Aminah JB	42	3.5	45	3.7	14	1.4	26	2.5	75	6.0	529	40.3	1152	74.6	1265	83.9	780	90.5	1009	92.0
KK-KKM Pahang	-	-	-	-	-	-	-	-	2	3.2	-	-	157	86.7	109	91.6	188	65.1	155	91.7
Ampang	412	97.4	574	93.6	685	98.8	832	96.4	886	92.3	824	91.0	777	92.2	638	86.0	1012	90.8	921	89.4
Selayang	1026	86.8	1219	87.0	1305	91.1	1388	90.4	1088	93.5	760	94.1	855	84.5	800	80.6	839	86.6	1186	88.8
Sandakan	0	0.0	0	0.0	0	0.0	92	35.7	343	88.2	177	95.2	454	92.1	330	80.1	421	83.4	353	83.8
Kota Bharu	124	14.8	294	33.5	220	24.9	102	20.5	70	11.4	18	6.6	477	56.9	827	79.0	1053	81.1	1057	83.1
Queen Elizabeth KK	384	97.0	500	98.4	640	97.3	703	97.4	918	96.0	901	90.6	929	88.1	1092	81.7	1395	85.5	1379	81.6
Kangar	3	0.8	3	0.8	5	1.3	7	1.6	3	0.7	3	0.7	11	2.0	27	4.3	176	23.9	591	79.2
Ipoh	1267	66.0	1487	75.4	1104	71.5	1894	78.5	2284	92.2	2058	86.6	1872	79.1	2242	75.4	2471	75.4	2828	77.9
Kemaman	-	-	-	-	-	-	-	-	44	100.0	69	97.2	3	100.0	26	92.9	126	78.8	88	75.9
Kuala Krai	0	0.0	2	1.0	75	33.3	133	61.6	295	79.1	306	89.0	374	98.2	338	98.8	345	99.4	339	74.8
Kuala Terengganu	168	24.3	222	34.2	334	47.0	356	50.6	488	51.0	449	55.1	500	55.7	941	75.4	940	71.9	1002	74.8
Kuantan	20	7.9	28	5.1	38	5.9	168	26.5	280	48.6	352	63.4	679	66.6	841	71.3	978	72.4	912	72.0
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	170	81.3	307	90.6	263	74.9	199	71.3
Sungei Petani	3	0.5	59	11.0	377	47.3	291	35.7	366	41.2	297	30.6	352	36.4	920	81.9	1044	76.4	950	70.4
Sungai Buloh	312	81.0	392	85.4	377	85.9	422	82.9	376	65.7	442	74.9	536	72.8	598	73.4	564	77.8	353	68.5
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	241	61.0	151	68.0
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	68.0	140	67.3
Sultan Ismail	1	0.5	1	0.4	2	0.7	1	0.4	0	0.0	21	3.5	261	32.2	409	46.7	438	54.8	560	67.3
Taiping	95	16.4	117	13.9	130	14.3	516	48.5	621	50.1	689	57.4	750	58.0	925	60.4	1167	67.3	1187	65.2
Kuala Lumpur	725	53.3	684	42.4	486	30.3	351	24.8	46	4.5	426	25.3	380	27.1	355	23.6	781	56.2	1475	63.4
Bintulu	1	0.9	9	3.8	18	6.1	206	60.4	225	71.0	204	65.2	183	68.5	102	57.0	209	82.0	145	63.0
Serdang	388	67.2	310	60.5	291	46.5	434	62.7	415	42.7	652	53.7	599	63.2	331	62.1	491	56.6	1050	59.7
Sri Manjung	83	25.9	194	51.2	224	53.8	304	66.7	556	70.7	385	66.5	424	67.2	520	77.3	607	70.4	535	59.7
Batu Pahat	303	52.0	246	61.3	353	65.2	367	61.2	248	58.6	248	54.0	300	54.2	366	55.3	353	55.0	487	57.6

Klang	65	7.5	87	9.6	159	17.9	373	28.2	631	41.1	547	40.0	764	40.9	843	38.4	987	43.0	1289	56.6
Muar	1	0.2	0	0.0	1	0.1	22	3.3	4	0.6	8	1.1	187	20.4	515	48.0	631	61.7	606	56.3
Keningau	3	10.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11	13.8	116	31.4	181	56.2	136	56.2
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	2	0.4	1	0.2	2	0.4	33	5.3	101	35.8	193	49.7
Teluk Intan	1	0.2	1	0.1	5	0.8	3	0.5	6	0.9	4	0.4	11	1.2	80	6.0	286	23.8	407	38.1
Temerloh	2	0.3	1	0.2	151	22.3	438	52.4	456	53.3	567	54.8	512	61.0	474	47.5	374	41.1	311	37.0
Kuala Pilah	10	5.1	14	4.6	17	4.0	87	22.1	252	54.4	153	33.2	89	20.7	116	19.8	94	14.6	161	25.9
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	5	15.2	25	64.1	8	16.0	187	69.5	144	24.6
Alor Setar	3	0.3	186	13.8	206	11.9	265	16.1	330	21.4	613	33.4	837	39.8	1062	44.2	1193	51.9	290	22.4
Kulim	-	-	-	-	-	-	-	-	-	-	11	4.4	48	11.6	90	16.0	34	5.7	101	16.9
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	16	27.6	19	21.3	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	9	100.0	18	100.0	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	870	78.4	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	30.1	30	90.9	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	100.0	90	100.0	-	-

*PPKM-HS and KK-KKM Jitra

Average day care (all patients) = 75.8%

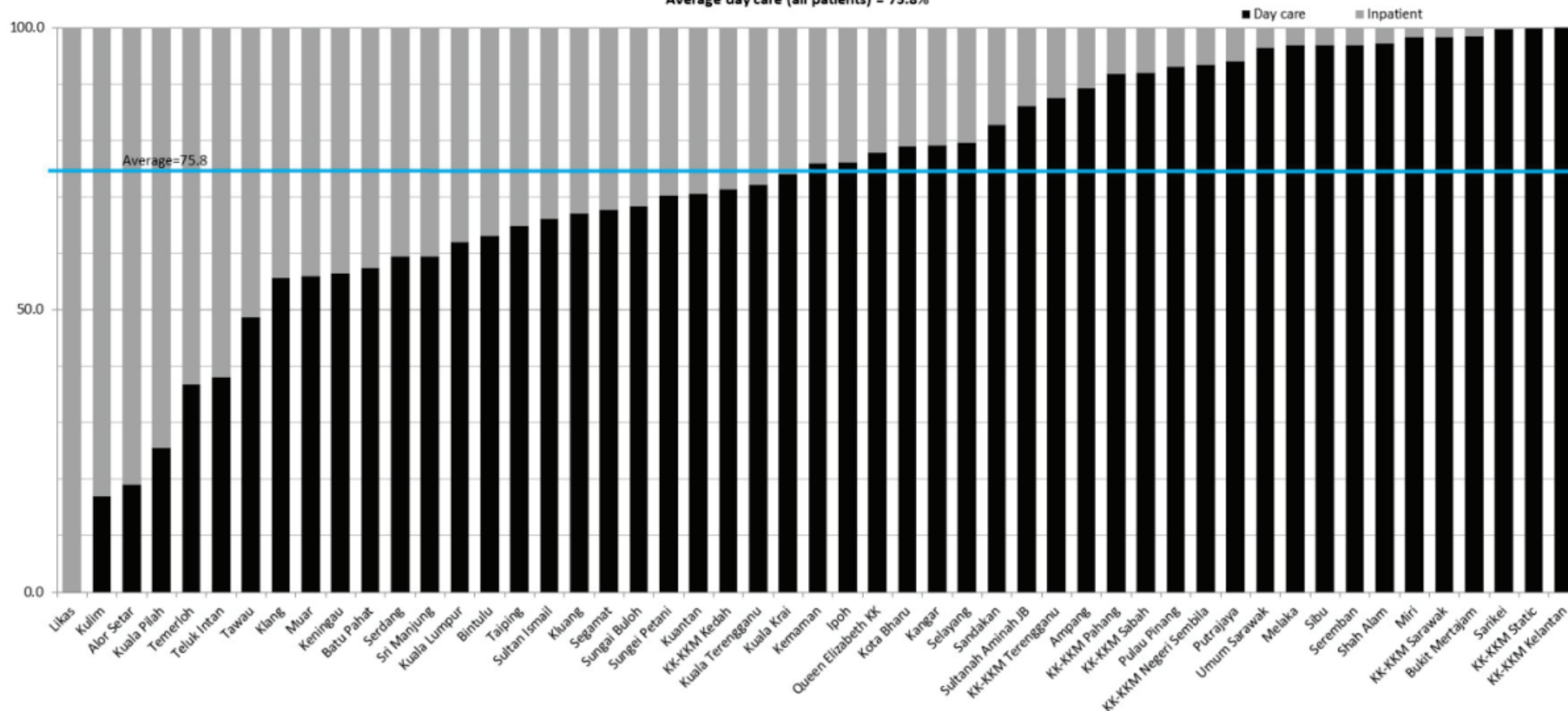


Figure 1.3.5-1: Distribution of Cataract Surgery by SDP (Daycare vs In-patient), CSR 2018

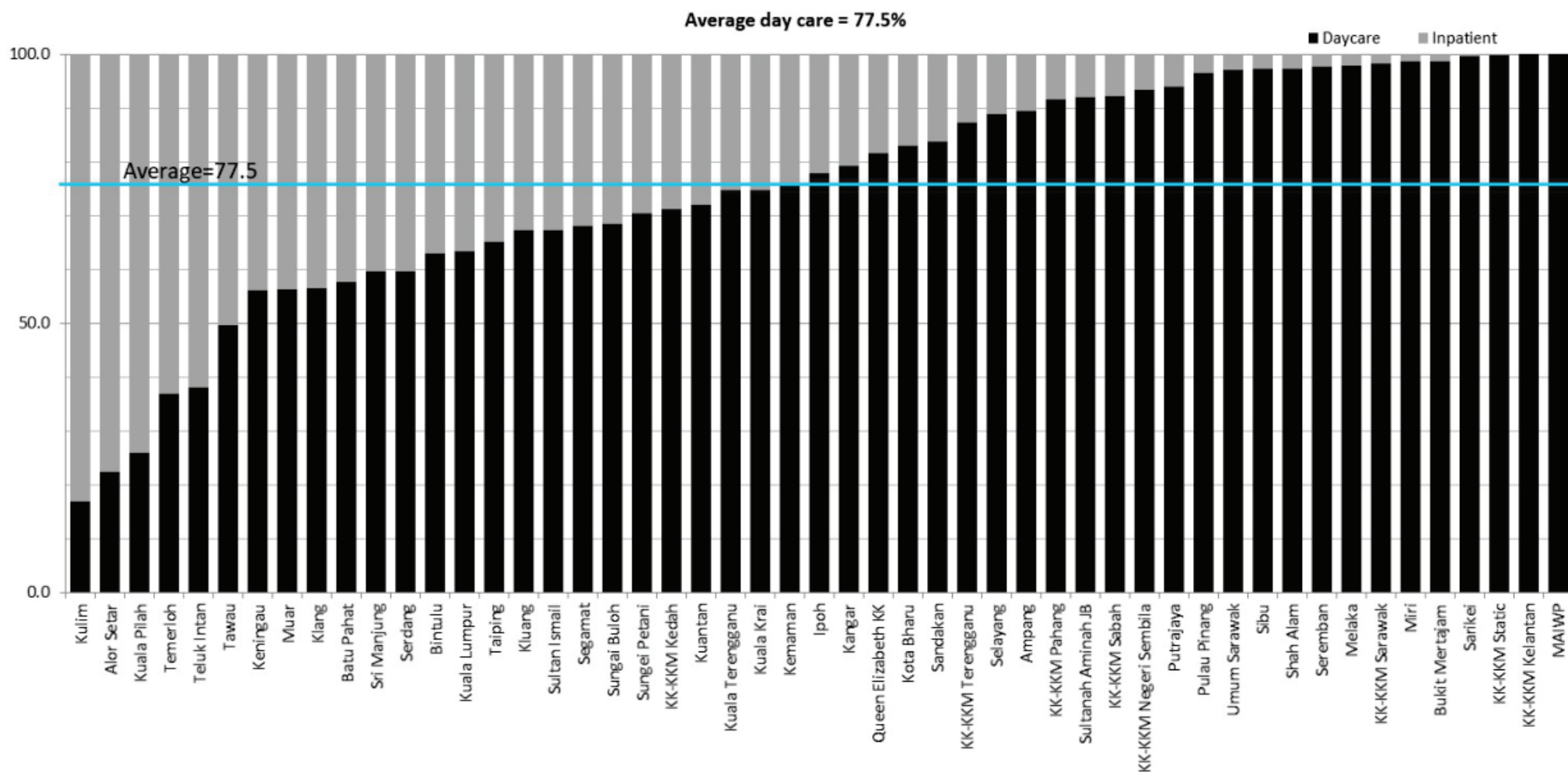


Figure 1.3.5-2: Distribution of Cataract Surgery Performed by SDP (Day Care VS In Patient, Excluding Surgery Done in Children and Combined Surgery), CSR 2018

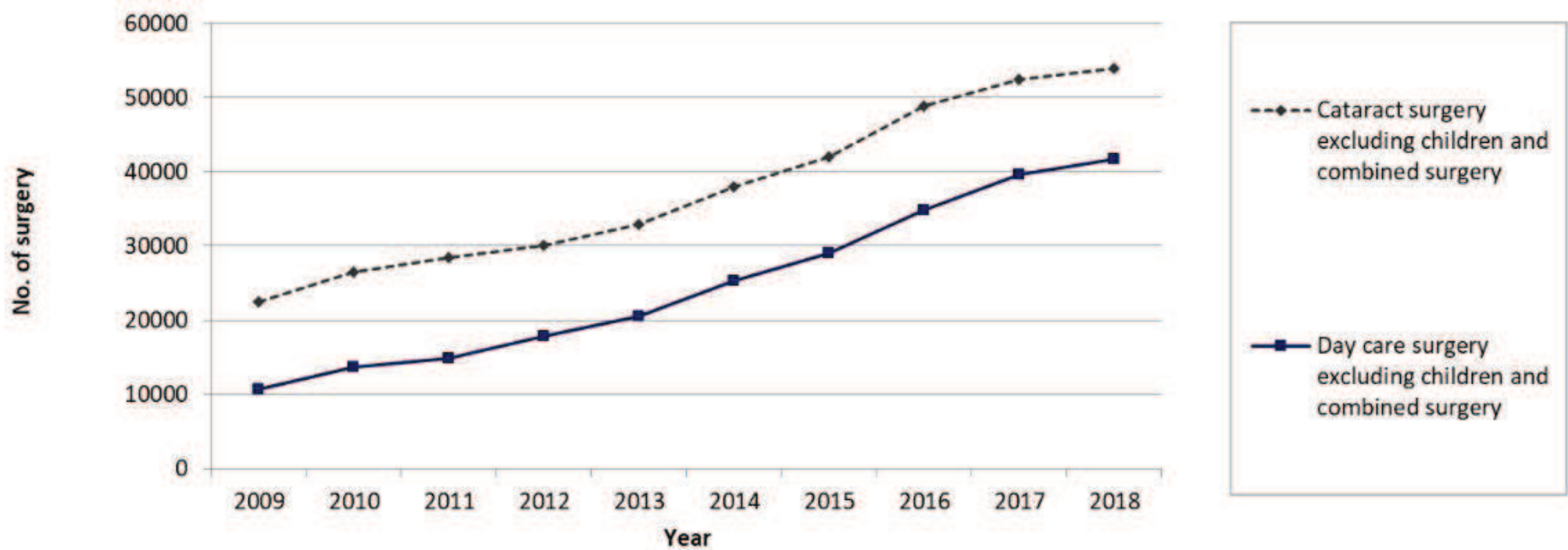


Figure 1.3.5-3: Distribution of Cataract Surgery Performed as Day Care by SDP (Excluding Surgery Done in Children and Combined Surgery), CSR 2009-2018

1.3.6 Distribution of Types of Cataract Surgery

Table 1.3.6-1: Distribution of Types Cataract Surgery, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Phacoemulsification	17717	72.5	21810	76.5	23872	78	26345	81.1	31625	85.1	35429	87.4	39131	87.9	45346	89.6	49543	91.3	51209	92.0
ECCE	5457	22.3	5363	18.8	5291	17.3	4784	14.7	4086	11.0	3613	8.9	3677	8.3	3439	6.8	3656	6.7	3243	5.8
Lens Aspiration	400	1.6	451	1.6	460	1.5	444	1.4	364	1.0	370	0.9	521	1.2	527	1.0	572	1.1	667	1.2
ICCE	134	0.5	143	0.5	123	0.4	136	0.4	173	0.5	176	0.4	223	0.5	275	0.5	284	0.5	361	0.6
SICS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0.0	102	0.2
Phaco converted to ECCE	573	2.3	586	2.1	652	2.1	621	1.9	769	2.1	805	2.0	833	1.9	870	1.7	-	-	-	-

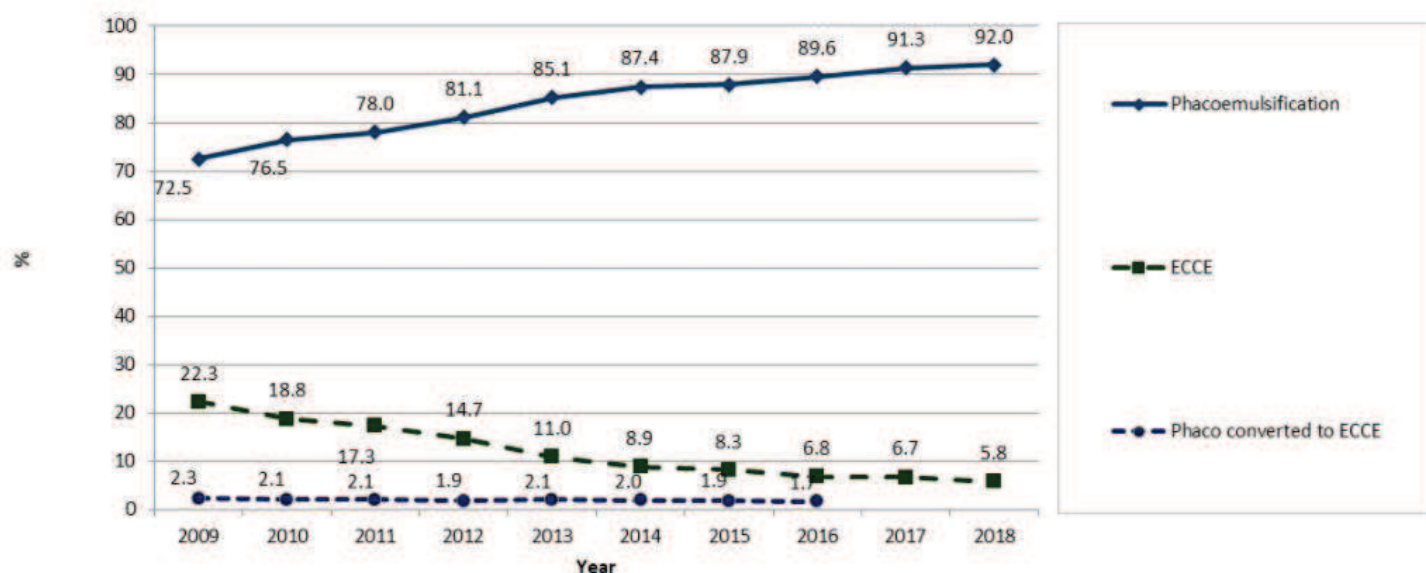


Figure 1.3.6-1: Distribution of Phaco, ECCE and Phaco Converted to ECCE, CSR 2009-2018

Table 1.3.6-2: Distribution of Types Cataract Surgery by SDP, CSR 2018

Type of Cataract Surgery												
	All Surgeries		Phaco		ECCE		Lens Aspiration		ICCE		SICS	
	N	%	n	%	n	%	n	%	n	%	n	%
All Centres	55687	100.0	51209	92.0	3243	5.8	667	1.2	361	0.6	102	0.2
Sri Manjung	909	100.0	887	97.6	11	1.2	6	0.7	5	0.6	0	0.0
Sarikei	548	100.0	533	97.3	10	1.8	2	0.4	2	0.4	0	0.0
Pulau Pinang	2,164	100.0	2,096	96.9	38	1.8	10	0.5	12	0.6	0	0.0
KK-KKM Static*	4,261	100.0	4,117	96.6	111	2.6	28	0.7	5	0.1	0	0.0
Umum Sarawak	1,444	100.0	1,387	96.1	30	2.1	16	1.1	10	0.7	0	0.0
Bukit Mertajam	1508	100.0	1444	95.8	40	2.7	14	0.9	8	0.5	0	0.0
Sibu	734	100.0	703	95.8	20	2.7	7	1.0	4	0.5	0	0.0
Shah Alam	613	100.0	586	95.6	18	2.9	3	0.5	5	0.8	0	0.0
Bintulu	230	100.0	219	95.2	8	3.5	1	0.4	2	0.9	0	0.0
Sungei Petani	1352	100.0	1280	94.7	50	3.7	15	1.1	6	0.4	1	0.1
Ipoh	3,747	100.0	3,543	94.6	146	3.9	32	0.9	23	0.6	2	0.1
Sultanah Aminah JB	1,205	100.0	1,134	94.1	21	1.7	27	2.2	18	1.5	0	0.0
Miri	1122	100.0	1053	93.9	52	4.6	7	0.6	8	0.7	2	0.2
Melaka	2,637	100.0	2,473	93.8	121	4.6	27	1.0	14	0.5	0	0.0
Selayang	1,526	100.0	1,431	93.8	51	3.3	24	1.6	13	0.9	0	0.0
KK-KKM Neg. Sembilan	720	100.0	673	93.5	28	3.9	1	0.1	11	1.5	2	0.3
KK-KKM Sarawak	572	100.0	535	93.5	16	2.8	0	0.0	1	0.2	20	3.5
Muar	1086	100.0	1013	93.3	59	5.4	7	0.6	7	0.6	0	0.0
Kuala Pilah	629	100.0	586	93.2	30	4.8	1	0.2	8	1.3	2	0.3
Klang	2,330	100.0	2,153	92.4	108	4.6	52	2.2	13	0.6	0	0.0
Serdang	1784	100.0	1648	92.4	91	5.1	20	1.1	14	0.8	0	0.0

Sultan Ismail	851	100.0	785	92.2	34	4.0	23	2.7	8	0.9	0	0.0
KK-KKM Sabah	590	100.0	543	92.0	24	4.1	4	0.7	6	1.0	13	2.2
Keningau	246	100.0	226	91.9	12	4.9	2	0.8	4	1.6	0	0.0
KK-KKM Pahang	169	100.0	155	91.7	14	8.3	0	0.0	0	0.0	0	0.0
Seremban	2,188	100.0	2,004	91.6	124	5.7	16	0.7	6	0.3	30	1.4
Teluk Intan	1071	100.0	981	91.6	80	7.5	8	0.7	2	0.2	0	0.0
KK-KKM Terengganu	167	100.0	153	91.6	12	7.2	1	0.6	1	0.6	0	0.0
Kuala Lumpur	2,428	100.0	2,220	91.4	129	5.3	67	2.8	8	0.3	0	0.0
Kluang	212	100.0	193	91.0	14	6.6	1	0.5	4	1.9	0	0.0
Taiping	1,863	100.0	1695	91.0	154	8.3	10	0.5	4	0.2	0	0.0
Batu Pahat	848	100.0	771	90.9	46	5.4	11	1.3	16	1.9	0	0.0
Kulim	615	100.0	557	90.6	53	8.6	3	0.5	2	0.3	0	0.0
Alor Setar	1,541	100.0	1,394	90.5	93	6.0	36	2.3	3	0.2	1	0.1
Temerloh	848	100.0	766	90.3	65	7.7	7	0.8	10	1.2	0	0.0
Sungai Buloh	524	100.0	471	89.9	43	8.2	6	1.1	4	0.8	0	0.0
Ampang	1034	100.0	927	89.7	100	9.7	3	0.3	4	0.4	0	0.0
Putrajaya	572	100.0	504	88.1	54	9.4	10	1.7	3	0.5	0	0.0
KK-KKM Kedah	279	100.0	245	87.8	10	3.6	0	0.0	0	0.0	24	8.6
Kuala Terengganu	1428	100.0	1249	87.5	121	8.5	34	2.4	15	1.1	1	0.1
Tawau	413	100.0	356	86.2	42	10.2	9	2.2	5	1.2	0	0.0
Segamat	223	100.0	190	85.2	31	13.9	2	0.9	0	0.0	0	0.0
Queen Elizabeth KK	1800	100.0	1528	84.9	221	12.3	19	1.1	26	1.4	2	0.1
Kuantan	1304	100.0	1106	84.8	164	12.6	21	1.6	7	0.5	2	0.2
Kangar	752	100.0	628	83.5	112	14.9	1	0.1	11	1.5	0	0.0
KK-KKM Kelantan	195	100.0	162	83.1	32	16.4	0	0.0	1	0.5	0	0.0
Kota Bharu	1368	100.0	1123	82.1	206	15.1	24	1.8	13	1.0	0	0.0
Sandakan	428	100.0	349	81.5	70	16.4	6	1.4	3	0.7	0	0.0
Kuala Krai	459	100.0	354	77.1	95	20.7	9	2.0	1	0.2	0	0.0
Kemaman	116	100.0	79	68.1	29	25.0	1	0.9	5	4.3	0	0.0
Likas	34	100.0	1	2.9	0	0.0	33	97.1	0	0.0	0	0.0
Pusat Perubatan UKM	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Johor	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Pulau Pinang	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

*PPKM-HS and KK-KKM Jitra

Table 1.3.6-3: Distribution of Phaco by SDP, CSR 2009-2018

Years	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	17717	72.5	21810	76.5	23872	78.0	26345	81.1	31625	85.1	35429	87.4	39131	87.9	45346	89.6	49543	91.3	51209	92.0
Sri Manjung	203	62.1	314	81.1	344	81.9	412	88.4	799	96.0	608	97.3	650	97.6	659	96.3	844	97.2	887	97.6
Sarikei	-	-	-	-	-	-	-	-	281	98.3	538	96.9	633	97.8	674	97.1	425	98.6	533	97.3
Pulau Pinang	1208	87.9	1707	91.0	2077	95.0	1260	94.7	1589	93.7	1712	95.6	2,139	95.5	2,487	96.0	1,589	96.4	2,096	96.9
KK-KKM Static*	-	-	-	-	-	-	-	-	1504	95.0	2196	96.9	1,777	97.4	2,841	98.0	3,419	97.5	4,117	96.6
Umum Sarawak	654	73.2	966	80.0	996	88.1	1546	93.3	1648	95.8	1986	96.0	1,929	95.5	1,807	96.2	1,752	96.2	1,387	96.1
Bukit Mertajam	462	62.2	503	62.6	427	53.2	564	60.8	620	68.2	749	75.1	988	78.1	1094	79.3	1368	95.9	1444	95.8
Sibu	126	32.6	386	84.8	376	74.5	683	91.7	835	92.8	826	95.4	538	92.6	752	94.5	740	92.5	703	95.8
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	340	96.3	651	97.5	586	95.6
Bintulu	75	60.5	183	70.9	241	72.6	245	62.7	357	93.2	353	94.4	337	96.3	176	89.3	246	94.3	219	95.2
Sungei Petani	580	84.8	455	81.5	662	81.6	604	71.5	704	75.7	743	72.7	883	87.8	1006	88.4	1265	92.0	1280	94.7
Ipoh	1801	84.3	1913	87.0	1496	81.9	2596	88.5	2801	92.4	2566	93.0	2,258	88.7	2,893	92.6	3,281	94.7	3,543	94.6
Sultanah Aminah JB	1166	88.5	1274	92.5	986	87.5	1069	89.5	1261	93.4	1303	94.4	1,512	92.0	1,468	93.2	834	90.6	1,134	94.1
Miri	392	97.0	556	96.4	593	90.3	849	94.2	892	97.5	893	94.1	837	92.7	998	95.5	1087	91.8	1053	93.9
Melaka	1111	80.1	1295	78.1	1315	80.1	1203	80.8	1395	81.2	1919	89.7	2,189	91.6	2,377	93.3	2,253	94.1	2,473	93.8
Selayang	1255	88.5	1542	90.8	1619	87.1	1625	88.8	1233	92.2	809	90.0	1,166	86.2	1,131	87.9	1,048	92.2	1,431	93.8
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	3	75.0	206	93.6	416	93.7	673	93.5
KK-KKM Sarawak	-	-	-	-	-	-	-	-	74	97.4	808	97.2	1,096	96.9	898	97.9	865	97.7	535	93.5
Muar	452	83.4	526	85.3	616	89.0	608	91.4	647	90.2	628	86.1	855	92.1	1021	94.1	970	93.4	1013	93.3
Kuala Pilah	73	25.2	149	46.3	376	77.8	361	84.1	416	84.6	430	87.2	399	88.3	542	90.3	616	95.4	586	93.2
Klang	486	53.8	617	61.3	907	85.5	1224	86.7	1476	91.6	1351	92.5	1,801	91.1	2,027	91.0	2,192	94.4	2,153	92.4
Serdang	483	80.8	371	71.3	466	70.0	564	79.5	836	81.7	1072	84.7	893	90.9	483	90.1	825	93.5	1648	92.4
Sultan Ismail	131	70.8	172	66.7	189	66.8	208	74.6	276	73.8	496	81.4	712	86.1	815	92.1	761	93.5	785	92.2
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	107	81.7	262	95.3	450	93.8	543	92.0
Keningau	0	0.0	0	0.0	0	0.0	0	0.0	6	40.0	96	72.2	75	91.5	340	91.9	309	95.4	226	91.9
KK-KKM Pahang	-	-	-	-	-	-	-	-	47	73.4	-	-	161	86.1	108	90.8	274	93.2	155	91.7
Seremban	912	74.2	1249	82.2	1368	85.2	1315	84.3	1363	89.7	1441	90.9	1,570	91.0	1,662	90.7	1,755	90.4	2,004	91.6
Teluk Intan	465	76.0	564	81.7	571	86.1	505	82.0	963	87.4	923	91.1	808	86.7	1191	89.8	1071	88.8	981	91.6
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	32	84.2	30	75.0	45	90.0	247	89.2	153	91.6
Kuala Lumpur	925	65.8	1141	69.2	1091	67.3	1208	79.7	956	83.1	1576	81.6	1,393	86.6	1,290	82.9	1,329	90.8	2,220	91.4
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	93.0	193	91.0
Taiping	440	71.9	552	62.1	618	64.8	885	79.2	1060	82.6	1030	83.5	1107	83.9	1346	85.5	1562	88.5	1695	91.0
Batu Pahat	443	73.6	307	74.7	425	76.7	447	73.5	332	76.7	341	73.0	486	86.6	588	88.3	584	90.0	771	90.9
Kulim	-	-	-	-	-	-	-	-	-	-	239	90.2	360	86.1	492	86.5	557	91.5	557	90.6
Alor Setar	702	63.2	1147	75.1	1510	77.9	1451	79.1	1358	77.2	1687	80.1	1,953	83.6	2,336	89.3	2,236	87.2	1,394	90.5
Temerloh	393	61.4	317	70.4	537	78.9	717	82.6	718	82.9	898	85.8	731	85.9	863	85.5	855	92.2	766	90.3
Sungai Buloh	272	70.3	346	73.9	371	82.4	419	81.5	450	77.6	599	86.4	708	91.5	739	90.3	681	93.2	471	89.9
Ampang	308	71.1	558	89.0	661	93.4	779	86.9	822	83.6	809	85.5	693	78.8	578	77.1	961	85.2	927	89.7
Putrajaya	186	74.1	200	70.9	263	79.9	271	76.3	303	77.5	289	78.7	395	85.3	350	81.6	416	83.5	504	88.1
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	209	100.0	332	97.9	311	88.4	245	87.8
Kuala Terengganu	473	63.7	453	63.4	517	67.1	537	70.2	778	76.7	707	78.6	773	78.3	1067	80.8	1163	83.5	1249	87.5
Tawau	0	0.0	0	0.0	0	0.0	1	0.2	133	26.4	354	65.6	497	81.9	574	84.3	255	85.3	356	86.2

Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	100	82.6	380	95.5	190	85.2	
Queen Elizabeth KK	331	76.4	481	77.1	534	77.8	529	69.3	694	71.0	847	81.4	932	82.3	1177	84.3	1531	88.0	1528	84.9
Kuantan	218	74.4	448	72.8	533	78.4	555	81.1	450	72.7	421	73.1	824	76.4	980	80.0	1157	82.6	1106	84.8
Kangar	367	92.0	342	85.5	375	93.1	412	90.7	421	90.3	356	83.6	423	73.4	518	79.4	615	82.8	628	83.5
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	94	50.5	2	100.0	34	54.8	105	76.1	162	83.1
Kota Bharu	538	59.1	604	62.9	580	61.3	367	67.3	386	56.6	162	56.8	549	59.6	793	71.2	1084	77.7	1123	82.1
Sandakan	0	0.0	4	1.9	21	7.7	104	39.2	354	86.1	206	86.9	420	84.2	358	86.5	432	84.2	349	81.5
Kuala Krai	85	48.6	168	77.4	211	87.9	222	89.9	350	88.2	292	80.0	274	70.4	255	74.1	253	72.9	354	77.1
Kemaman	-	-	-	-	-	-	-	-	37	78.7	44	61.1	2	66.7	19	67.9	116	72.0	79	68.1
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	1	3.0	1	2.9
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	49	81.7	75	84.3	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	5	55.6	9	50.0	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,074	90.9	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	96.8	33	100.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	95.2	88	97.8	-	-

*PPKM-HS and KK-KKM Jitra

Table 1.3.6-4: Distribution of ECCE by SDP, CSR 2009-2018

Years	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	832	n	%	n	%	n	%	n	%	n	%
All Centres	5457	22.3	5363	18.8	5291	17.3	4784	14.7	4086	11.0	3613	8.9	3677	8.3	3439	6.8	3656	6.7	3243	5.8
Kemaman	-	-	-	-	-	-	-	-	9	19.1	25	34.7	1	33.3	6	21.4	41	25.5	29	25.0
Kuala Krai	82	46.9	33	15.2	15	6.3	16	6.5	24	6.0	51	14.0	108	27.8	71	20.6	91	26.2	95	20.7
Sandakan	154	97.5	191	91.8	231	85.2	148	55.8	45	10.9	29	12.2	64	12.8	44	10.6	72	14.0	70	16.4
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	82	44.1	0	0.0	26	41.9	32	23.2	32	16.4
Kota Bharu	302	33.2	280	29.2	287	30.3	141	25.9	246	36.1	106	37.2	305	33.1	249	22.4	269	19.3	206	15.1
Kangar	18	4.5	46	11.5	19	4.7	27	5.9	34	7.3	50	11.7	140	24.3	119	18.3	117	15.7	112	14.9
Segamat	-	-	-	-	-	-	-	-	2	0.7	10	1.8	8	1.2	7	5.8	10	2.5	31	13.9
Kuantan	46	15.7	114	18.5	98	14.4	89	13.0	140	22.6	132	22.9	182	16.9	171	14.0	213	15.2	164	12.6
Queen Elizabeth KK	62	14.3	117	18.8	96	14.0	163	21.4	223	22.8	131	12.6	132	11.7	152	10.9	158	9.1	221	12.3
Tawau	292	98.0	380	94.8	557	96.9	634	97.8	308	61.2	149	27.6	88	14.5	78	11.5	40	13.4	42	10.2
Ampang	102	23.6	38	6.1	28	4.0	72	8.0	118	12.0	105	11.1	134	15.2	133	17.7	153	13.6	100	9.7
Putrajaya	57	22.7	65	23.0	42	12.8	48	13.5	48	12.3	46	12.5	35	7.6	56	13.1	75	15.1	54	9.4
Kulim	-	-	-	-	-	-	-	-	-	-	17	6.4	40	9.6	66	11.6	43	7.1	53	8.6
Kuala Terengganu	226	30.4	207	29.0	201	26.1	177	23.1	185	18.2	150	16.7	162	16.4	166	12.6	172	12.3	121	8.5
Taiping	154	25.2	303	34.1	315	33.1	208	18.6	206	16.0	190	15.4	199	15.1	203	12.9	199	11.3	154	8.3
KK-KKM Pahang	-	-	-	-	-	-	-	-	11	17.2	-	-	17	9.1	8	6.7	20	6.8	14	8.3
Sungai Buloh	88	22.7	89	19.0	54	12.0	63	12.3	89	15.3	58	8.4	39	5.0	37	4.5	46	6.3	43	8.2
Temerloh	204	31.9	104	23.1	79	11.6	87	10.0	81	9.4	101	9.6	79	9.3	84	8.3	60	6.5	65	7.7
Teluk Intan	111	18.1	92	13.3	72	10.9	86	14.0	109	9.9	68	6.7	78	8.4	96	7.2	112	9.3	80	7.5
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	6	15.8	9	22.5	3	6.0	30	10.8	12	7.2
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4.4	14	6.6
Alor Setar	349	31.4	310	20.3	349	18.0	294	16.0	338	19.2	343	16.3	302	12.9	214	8.2	262	10.2	93	6.0
Seremban	261	21.2	226	14.9	194	12.1	207	13.3	128	8.4	101	6.4	121	7.0	121	6.6	161	8.3	124	5.7
Batu Pahat	130	21.6	78	19.0	104	18.8	111	18.3	81	18.7	80	17.1	48	8.6	47	7.1	52	8.0	46	5.4

Muar	52	9.6	44	7.1	38	5.5	19	2.9	41	5.7	56	7.7	42	4.5	25	2.3	47	4.5	59	5.4
Kuala Lumpur	403	28.7	447	27.1	454	28.0	263	17.3	163	14.2	289	15.0	150	9.3	177	11.4	67	4.6	129	5.3
Serdang	79	13.2	113	21.7	156	23.4	109	15.4	128	12.5	122	9.6	52	5.3	33	6.2	50	5.7	91	5.1
Keningau	28	90.3	72	94.7	51	98.1	17	100.0	9	60.0	33	24.8	6	7.3	23	6.2	10	3.1	12	4.9
Kuala Pilah	175	60.3	137	42.5	81	16.8	52	12.1	44	8.9	32	6.5	26	5.8	19	3.2	24	3.7	30	4.8
Klang	368	40.7	341	33.9	120	11.3	146	10.3	64	4.0	76	5.2	107	5.4	119	5.3	89	3.8	108	4.6
Melaka	205	14.8	283	17.1	274	16.7	248	16.7	279	16.2	147	6.9	127	5.3	106	4.2	97	4.1	121	4.6
Miri	10	2.5	15	2.6	48	7.3	28	3.1	11	1.2	38	4.0	39	4.3	30	2.9	76	6.4	52	4.6
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	18	13.7	7	2.5	24	5.0	24	4.1
Sultan Ismail	49	26.5	72	27.9	83	29.3	55	19.7	63	16.8	70	11.5	58	7.0	36	4.1	38	4.7	34	4.0
Ipoh	238	11.1	208	9.5	193	10.6	250	8.5	146	4.8	126	4.6	170	6.7	135	4.3	125	3.6	146	3.9
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	1	0.5	19	4.3	28	3.9
Sungei Petani	58	8.5	70	12.5	101	12.5	204	24.1	167	18.0	191	18.7	79	7.9	82	7.2	88	6.4	50	3.7
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	2	0.6	41	11.6	10	3.6
Bintulu	38	30.6	70	27.1	83	25.0	136	34.8	14	3.7	6	1.6	6	1.7	10	5.1	8	3.1	8	3.5
Selayang	106	7.5	80	4.7	116	6.2	75	4.1	43	3.2	34	3.8	57	4.2	27	2.1	39	3.4	51	3.3
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1.4	13	1.9	18	2.9
KK-KKM Sarawak	-	-	-	-	-	-	-	-	1	1.3	12	1.4	13	1.1	4	0.4	16	1.8	16	2.8
Bukit Mertajam	265	35.7	284	35.3	350	43.6	338	36.4	277	30.5	237	23.7	262	20.7	270	19.6	46	3.2	40	2.7
Sibu	258	66.7	48	10.5	96	19.0	43	5.8	34	3.8	12	1.4	18	3.1	11	1.4	25	3.1	20	2.7
KK-KKM Static*	-	-	-	-	-	-	-	-	39	2.5	18	0.8	13	0.7	10	0.3	51	1.5	111	2.6
Umum Sarawak	186	20.8	181	15.0	101	8.9	87	5.3	33	1.9	18	0.9	17	0.8	13	0.7	27	1.5	30	2.1
Pulau Pinang	124	9.0	127	6.8	68	3.1	34	2.6	47	2.8	29	1.6	52	2.3	51	2.0	43	2.6	38	1.8
Sarikei	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	1.4	5	1.2	10	1.8
Sultanah Aminah JB	55	4.2	27	2.0	72	6.4	69	5.8	44	3.3	26	1.9	51	3.1	35	2.2	41	4.5	21	1.7
Sri Manjung	122	37.3	71	18.3	65	15.5	40	8.6	14	1.7	11	1.8	9	1.4	17	2.5	17	2.0	11	1.2
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	10	16.7	14	15.7	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	4	44.4	7	38.9	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	7.7	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1.1	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2.4	1	1.1	-	-

*PPKM-HS and KK-KKM Jitra

1.3.7 Distribution of Combined Surgery

Table 1.3.7-1: Distribution of Combined Surgery, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any types of combined surgeries	871	3.6	1082	3.8	1194	3.9	1221	3.8	1026	2.8	1028	2.6	1458	3.3	1490	2.9	1495	2.8	1499	2.7
Specific types of combined surgery																				
Vitreoretinal Surgery	402	1.6	601	2.1	672	2.2	585	1.8	536	1.4	532	1.3	893	2.0	890	1.8	893	1.6	858	1.5
Pterygium Surgery	100	0.4	99	0.3	133	0.4	111	0.3	83	0.2	115	0.3	113	0.3	135	0.3	124	0.2	95	0.2
Filtering Glaucoma Surgery	132	0.5	121	0.4	64	0.2	71	0.2	114	0.3	95	0.2	102	0.2	75	0.2	63	0.1	76	0.1
Penetrating Keratoplasty	6	0.0	2	0.0	1	0.0	3	0.0	2	0.0	2	0.0	1	0.0	0	0.0	3	0.0	2	0.0
Others	259	1.1	272	1.0	344	1.1	477	1.5	311	0.8	304	0.8	367	0.8	437	0.9	452	0.8	495	0.9

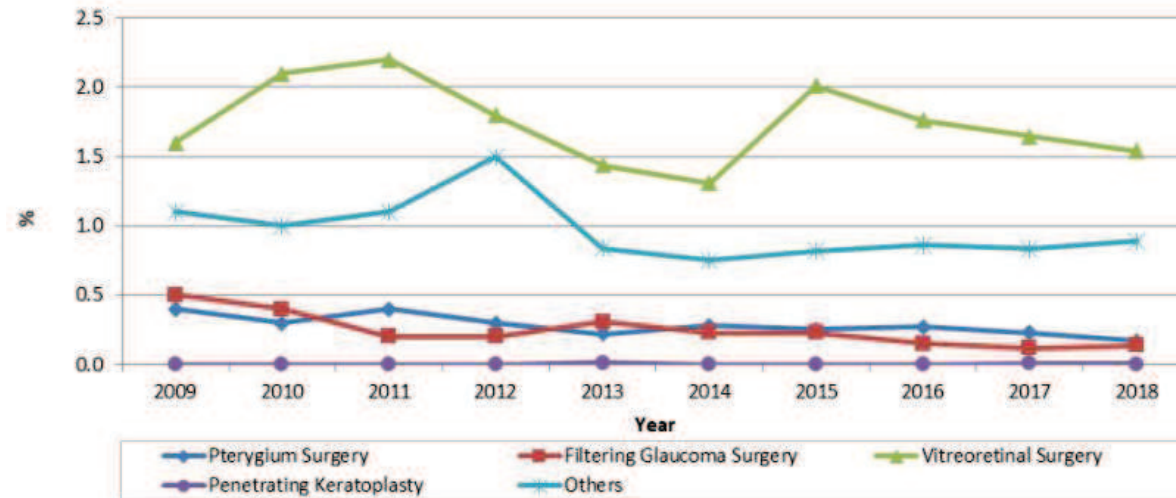


Figure 1.3.7-1: Distribution of Specific Combined Surgery, CSR 2009-2018

Table 1.3.7-2: Distribution of Combined Surgery by SDP, CSR 2017

Combined Surgery													
	All Surgeries	Any Combined Surgery		Pterygium Surgery		Filtering Surgery		Vitreo-Retinal Surgery		Penetrating Keratoplasty		Others	
	N	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	55687	1499	2.7	95	0.2	76	0.1	858	1.5	2	0.0	495	0.9
Alor Setar	1541	235	15.2	6	0.4	13	0.8	179	11.6	2	0.1	41	2.7
Selayang	1526	183	12.0	1	0.1	11	0.7	155	10.2	0	0.0	20	1.3
Likas	34	3	8.8	0	0.0	0	0.0	0	0.0	0	0.0	3	8.8
Sultanah Aminah JB	1205	103	8.5	1	0.1	0	0.0	61	5.1	0	0.0	41	3.4
Kota Bharu	1368	83	6.1	5	0.4	6	0.4	42	3.1	0	0.0	31	2.3
Queen Elizabeth KK	1800	107	5.9	12	0.7	0	0.0	74	4.1	0	0.0	24	1.3
Tawau	413	23	5.6	7	1.7	0	0.0	0	0.0	0	0.0	16	3.9
Kuala Terengganu	1428	76	5.3	13	0.9	0	0.0	38	2.7	0	0.0	27	1.9
Umum Sarawak	1444	71	4.9	0	0.0	3	0.2	53	3.7	0	0.0	15	1.0
Pulau Pinang	2164	91	4.2	0	0.0	2	0.1	83	3.8	0	0.0	6	0.3
Ipoh	3747	107	2.9	5	0.1	12	0.3	87	2.3	0	0.0	3	0.1
Kuantan	1304	35	2.7	3	0.2	2	0.2	24	1.8	0	0.0	7	0.5
Kulim	615	16	2.6	0	0.0	0	0.0	0	0.0	0	0.0	16	2.6
Miri	1122	28	2.5	10	0.9	4	0.4	0	0.0	0	0.0	14	1.2
KK-KKM Neg. Sembilan	720	16	2.2	2	0.3	0	0.0	0	0.0	0	0.0	14	1.9
Kuala Lumpur	2428	52	2.1	2	0.1	3	0.1	10	0.4	0	0.0	37	1.5
Taiping	1863	38	2.0	5	0.3	0	0.0	0	0.0	0	0.0	35	1.9
Kluang	212	4	1.9	1	0.5	0	0.0	0	0.0	0	0.0	3	1.4
Melaka	2637	48	1.8	0	0.0	16	0.6	29	1.1	0	0.0	3	0.1
Seremban	2188	32	1.5	0	0.0	1	0.0	15	0.7	0	0.0	19	0.9
Sungai Buloh	524	8	1.5	0	0.0	0	0.0	0	0.0	0	0.0	8	1.5
Serdang	1784	24	1.3	1	0.1	0	0.0	1	0.1	0	0.0	22	1.2
KK-KKM Terengganu	167	2	1.2	0	0.0	0	0.0	0	0.0	0	0.0	2	1.2
Kuala Pilah	629	7	1.1	0	0.0	0	0.0	4	0.6	0	0.0	7	1.1
Sri Manjung	909	9	1.0	1	0.1	0	0.0	0	0.0	0	0.0	8	0.9

Kuala Krai	459	4	0.9	1	0.2	0	0.0	0	0.0	0	0.0	3	0.7
Sandakan	428	4	0.9	0	0.0	0	0.0	0	0.0	0	0.0	4	0.9
Bukit Mertajam	1508	12	0.8	0	0.0	0	0.0	2	0.1	0	0.0	11	0.7
Kangar	752	6	0.8	3	0.4	0	0.0	0	0.0	0	0.0	3	0.4
Keningau	246	2	0.8	0	0.0	0	0.0	0	0.0	0	0.0	2	0.8
Klang	2330	18	0.8	0	0.0	1	0.0	0	0.0	0	0.0	17	0.7
Sibu	734	6	0.8	1	0.1	0	0.0	0	0.0	0	0.0	5	0.7
Sarikei	548	4	0.7	1	0.2	0	0.0	0	0.0	0	0.0	3	0.5
Temerloh	848	6	0.7	0	0.0	0	0.0	0	0.0	0	0.0	6	0.7
KK-KKM Sabah	590	4	0.7	3	0.5	0	0.0	0	0.0	0	0.0	1	0.2
Muar	1086	5	0.5	1	0.1	2	0.2	0	0.0	0	0.0	2	0.2
Sultan Ismail	851	4	0.5	2	0.2	0	0.0	0	0.0	0	0.0	2	0.2
KK-KKM Kelantan	195	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5
Segamat	223	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4
Putrajaya	572	2	0.3	1	0.2	0	0.0	0	0.0	0	0.0	1	0.2
Shah Alam	613	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
KK-KKM Sarawak	572	2	0.3	1	0.2	0	0.0	0	0.0	0	0.0	1	0.2
Ampang	1034	2	0.2	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1
Batu Pahat	848	2	0.2	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
KK-KKM Static*	4261	10	0.2	4	0.1	0	0.0	0	0.0	0	0.0	6	0.1
Sungei Petani	1352	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Bintulu	230	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kemaman	116	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Teluk Intan	1071	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Kedah	279	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	169	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-

*PPKM-HS and KK-KKM Jitra

1.3.8 Anaesthesia in Cataract Surgery

Table 1.3.8-1: Types of Anaesthesia, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
General Anesthesia	1578	6.5	1884	6.6	1845	6.0	2117	6.5	2229	6.0	2415	6.0	2655	6.0	2764	5.5	2770	5.1	3037	5.5
Local Anesthesia	22776	93.2	26440	92.8	28634	93.5	30215	93.1	34622	93.2	37654	92.9	41422	93.0	47349	93.5	50435	93.0	51977	93.3
Type of local anaesthesia																				
Topical	8382	36.8	13112	49.6	16825	58.8	18461	61.1	22220	64.2	25068	66.6	28458	68.7	34825	73.5	39624	78.6	41607	80.0
Intracameral	1596	7.0	2587	9.8	2933	10.2	3419	11.3	4733	13.7	6311	16.8	8938	21.6	11155	23.6	16346	32.4	20512	39.5
Combined local anaesthesia	1918	8.4	3182	12.0	4038	14.1	4375	14.5	4868	14.1	5954	15.8	7902	19.1	10461	22.1	15034	29.8	18498	35.6
Subtenon	11525	50.6	10952	41.4	10512	36.7	9849	32.6	9913	28.6	9351	24.8	9294	22.4	8973	19.0	7856	15.6	6927	13.3
Subconjunctival	437	1.9	898	3.4	771	2.7	1266	4.2	1338	3.9	1352	3.6	1253	3.0	1240	2.6	817	1.6	873	1.7
Retrobulbar	1037	4.6	864	3.3	808	2.8	667	2.2	503	1.5	436	1.2	753	1.8	623	1.3	562	1.1	567	1.1
Peribulbar	1244	5.5	881	3.3	440	1.5	279	0.9	308	0.9	474	1.3	218	0.5	203	0.4	170	0.3	165	0.3
Facial block	95	0.4	40	0.2	43	0.2	21	0.1	24	0.1	14	0.0	11	0.0	13	0.0	14	0.0	9	0.0
Others	0	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Types of sedation for patients under local anaesthesia																				
No sedation	12809	56.2	15970	60.4	18646	65.1	19379	64.1	18685	54.0	19249	51.1	22260	53.7	25926	54.8	28151	55.8	27656	53.2
Oral sedation alone	3532	15.5	3171	12.0	2852	10.0	1810	6.0	1391	4.0	1823	4.8	2879	7.0	3218	6.8	866	1.7	209	0.4
Intravenous alone	35	0.2	22	0.1	27	0.1	36	0.1	31	0.1	36	0.1	66	0.2	124	0.3	198	0.4	283	0.5
Intravenous plus oral	NA	NA	2	0.0	6	0.0	6	0.0	1	0.0	2	0.0	1	0.0	3	0.0	0	0.0	0	0.0
Intramuscular alone	52	0.2	0	0.0	3	0.0	2	0.0	18	0.1	1	0.0	0	0.0	5	0.0	8	0.0	2	0.0

*There was a significant percentage of missing values in sedation for 2007; these missing values may be in 'no sedation' category where data were not entered.

Table 1.3.8-2: Types of Anaesthesia (50 years and above), CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	22496		26336		28425		30228		34815		38305		41880		47859		51355		52657	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
General Anesthesia	950	6.5	1184	4.5	1173	4.1	1412	4.7	1545	4.4	1760	4.6	1784	4.3	1872	3.9	1833	3.6	2022	3.8
Local Anesthesia	21468	93.2	24981	94.9	27131	95.5	28689	94.9	32985	94.7	36107	94.3	39658	94.7	45502	95.1	48534	94.5	49991	94.9
Type of local anaesthesia																				
Topical	7952	37.0	12473	49.9	16003	59.0	17557	61.2	21203	64.3	24071	66.7	27349	69.0	33542	73.7	38196	78.7	40146	80.3
Intracameral	1527	7.1	2447	9.8	2818	10.4	3287	11.5	4539	13.8	6089	16.9	8585	21.6	10759	23.6	15802	32.6	19786	39.6
Combined local anaesthesia	1815	8.5	3030	12.1	3830	14.1	4135	14.4	4645	14.1	5700	15.8	7564	19.1	10049	22.1	14467	29.8	17801	35.6
Subtenon	10861	50.6	10338	41.4	9979	36.8	9340	32.6	9435	28.6	8938	24.8	8885	22.4	8653	19.0	7520	15.5	6601	13.2
Subconjunctival	412	1.9	847	3.4	721	2.7	1200	4.2	1272	3.9	1295	3.6	1202	3.0	1196	2.6	781	1.6	836	1.7
Retrobulbar	921	4.3	749	3.0	665	2.5	573	2.0	430	1.3	382	1.1	608	1.5	483	1.1	463	1.0	417	0.8
Peribulbar	1173	5.5	842	3.4	415	1.5	257	0.9	287	0.9	441	1.2	197	0.5	169	0.4	139	0.3	132	0.3
Facial block	86	0.4	39	0.2	40	0.1	20	0.1	24	0.1	13	0.0	11	0.0	13	0.0	14	0.0	9	0.0
Others	0	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Types of sedation for patients under local anaesthesia																				
No sedation	12056	56.2	15019	60.1	17616	64.9	18386	64.1	17810	54.0	18485	51.2	21347	53.8	24981	54.9	27150	55.9	26684	53.4
Oral sedation alone	3355	15.6	3055	12.2	2731	10.1	1748	6.1	1339	4.1	1755	4.9	2776	7.0	3106	6.8	834	1.7	200	0.4
Intravenous alone	29	0.1	18	0.1	23	0.1	34	0.1	28	0.1	26	0.1	62	0.2	114	0.3	186	0.4	250	0.5
Intravenous plus oral	NA	NA	2	0.0	5	0.0	6	0.0	1	0.0	1	0.0	1	0.0	3	0.0	0	0.0	0	0.0
Intramuscular alone	47	0.2	0	0.0	2	0.0	2	0.0	17	0.1	1	0.0	0	0.0	4	0.0	8	0.0	2	0.0

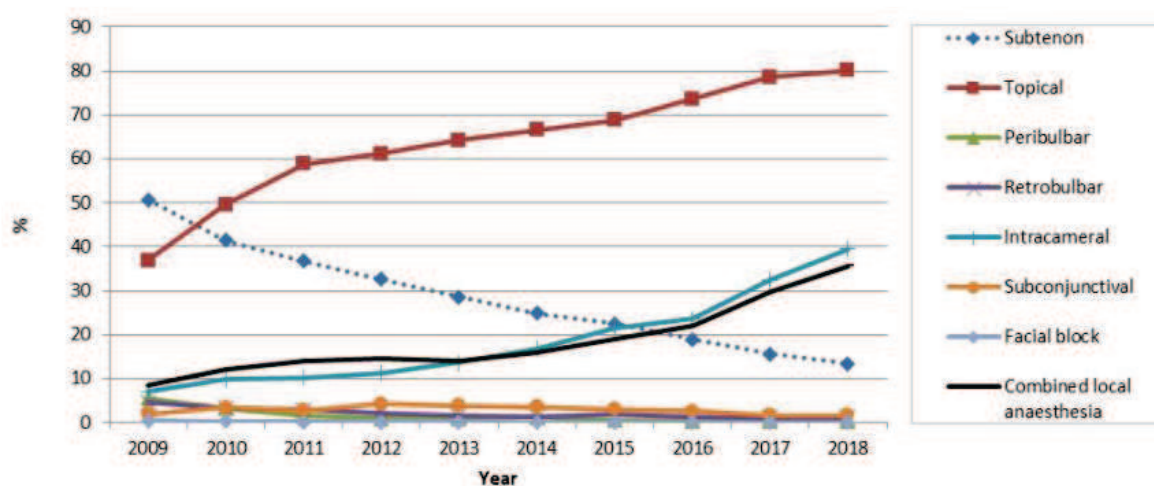


Figure 1.3.8-1: Types of Anaesthesia, CSR 2009-2018

Table 1.3.8-3: Types of Anaesthesia by SDP, CSR 2018

Types of Anaesthesia					
	N	General		Local	
		n	%	n	%
All Centres	55687	3037	5.5	51977	93.3
KK-KKM Pahang	169	0	0.0	169	100.0
KK-KKM Sarawak	572	0	0.0	572	100.0
KK-KKM Static*	4,261	3	0.1	4,257	99.9
Kangar	752	5	0.7	747	99.3
Kemaman	116	1	0.9	115	99.1
Sarikei	548	6	1.1	542	98.9
Bintulu	230	3	1.3	227	98.7
Kulim	615	8	1.3	607	98.7
KK-KKM Neg. Sembilan	720	10	1.4	709	98.5
Tawau	413	7	1.7	406	98.3
Muar	1086	21	1.9	1065	98.1
Miri	1122	23	2.0	1098	97.9
KK-KKM Sabah	590	2	0.3	577	97.8
Melaka	2,637	64	2.4	2,568	97.4
Sandakan	428	8	1.9	417	97.4
Sibu	734	21	2.9	713	97.1
Putrajaya	572	17	3.0	554	96.9
Kuala Krai	459	13	2.8	444	96.7
Pulau Pinang	2,164	68	3.1	2,092	96.7
Teluk Intan	1,071	37	3.5	1,034	96.5
Segamat	223	6	2.7	215	96.4
Batu Pahat	848	31	3.7	816	96.2
Kluang	212	7	3.3	204	96.2
Selayang	1,526	56	3.7	1,461	95.7

Seremban	2,188	64	2.9	2,095	95.7
Kuala Pilah	629	28	4.5	601	95.5
Umum Sarawak	1,444	72	5.0	1,369	94.8
Sultanah Aminah JB	1,205	56	4.6	1,136	94.3
Temerloh	848	47	5.5	798	94.1
Ampang	1034	68	6.6	963	93.1
Kuala Terengganu	1,428	91	6.4	1329	93.1
Kuala Lumpur	2,428	166	6.8	2,252	92.8
KK-KKM Kedah	279	13	4.7	259	92.8
KK-KKM Kelantan	195	0	0.0	181	92.8
Klang	2,330	154	6.6	2,159	92.7
Ipoh	3,747	282	7.5	3,465	92.5
Kota Bharu	1368	61	4.5	1260	92.1
Bukit Mertajam	1508	30	2.0	1370	90.8
Kuantan	1304	126	9.7	1175	90.1
Queen Elizabeth KK	1800	168	9.3	1620	90.0
Sungei Petani	1352	139	10.3	1213	89.7
Sri Manjung	909	99	10.9	810	89.1
Shah Alam	613	15	2.4	542	88.4
Sultan Ismail	851	97	11.4	751	88.2
KK-KKM Terengganu	167	1	0.6	147	88.0
Taiping	1,863	291	15.6	1,572	84.4
Sungai Buloh	524	85	16.2	433	82.6
Alor Setar	1541	290	18.8	1248	81.0
Serdang	1,784	142	8.0	1430	80.2
Keningau	246	2	0.8	190	77.2
Likas	34	33	97.1	0	0.0
Pusat Perubatan UKM	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-

Table 1.3.8-4: Types of Anaesthesia by SDP (50 years and above), CSR 2018

Types of Anaesthesia					
	N	General		Local	
		n	%	n	%
All Centres	52,657	2,022	3.8	49,991	94.9
Kangar	731	0	0.0	731	100.0
KK-KKM Pahang	168	0	0.0	168	100.0
KK-KKM Sarawak	560	0	0.0	560	100.0
KK-KKM Static*	4,124	3	0.1	4,120	99.9
Sarikei	529	2	0.4	527	99.6
Kulim	589	5	0.8	584	99.2
Muar	1050	8	0.8	1042	99.2
Tawau	372	3	0.8	369	99.2
Kemaman	106	1	0.9	105	99.1

Miri	1062	9	0.8	1052	99.1
Kuala Krai	437	3	0.7	432	98.9
Melaka	2,508	26	1.0	2,477	98.8
Sandakan	397	2	0.5	392	98.7
Bintulu	207	3	1.4	204	98.6
KK-KKM Neg. Sembilan	705	9	1.3	695	98.6
Kluang	202	2	1.0	199	98.5
Teluk Intan	1,010	15	1.5	995	98.5
Sibu	701	11	1.6	690	98.4
KK-KKM Sabah	560	1	0.2	551	98.4
Batu Pahat	807	14	1.7	792	98.1
Putrajaya	531	10	1.9	520	97.9
Pulau Pinang	2,066	52	2.5	2,010	97.3
Selayang	1,389	30	2.2	1,351	97.3
Umum Sarawak	1,344	40	3.0	1,302	96.9
Seremban	2,085	38	1.8	2,019	96.8
Segamat	213	5	2.3	206	96.7
Sultanah Aminah JB	1,090	28	2.6	1,049	96.2
Kuala Terengganu	1323	43	3.3	1272	96.1
Kuala Pilah	609	25	4.1	584	95.9
Temerloh	803	30	3.7	770	95.9
Klang	2,176	85	3.9	2,075	95.4
Kuala Lumpur	2,260	99	4.4	2151	95.2
Ampang	979	45	4.6	931	95.1
Kota Bharu	1270	21	1.7	1203	94.7
Ipoh	3,587	225	6.3	3,362	93.7
KK-KKM Kelantan	193	0	0.0	180	93.3
KK-KKM Kedah	272	12	4.4	253	93.0
Sultan Ismail	792	57	7.2	732	92.4
Bukit Mertajam	1444	14	1.0	1328	92.0
Kuantan	1240	97	7.8	1140	91.9
Queen Elizabeth KK	1666	127	7.6	1527	91.7
Sungei Petani	1296	109	8.4	1187	91.6
Sri Manjung	868	75	8.6	793	91.4
Shah Alam	582	10	1.7	518	89.0
KK-KKM Terengganu	160	1	0.6	140	87.5
Taiping	1,803	258	14.3	1,545	85.7
Alor Setar	1,385	199	14.4	1,183	85.4
Sungai Buloh	484	69	14.3	409	84.5
Serdang	1690	100	5.9	1385	82.0
Keningau	232	1	0.4	181	78.0
Likas	0	0	0.0	0	0.0
Pusat Perubatan UKM	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-

Table 1.3.8-5: Types of Local Anaesthesia by SDP, CSR 2018

Local Anaesthesia																	
	All	Retrobulbar		Peribulbar		Subtenon		Sub-conjunctival		Facial block		Topical		Intracameral		Combined	
	N	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	51,977	567	1.1	165	0.3	6,927	13.3	873	1.7	9	0.0	41,607	80.0	20,512	39.5	18,498	35.6
Sri Manjung	810	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	809	99.9	0	0.0	0	0.0
Sibu	713	0	0.0	0	0.0	17	2.4	1	0.1	0	0.0	711	99.7	450	63.1	456	64.0
Kulim	607	0	0.0	0	0.0	26	4.3	0	0.0	0	0.0	604	99.5	492	81.1	503	82.9
Sarikei	542	0	0.0	0	0.0	2	0.4	1	0.2	0	0.0	539	99.4	0	0.0	1	0.2
Melaka	2,568	11	0.4	0	0.0	66	2.6	0	0.0	1	0.0	2,539	98.9	18	0.7	75	2.9
Muar	1065	0	0.0	0	0.0	82	7.7	0	0.0	0	0.0	1,048	98.4	636	59.7	695	65.3
KK-KKM Sarawak	572	0	0.0	0	0.0	38	6.6	0	0.0	0	0.0	563	98.4	83	14.5	116	20.3
Queen Elizabeth KK	1620	0	0.0	58	3.6	294	18.1	3	0.2	1	0.1	1573	97.1	1236	76.3	1442	89.0
Pulau Pinang	2,092	81	3.9	0	0.0	31	1.5	0	0.0	0	0.0	2,016	96.4	26	1.2	66	3.2
Ipoh	3,465	71	2.0	8	0.2	280	8.1	0	0.0	0	0.0	3,326	96.0	3,192	92.1	3,220	92.9
Sungei Petani	1213	0	0.0	0	0.0	66	5.4	0	0.0	0	0.0	1,155	95.2	3	0.2	12	1.0
KK-KKM Neg. Sembilan	709	0	0.0	1	0.1	98	13.8	1	0.1	0	0.0	675	95.2	610	86.0	602	84.9
Keningau	190	0	0.0	0	0.0	2	1.1	0	0.0	0	0.0	180	94.7	3	1.6	5	2.6
Sandakan	417	0	0.0	0	0.0	67	16.1	0	0.0	0	0.0	390	93.5	7	1.7	51	12.2
Seremban	2,095	0	0.0	1	0.0	165	7.9	4	0.2	0	0.0	1956	93.4	486	23.2	541	25.8
Taiping	1,572	0	0.0	0	0.0	123	7.8	0	0.0	0	0.0	1468	93.4	0	0.0	19	1.2
KK-KKM Terengganu	147	0	0.0	0	0.0	7	4.8	0	0.0	0	0.0	137	93.2	0	0.0	2	1.4
Klang	2,159	1	0.0	17	0.8	190	8.8	4	0.2	0	0.0	2,002	92.7	926	42.9	964	44.7
Umum Sarawak	1,369	28	2.0	11	0.8	30	2.2	1	0.1	0	0.0	1,269	92.7	10	0.7	24	1.8
Kemaman	115	1	0.9	0	0.0	43	37.4	0	0.0	0	0.0	106	92.2	0	0.0	36	31.3
Kuala Terengganu	1329	0	0.0	0	0.0	129	9.7	3	0.2	1	0.1	1221	91.9	42	3.2	71	5.3
Miri	1098	0	0.0	0	0.0	130	11.8	0	0.0	0	0.0	1001	91.2	374	34.1	397	36.2
Sultan Ismail	751	0	0.0	0	0.0	9	1.2	101	13.4	0	0.0	683	90.9	515	68.6	548	73.0

KK-KKM Static*	4,257	2	0.0	0	0.0	120	2.8	2	0.0	0	0.0	3,822	89.8	1,979	46.5	1,689	39.7
Kuala Krai	444	0	0.0	0	0.0	90	20.3	0	0.0	0	0.0	387	87.2	1	0.2	38	8.6
KK-KKM Kedah	259	0	0.0	0	0.0	32	12.4	0	0.0	0	0.0	225	86.9	23	8.9	21	8.1
Shah Alam	542	0	0.0	0	0.0	13	2.4	0	0.0	0	0.0	466	86.0	318	58.7	315	58.1
Tawau	406	0	0.0	0	0.0	162	39.9	3	0.7	0	0.0	344	84.7	337	83.0	346	85.2
Ampang	963	0	0.0	0	0.0	68	7.1	0	0.0	0	0.0	813	84.4	820	85.2	737	76.5
KK-KKM Kelantan	181	0	0.0	0	0.0	52	28.7	1	0.6	0	0.0	147	81.2	58	32.0	77	42.5
Selayang	1,461	169	11.6	13	0.9	356	24.4	6	0.4	0	0.0	1185	81.1	367	25.1	630	43.1
Kuala Pilah	601	0	0.0	1	0.2	151	25.1	0	0.0	0	0.0	433	72.0	423	70.4	344	57.2
Sungai Buloh	433	0	0.0	0	0.0	21	4.8	4	0.9	0	0.0	310	71.6	242	55.9	155	35.8
Sultanah Aminah JB	1,136	51	4.5	10	0.9	208	18.3	214	18.8	0	0.0	796	70.1	583	51.3	676	59.5
Alor Setar	1,248	89	7.1	11	0.9	76	6.1	2	0.2	0	0.0	864	69.2	429	34.4	246	19.7
Bukit Mertajam	1370	1	0.1	1	0.1	33	2.4	0	0.0	0	0.0	927	67.7	827	60.4	504	36.8
Temerloh	798	0	0.0	0	0.0	398	49.9	7	0.9	0	0.0	512	64.2	261	32.7	378	47.4
Kota Bharu	1260	29	2.3	15	1.2	726	57.6	22	1.7	2	0.2	789	62.6	313	24.8	628	49.8
KK-KKM Pahang	169	0	0.0	0	0.0	17	10.1	0	0.0	0	0.0	104	61.5	49	29.0	1	0.6
Serdang	1430	6	0.4	0	0.0	486	34.0	3	0.2	1	0.1	871	60.9	9	0.6	111	7.8
Kuala Lumpur	2,252	4	0.2	16	0.7	154	6.8	1	0.0	1	0.0	1304	57.9	1,528	67.9	747	33.2
Kluang	204	0	0.0	0	0.0	37	18.1	12	5.9	0	0.0	114	55.9	171	83.8	118	57.8
Bintulu	227	0	0.0	0	0.0	44	19.4	0	0.0	1	0.4	110	48.5	189	83.3	105	46.3
Kuantan	1175	18	1.5	1	0.1	418	35.6	1	0.1	0	0.0	279	23.7	517	44.0	68	5.8
KK-KKM Sabah	577		0.0	1	0.2	36	6.2	1	0.2	0	0.0	557	23.7	398	69.0	413	71.6
Kangar	747	0	0.0	0	0.0	584	78.2	0	0.0	0	0.0	168	22.5	0	0.0	6	0.8
Batu Pahat	816	0	0.0	0	0.0	89	10.9	470	57.6	1	0.1	81	9.9	435	53.3	264	32.4
Putrajaya	554	0	0.0	0	0.0	71	12.8	5	0.9	0	0.0	26	4.7	470	84.8	30	5.4
Teluk Intan	1,034	0	0.0	0	0.0	463	44.8	0	0.0	0	0.0	2	0.2	571	55.2	3	0.3
Likas	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	215	5	2.3	0	0.0	127	59.1	0	0.0	0	0.0	0	0.0	85	39.5	2	0.9
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1.3.8-6: Types of Local Anaesthesia by SDP (50 years and above), CSR 2018

Local Anaesthesia																	
	All	Retrobulbar		Peribulbar		Subtenon		Sub-conjunctival		Facial block		Topical		Intracameral		Combined	
	N	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	49,991	417	0.8	132	0.3	6,601	13.2	836	1.7	9	0.0	40,146	80.3	19,786	39.6	17,801	35.6
Sri Manjung	793	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	792	99.9	0	0.0	0	0.0
Sibu	690	0	0.0	0	0.0	16	2.3	1	0.1	0	0.0	688	99.7	437	63.3	442	64.1
Kulim	584	0	0.0	0	0.0	25	4.3	0	0.0	0	0.0	581	99.5	472	80.8	483	82.7
Sarikei	527	0	0.0	0	0.0	2	0.4	1	0.2	0	0.0	524	99.4	0	0.0	1	0.2
Melaka	2,477	6	0.2	0	0.0	64	2.6	0	0.0	1	0.0	2,454	99.1	16	0.6	71	2.9
Muar	1042	0	0.0	0	0.0	79	7.6	0	0.0	0	0.0	1025	98.4	625	60.0	681	65.4
KK-KKM Sarawak	560	0	0.0	0	0.0	37	6.6	0	0.0	0	0.0	551	98.4	78	13.9	110	19.6
Pulau Pinang	2,010	50	2.5	0	0.0	28	1.4	0	0.0	0	0.0	1,959	97.5	24	1.2	55	2.7
Queen Elizabeth KK	1,527	0	0.0	37	2.4	282	18.5	3	0.2	1	0.1	1,487	97.4	1,171	76.7	1,362	89.2
KK-KKM Sabah	551	0	0.0	1	0.2	32	5.8	1	0.2	0	0.0	533	96.7	381	69.1	394	71.5
Ipoh	3,362	49	1.5	6	0.2	266	7.9	0	0.0	0	0.0	3,240	96.4	3,112	92.6	3,137	93.3
KK-KKM Neg. Sembilan	695	0	0.0	1	0.1	93	13.4	1	0.1	0	0.0	663	95.4	601	86.5	593	85.3
Sungei Petani	1,187	0	0.0	0	0.0	64	5.4	0	0.0	0	0.0	1,131	95.3	3	0.3	12	1.0
Keningau	181	0	0.0	0	0.0	2	1.1	0	0.0	0	0.0	172	95.0	2	1.1	4	2.2
Umum Sarawak	1,302	16	1.2	10	0.8	27	2.1	1	0.1	0	0.0	1,219	93.6	10	0.8	23	1.8
Sandakan	392	0	0.0	0	0.0	61	15.6	0	0.0	0	0.0	366	93.4	7	1.8	46	11.7
Seremban	2,019	0	0.0	1	0.0	153	7.6	4	0.2	0	0.0	1886	93.4	471	23.3	522	25.9
Taiping	1,545	0	0.0	0	0.0	120	7.8	0	0.0	0	0.0	1,443	93.4	0	0.0	18	1.2
KK-KKM Terengganu	140	0	0.0	0	0.0	7	5.0	0	0.0	0	0.0	130	92.9	0	0.0	2	1.4
Klang	2,075	1	0.0	17	0.8	181	8.7	4	0.2	0	0.0	1,924	92.7	889	42.8	927	44.7
Kuala Terengganu	1,272	0	0.0	0	0.0	121	9.5	3	0.2	1	0.1	1,171	92.1	39	3.1	66	5.2
Kemaman	105	1	1.0	0	0.0	40	38.1	0	0.0	0	0.0	96	91.4	0	0.0	33	31.4

Miri	1,052	0	0.0	0	0.0	122	11.6	0	0.0	0	0.0	962	91.4	359	34.1	380	36.1
Sultan Ismail	732	0	0.0	0	0.0	9	1.2	96	13.1	0	0.0	665	90.8	507	69.3	536	73.2
KK-KKM Static*	4,120	2	0.0	0	0.0	114	2.8	2	0.0	0	0.0	3,696	89.7	1,909	46.3	1,622	39.4
KK-KKM Kedah	253	0	0.0	0	0.0	31	12.3	0	0.0	0	0.0	220	87.0	23	9.1	21	8.3
Kuala Krai	432	0	0.0	0	0.0	89	20.6	0	0.0	0	0.0	375	86.8	1	0.2	37	8.6
Shah Alam	518	0	0.0	0	0.0	12	2.3	0	0.0	0	0.0	442	85.3	302	58.3	299	57.7
Tawau	369	0	0.0	0	0.0	137	37.1	1	0.3	0	0.0	314	85.1	309	83.7	315	85.4
Ampang	931	0	0.0	0	0.0	62	6.7	0	0.0	0	0.0	790	84.9	796	85.5	716	76.9
Selayang	1,351	120	8.9	11	0.8	339	25.1	4	0.3	0	0.0	1128	83.5	357	26.4	603	44.6
KK-KKM Kelantan	180	0	0.0	0	0.0	52	28.9	1	0.6	0	0.0	146	81.1	58	32.2	77	42.8
Kuala Pilah	584	0	0.0	1	0.2	146	25.0	0	0.0	0	0.0	422	72.3	411	70.4	335	57.4
Sungai Buloh	409	0	0.0	0	0.0	20	4.9	3	0.7	0	0.0	292	71.4	233	57.0	148	36.2
Sultanah Aminah JB	1,049	39	3.7	7	0.7	185	17.6	199	19.0	0	0.0	743	70.8	548	52.2	630	60.1
Alor Setar	1,183	76	6.4	9	0.8	73	6.2	2	0.2	0	0.0	827	69.9	414	35.0	241	20.4
Bukit Mertajam	1,328	1	0.1	1	0.1	33	2.5	0	0.0	0	0.0	899	67.7	801	60.3	487	36.7
Temerloh	770	0	0.0	0	0.0	384	49.9	7	0.9	0	0.0	493	64.0	256	33.2	368	47.8
Kota Bharu	1,203	28	2.3	15	1.2	697	57.9	22	1.8	2	0.2	751	62.4	298	24.8	602	50.0
KK-KKM Pahang	168	0	0.0	0	0.0	17	10.1	0	0.0	0	0.0	103	61.3	49	29.2	1	0.6
Serdang	1385	4	0.3	0	0.0	472	34.1	3	0.2	1	0.1	840	60.6	9	0.6	105	7.6
Kuala Lumpur	2,151	3	0.1	14	0.7	145	6.7	1	0.0	1	0.0	1,248	58.0	1,466	68.2	717	33.3
Kluang	199	0	0.0	0	0.0	36	18.1	11	5.5	0	0.0	111	55.8	168	84.4	115	57.8
Bintulu	204	0	0.0	0	0.0	37	18.1	0	0.0	1	0.5	102	50.0	170	83.3	97	47.5
Kuantan	1,140	16	1.4	1	0.1	405	35.5	1	0.1	0	0.0	273	23.9	502	44.0	67	5.9
Kangar	731	0	0.0	0	0.0	573	78.4	0	0.0	0	0.0	163	22.3	0	0.0	6	0.8
Batu Pahat	792	0	0.0	0	0.0	84	10.6	459	58.0	1	0.1	78	9.8	424	53.5	259	32.7
Putrajaya	520	0	0.0	0	0.0	64	12.3	5	1.0	0	0.0	26	5.0	443	85.2	30	5.8
Teluk Intan	995	0	0.0	0	0.0	440	44.2	0	0.0	0	0.0	2	0.2	555	55.8	3	0.3
Likas	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	206	5	2.4	0	0.0	123	59.7	0	0.0	0	0.0	0	0.0	80	38.8	2	1.0
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1.3.8-7: Types of Local Anaesthesia by SDP (Excluding Combined Surgery), CSR 2018

Local Anesthesia																	
	All	Retrobulbar		Peribulbar		Subtenon		Sub-conjunctival		Facial block		Topical		Intracameral		Combined	
	N	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	50,824	95	0.2	62	0.1	6,646	13.1	851	1.7	8	0.0	41,034	80.7	20,299	39.9	18,069	35.6
Sri Manjung	804	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	803	99.9	0	0.0	0	0.0
Sibu	707	0	0.0	0	0.0	17	2.4	0	0.0	0	0.0	705	99.7	447	63.2	452	63.9
Kulim	591	0	0.0	0	0.0	18	3.0	0	0.0	0	0.0	588	99.5	480	81.2	488	82.6
Sarikei	538	0	0.0	0	0.0	2	0.4	1	0.2	0	0.0	535	99.4	0	0.0	1	0.2
Melaka	2,524	0	0.0	0	0.0	61	2.4	0	0.0	1	0.0	2,503	99.2	18	0.7	67	2.7
Pulau Pinang	2,016	10	0.5	0	0.0	30	1.5	0	0.0	0	0.0	1,993	98.9	25	1.2	46	2.3
Muar	1,060	0	0.0	0	0.0	80	7.5	0	0.0	0	0.0	1,044	98.5	633	59.7	691	65.2
KK-KKM Sarawak	570	0	0.0	0	0.0	37	6.5	0	0.0	0	0.0	561	98.4	81	14.2	114	20.0
Queen Elizabeth KK	1,534	0	0.0	0	0.0	283	18.4	3	0.2	1	0.1	1,501	97.8	1,202	78.4	1,370	89.3
Ipoh	3,378	9	0.3	1	0.0	273	8.1	0	0.0	0	0.0	3,287	97.3	3,166	93.7	3,178	94.1
KK-KKM Sabah	573	0	0.0	1	0.2	35	6.1	1	0.2	0	0.0	554	96.7	396	69.1	411	71.7
Umum Sarawak	1,311	1	0.1	1	0.1	14	1.1	0	0.0	0	0.0	1,258	96.0	10	0.8	18	1.4
Sungei Petani	1,213	0	0.0	0	0.0	66	5.4	0	0.0	0	0.0	1,155	95.2	3	0.2	12	1.0
KK-KKM Neg. Sembilan	693	0	0.0	1	0.1	91	13.1	1	0.1	0	0.0	660	95.2	598	86.3	589	85.0
Keningau	189	0	0.0	0	0.0	2	1.1	0	0.0	0	0.0	179	94.7	3	1.6	5	2.6
Taiping	1,543	0	0.0	0	0.0	101	6.5	0	0.0	0	0.0	1,455	94.3	0	0.0	13	0.8
Sandakan	413	0	0.0	0	0.0	63	15.3	0	0.0	0	0.0	387	93.7	7	1.7	48	11.6
Seremban	2,079	0	0.0	0	0.0	157	7.6	4	0.2	0	0.0	1,943	93.5	482	23.2	532	25.6
Kuala Terengganu	1,285	0	0.0	0	0.0	104	8.1	2	0.2	1	0.1	1,196	93.1	40	3.1	63	4.9
KK-KKM Terengganu	145	0	0.0	0	0.0	7	4.8	0	0.0	0	0.0	135	93.1	0	0.0	2	1.4
Klang	2,151	1	0.0	17	0.8	185	8.6	4	0.2	0	0.0	1,995	92.7	921	42.8	958	44.5
Kemaman	115	1	0.9	0	0.0	43	37.4	0	0.0	0	0.0	106	92.2	0	0.0	36	31.3
Miri	1,074	0	0.0	0	0.0	124	11.5	0	0.0	0	0.0	981	91.3	368	34.3	391	36.4
Sultan Ismail	748	0	0.0	0	0.0	8	1.1	100	13.4	0	0.0	680	90.9	512	68.4	545	72.9
KK-KKM Static*	4,248	2	0.0	0	0.0	114	2.7	2	0.0	0	0.0	3,817	89.9	1,975	46.5	1,683	39.6

Selayang	1,293	26	2.0	12	0.9	348	26.9	4	0.3	0	0.0	1,133	87.6	366	28.3	591	45.7
Kuala Krai	442	0	0.0	0	0.0	89	20.1	0	0.0	0	0.0	386	87.3	1	0.2	38	8.6
KK-KKM Kedah	259	0	0.0	0	0.0	32	12.4	0	0.0	0	0.0	225	86.9	23	8.9	21	8.1
Shah Alam	541	0	0.0	0	0.0	13	2.4	0	0.0	0	0.0	465	86.0	318	58.8	315	58.2
Tawau	383	0	0.0	0	0.0	148	38.6	2	0.5	0	0.0	328	85.6	322	84.1	331	86.4
Ampang	961	0	0.0	0	0.0	68	7.1	0	0.0	0	0.0	811	84.4	818	85.1	735	76.5
KK-KKM Kelantan	180	0	0.0	0	0.0	52	28.9	1	0.6	0	0.0	146	81.1	58	32.2	77	42.8
Alor Setar	1,123	11	1.0	8	0.7	68	6.1	1	0.1	0	0.0	834	74.3	416	37.0	238	21.2
Kuala Pilah	594	0	0.0	1	0.2	145	24.4	0	0.0	0	0.0	428	72.1	417	70.2	339	57.1
Sultanah Aminah JB	1,041	7	0.7	3	0.3	184	17.7	205	19.7	0	0.0	749	72.0	563	54.1	631	60.6
Sungai Buloh	427	0	0.0	0	0.0	18	4.2	4	0.9	0	0.0	306	71.7	238	55.7	152	35.6
Bukit Mertajam	1,358	1	0.1	1	0.1	26	1.9	0	0.0	0	0.0	916	67.5	822	60.5	496	36.5
Temerloh	793	0	0.0	0	0.0	394	49.7	6	0.8	0	0.0	509	64.2	260	32.8	375	47.3
Kota Bharu	1,195	7	0.6	8	0.7	693	58.0	21	1.8	1	0.1	748	62.6	309	25.9	586	49.0
KK-KKM Pahang	169	0	0.0	0	0.0	17	10.1	0	0.0	0	0.0	104	61.5	49	29.0	1	0.6
Serdang	1,414	6	0.4	0	0.0	476	33.7	3	0.2	1	0.1	864	61.1	9	0.6	109	7.7
Kuala Lumpur	2,213	4	0.2	8	0.4	141	6.4	1	0.0	1	0.0	1,284	58.0	1,512	68.3	731	33.0
Kluang	200	0	0.0	0	0.0	33	16.5	11	5.5	0	0.0	114	57.0	170	85.0	116	58.0
Bintulu	227	0	0.0	0	0.0	44	19.4	0	0.0	1	0.4	110	48.5	189	83.3	105	46.3
Kuantan	1,154	4	0.3	0	0.0	415	36.0	0	0.0	0	0.0	277	24.0	515	44.6	66	5.7
Kangar	741	0	0.0	0	0.0	578	78.0	0	0.0	0	0.0	167	22.5	0	0.0	5	0.7
Batu Pahat	814	0	0.0	0	0.0	89	10.9	469	57.6	1	0.1	81	10.0	433	53.2	263	32.3
Putrajaya	552	0	0.0	0	0.0	70	12.7	5	0.9	0	0.0	26	4.7	469	85.0	30	5.4
Teluk Intan	1,034	0	0.0	0	0.0	463	44.8	0	0.0	0	0.0	2	0.2	571	55.2	3	0.3
Likas	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	214	5	2.3	0	0.0	127	59.3	0	0.0	0	0.0	0	0.0	84	39.3	2	0.9
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1.3.8-8: Types of Local Anaesthesia by SDP (50 years and above, Excluding Combined Surgery), CSR 2018

Local Anesthesia																	
	All	Retrobulbar		Peribulbar		Subtenon		Sub-conjunctival		Facial block		Topical		Intracameral		Combined	
	N	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	49,087	80	0.2	57	0.1	6,359	13.0	814	1.7	8	0.0	39,680	80.8	19,609	39.9	17,447	35.5
Sri Manjung	787	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	786	99.9	0	0.0	0	0.0
Sibu	685	0	0.0	0	0.0	16	2.3	0	0.0	0	0.0	683	99.7	435	63.5	439	64.1
Kulim	569	0	0.0	0	0.0	18	3.2	0	0.0	0	0.0	566	99.5	461	81.0	469	82.4
Sarikei	523	0	0.0	0	0.0	2	0.4	1	0.2	0	0.0	520	99.4	0	0.0	1	0.2
Melaka	2,448	0	0.0	0	0.0	60	2.5	0	0.0	1	0.0	2,429	99.2	16	0.7	65	2.7
Pulau Pinang	1,963	7	0.4	0	0.0	27	1.4	0	0.0	0	0.0	1,944	99.0	23	1.2	42	2.1
Muar	1,037	0	0.0	0	0.0	77	7.4	0	0.0	0	0.0	1,021	98.5	622	60.0	677	65.3
KK-KKM Sarawak	558	0	0.0	0	0.0	36	6.5	0	0.0	0	0.0	549	98.4	76	13.6	108	19.4
Queen Elizabeth KK	1,467	0	0.0	0	0.0	272	18.5	3	0.2	1	0.1	1,435	97.8	1,148	78.3	1,310	89.3
Ipoh	3,297	6	0.2	0	0.0	260	7.9	0	0.0	0	0.0	3,213	97.5	3,094	93.8	3,107	94.2
KK-KKM Sabah	547	0	0.0	1	0.2	31	5.7	1	0.2	0	0.0	530	96.9	379	69.3	392	71.7
Umum Sarawak	1,260	1	0.1	1	0.1	14	1.1	0	0.0	0	0.0	1,209	96.0	10	0.8	18	1.4
KK-KKM Neg. Sembilan	679	0	0.0	1	0.1	86	12.7	1	0.1	0	0.0	648	95.4	589	86.7	580	85.4
Sungei Petani	1,187	0	0.0	0	0.0	64	5.4	0	0.0	0	0.0	1,131	95.3	3	0.3	12	1.0
Keningau	180	0	0.0	0	0.0	2	1.1	0	0.0	0	0.0	171	95.0	2	1.1	4	2.2
Taiping	1,517	0	0.0	0	0.0	98	6.5	0	0.0	0	0.0	1,431	94.3	0	0.0	12	0.8
Sandakan	390	0	0.0	0	0.0	59	15.1	0	0.0	0	0.0	365	93.6	7	1.8	45	11.5
Seremban	2,004	0	0.0	0	0.0	145	7.2	4	0.2	0	0.0	1,874	93.5	467	23.3	513	25.6
Kuala Terengganu	1,234	0	0.0	0	0.0	102	8.3	2	0.2	1	0.1	1,147	92.9	37	3.0	59	4.8
KK-KKM Terengganu	138	0	0.0	0	0.0	7	5.1	0	0.0	0	0.0	128	92.8	0	0.0	2	1.4
Klang	2,068	1	0.0	17	0.8	176	8.5	4	0.2	0	0.0	1,918	92.7	884	42.7	921	44.5
Miri	1,031	0	0.0	0	0.0	117	11.3	0	0.0	0	0.0	944	91.6	353	34.2	374	36.3
Kemaman	105	1	1.0	0	0.0	40	38.1	0	0.0	0	0.0	96	91.4	0	0.0	33	31.4
Sultan Ismail	729	0	0.0	0	0.0	8	1.1	95	13.0	0	0.0	662	90.8	504	69.1	533	73.1
KK-KKM Static*	4,112	2	0.0	0	0.0	108	2.6	2	0.0	0	0.0	3,692	89.8	1,906	46.4	1,617	39.3

Selayang	1,229	20	1.6	10	0.8	332	27.0	2	0.2	0	0.0	1,086	88.4	356	29.0	572	46.5
Kuala Krai	430	0	0.0	0	0.0	88	20.5	0	0.0	0	0.0	374	87.0	1	0.2	37	8.6
KK-KKM Kedah	253	0	0.0	0	0.0	31	12.3	0	0.0	0	0.0	220	87.0	23	9.1	21	8.3
Tawau	351	0	0.0	0	0.0	127	36.2	0	0.0	0	0.0	301	85.8	297	84.6	303	86.3
Shah Alam	518	0	0.0	0	0.0	12	2.3	0	0.0	0	0.0	442	85.3	302	58.3	299	57.7
Ampang	929	0	0.0	0	0.0	62	6.7	0	0.0	0	0.0	788	84.8	794	85.5	714	76.9
KK-KKM Kelantan	179	0	0.0	0	0.0	52	29.1	1	0.6	0	0.0	145	81.0	58	32.4	77	43.0
Alor Setar	1,082	11	1.0	6	0.6	66	6.1	1	0.1	0	0.0	806	74.5	403	37.2	234	21.6
Kuala Pilah	577	0	0.0	1	0.2	140	24.3	0	0.0	0	0.0	417	72.3	405	70.2	330	57.2
Sultanah Aminah JB	978	7	0.7	3	0.3	168	17.2	190	19.4	0	0.0	706	72.2	532	54.4	594	60.7
Sungai Buloh	404	0	0.0	0	0.0	17	4.2	3	0.7	0	0.0	289	71.5	229	56.7	145	35.9
Bukit Mertajam	1,317	1	0.1	1	0.1	26	2.0	0	0.0	0	0.0	889	67.5	796	60.4	479	36.4
Temerloh	765	0	0.0	0	0.0	380	49.7	6	0.8	0	0.0	490	64.1	255	33.3	365	47.7
Kota Bharu	1,145	7	0.6	8	0.7	669	58.4	21	1.8	1	0.1	714	62.4	294	25.7	563	49.2
KK-KKM Pahang	168	0	0.0	0	0.0	17	10.1	0	0.0	0	0.0	103	61.3	49	29.2	1	0.6
Serdang	1,370	4	0.3	0	0.0	463	33.8	3	0.2	1	0.1	833	60.8	9	0.7	103	7.5
Kuala Lumpur	2,122	3	0.1	8	0.4	136	6.4	1	0.0	1	0.0	1,233	58.1	1,453	68.5	704	33.2
Kluang	195	0	0.0	0	0.0	32	16.4	10	5.1	0	0.0	111	56.9	167	85.6	113	57.9
Bintulu	204	0	0.0	0	0.0	37	18.1	0	0.0	1	0.5	102	50.0	170	83.3	97	47.5
Kuantan	1,122	4	0.4	0	0.0	402	35.8	0	0.0	0	0.0	271	24.2	501	44.7	65	5.8
Kangar	725	0	0.0	0	0.0	567	78.2	0	0.0	0	0.0	162	22.3	0	0.0	5	0.7
Batu Pahat	790	0	0.0	0	0.0	84	10.6	458	58.0	1	0.1	78	9.9	422	53.4	258	32.7
Putrajaya	518	0	0.0	0	0.0	63	12.2	5	1.0	0	0.0	26	5.0	442	85.3	30	5.8
Teluk Intan	995	0	0.0	0	0.0	440	44.2	0	0.0	0	0.0	2	0.2	555	55.8	3	0.3
Likas	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	206	5	2.4	0	0.0	123	59.7	0	0.0	0	0.0	0	0.0	80	38.8	2	1.0
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1.3.8-9: Subtenon Anaesthesia by SDP, CSR 2009-2018

Years	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	1152 5	50.6	1095 2	41.4	1051 2	36.7	984 9	32.6	9,91 3	28.6	9,35 1	24.8	9,29 4	22.4	8,97 3	19.0	7,85 6	15.6	6,92 7	13.3
Kangar	383	98.5	383	98.7	397	100. 0	442	99.1	457	98.5	414	99.0	559	98.9	628	99.2	526	72.0	584	78.2
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	20.7	94	24.2	127	59.1
Kota Bharu	837	98.0	885	97.6	884	99.0	495	97.6	629	98.6	273	99.3	784	90.2	884	83.6	930	70.0	726	57.6
Temerloh	425	67.8	410	96.7	611	94.0	586	69.9	403	47.5	491	48.2	378	45.6	364	38.2	364	41.2	398	49.9
Teluk Intan	397	66.4	386	58.2	472	73.2	586	99.2	1,06 3	98.9	986	99.1	903	99.2	953	73.0	783	66.9	463	44.8
Tawau	287	99.7	382	99.5	553	100. 0	615	99.2	380	78.8	406	77.2	154	25.6	109	16.4	80	27.6	162	39.9
Kemaman	-	-	-	-	-	-	-	-	8	17.4	24	33.8	1	33.3	9	34.6	52	32.9	43	37.4
Kuantan	143	63.8	358	78.9	456	77.2	345	63.3	366	76.3	399	86.0	769	80.9	670	61.1	679	54.3	418	35.6
Serdang	396	70.7	375	80.5	432	70.7	414	60.6	339	36.1	362	31.0	247	26.2	228	48.9	175	34.0	486	34.0
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	138	75.4	0	0.0	39	62.9	88	63.8	52	28.7
Kuala Pilah	252	89.7	237	79.5	371	79.6	304	72.6	208	44.1	303	65.9	300	69.8	264	45.8	154	24.6	151	25.1
Selayang	190	13.9	249	15.1	211	11.8	323	18.4	260	19.9	131	16.8	166	14.2	102	9.3	203	18.8	356	24.4
Kuala Krai	169	98.8	203	95.8	222	94.9	243	99.6	388	100. 0	248	69.3	86	22.3	60	18.1	94	27.3	90	20.3
Bintulu	118	99.2	255	99.6	328	100. 0	382	100. 0	374	98.9	374	100. 0	346	99.1	133	69.3	139	55.8	44	19.4
Sultanah Aminah JB	942	74.8	464	35.3	436	41.1	501	43.9	521	40.4	278	20.7	354	22.6	438	29.3	204	25.1	208	18.3
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	47.3	37	18.1
Queen Elizabeth KK	82	20.3	115	22.0	91	14.0	142	19.9	206	22.3	248	25.9	249	24.4	279	22.3	210	13.4	294	18.1
Sandakan	86	57.7	116	61.4	140	55.6	113	45.0	24	6.0	7	3.0	23	4.9	46	13.4	65	17.7	67	16.1
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	3	75.0	99	45.0	44	10.0	98	13.8
Putrajaya	240	99.2	260	100. 0	240	80.3	125	37.4	100	27.0	77	21.8	45	10.3	55	13.4	46	9.7	71	12.8
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	2	1.0	13	3.9	37	12.4	32	12.4
Miri	187	46.9	90	15.7	161	24.9	60	6.8	24	2.7	364	38.4	317	35.9	151	14.7	131	11.3	130	11.8

Batu Pahat	562	94.8	280	69.5	156	29.1	161	27.4	166	39.8	293	64.8	348	65.2	501	79.4	309	51.2	89	10.9
KK-KKM Pahang	-	-	-	-	-	-	-	-	51	79.7	-	-	105	57.4	49	41.2	60	20.5	17	10.1
Kuala Terengganu	417	59.7	267	39.8	274	38.1	291	40.6	215	22.7	207	24.7	304	33.6	260	22.0	195	15.0	129	9.7
Klang	178	24.1	326	38.5	67	7.2	62	5.0	45	3.3	58	4.6	168	9.8	239	12.0	147	6.8	190	8.8
Ipoh	872	43.5	567	27.3	387	23.5	517	19.6	448	16.8	198	8.9	279	13.4	214	7.7	137	4.3	280	8.1
Seremban	356	30.7	563	38.3	591	38.5	422	29.1	270	18.7	240	15.8	199	12.0	151	8.7	190	10.3	165	7.9
Taiping	121	22.4	328	41.4	402	48.4	356	36.4	373	32.5	189	17.5	343	28.8	279	20.4	173	11.3	123	7.8
Muar	528	99.2	460	77.7	104	15.8	54	8.3	37	5.4	53	7.6	37	4.1	44	4.1	64	6.3	82	7.7
Ampang	110	27.1	70	11.5	27	3.8	58	6.7	117	12.4	125	13.8	134	15.9	126	17.6	83	7.8	68	7.1
Kuala Lumpur	620	50.7	800	56.7	829	60.7	601	46.8	310	31.0	761	43.9	332	23.3	391	27.7	70	5.4	154	6.8
KK-KKM Sarawak	-	-	-	-	-	-	-	-	1	1.3	5	0.6	13	1.2	12	1.3	15	1.7	38	6.6
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	18	14.4	13	4.8	22	4.8	36	6.2
Alor Setar	239	25.3	274	20.7	323	18.8	426	26.5	600	40.8	379	21.1	275	13.4	213	9.0	239	10.5	76	6.1
Sungei Petani	646	99.2	235	44.9	180	23.3	236	29.3	229	26.1	218	24.7	104	11.5	138	13.3	125	10.1	66	5.4
Sungai Buloh	325	99.4	374	91.2	319	79.4	292	67.4	373	77.9	158	26.7	88	12.7	75	10.4	74	11.5	21	4.8
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	10	28.6	9	24.3	3	6.3	26	9.6	7	4.8
Kulim	-	-	-	-	-	-	-	-	-	-	14	5.4	45	11.0	62	11.1	28	4.8	26	4.3
KK-KKM Static*	-	-	-	-	-	-	-	-	171	10.8	123	5.4	87	4.8	86	3.0	77	2.2	120	2.8
Melaka	376	28.5	310	19.5	211	13.4	128	9.0	223	13.7	123	6.0	64	2.8	44	1.8	35	1.5	66	2.6
Bukit Mertajam	239	32.7	399	50.8	423	54.3	384	42.7	275	31.0	283	29.3	281	23.1	237	18.4	38	3.0	33	2.4
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	6.4	24	3.8	13	2.4
Sibu	155	40.4	26	5.8	37	7.4	10	1.3	11	1.2	22	2.6	22	3.9	34	4.3	49	6.3	17	2.4
Umum Sarawak	145	17.1	142	12.5	54	4.9	86	5.4	56	3.4	59	3.0	25	1.3	21	1.2	19	1.1	30	2.2
Pulau Pinang	474	37.3	328	18.5	76	3.5	56	4.4	165	10.0	122	7.0	124	5.9	112	4.4	49	3.1	31	1.5
Sultan Ismail	0	0.0	0	0.0	0	0.0	1	0.5	15	5.3	159	32.9	170	24.0	42	5.5	14	1.9	9	1.2
Keningau	0	0.0	0	0.0	0	0.0	0	0.0	1	7.1	20	15.5	1	1.3	1	0.3	0	0.0	2	1.1
Sarikei	-	-	-	-	-	-	-	-	2	0.7	5	0.9	6	0.9	0	0.0	0	0.0	2	0.4
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Sri Manjung	28	8.6	35	9.2	47	11.4	32	7.2	9	1.1	4	0.7	8	1.3	6	0.9	5	0.6	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	10	17.9	7	11.7	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	9	100. 0	18	100. 0	-	-	-	-

Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	383	34.7	-	-	
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	23	25.0	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	3	3.6	2	2.2	-	-

Table 1.3.8-10: Subtenon Anaesthesia by SDP (50 years and above), CSR 2009-2018

Years	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	10861	50.6	10338	41.4	9979	36.8	9340	32.6	9,435	28.6	8,938	24.8	8,885	22.4	8,653	19.0	7,520	15.5	6,601	13.2
Kangar	365	98.4	365	98.6	383	100.0	418	99.1	446	98.5	395	99.0	544	98.9	608	99.3	507	71.9	573	78.4
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	21.1	91	24.3	123	59.7
Kota Bharu	760	98.1	818	97.4	828	99.0	459	97.7	591	98.7	252	99.2	731	89.9	847	84.2	888	69.9	697	57.9
Temerloh	402	68.4	401	96.6	587	94.1	555	69.7	382	47.2	478	48.3	360	45.1	353	38.2	353	41.1	384	49.9
Teluk Intan	375	65.6	371	58.2	458	73.0	570	99.3	1,031	98.8	964	99.1	860	99.3	929	73.3	752	66.3	440	44.2
Kemaman	-	-	-	-	-	-	-	-	8	18.2	21	31.8	1	33.3	9	34.6	49	32.9	40	38.1
Tawau	258	99.6	334	99.7	500	100.0	561	99.1	338	78.1	377	77.4	136	25.8	94	15.2	73	26.8	137	37.1
Kuantan	138	63.3	338	78.6	444	77.5	330	62.9	356	76.2	386	86.4	743	81.0	651	61.7	667	54.9	405	35.5
Serdang	380	70.5	354	80.6	407	71.3	389	61.1	324	36.5	345	30.7	234	25.8	226	49.5	171	34.0	472	34.1
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	133	75.1	0	0.0	38	63.3	87	64.0	52	28.9
Selayang	178	14.4	227	15.1	191	11.8	300	18.5	244	20.2	116	16.1	151	14.6	96	9.6	193	19.6	339	25.1
Kuala Pilah	240	89.6	228	79.7	355	79.2	292	72.5	195	43.1	294	65.5	293	70.3	254	45.0	153	24.8	146	25.0
Kuala Krai	163	98.8	188	95.4	208	94.5	231	99.6	369	100.0	239	68.7	83	22.4	56	18.0	91	27.7	89	20.6
Queen Elizabeth KK	74	20.2	108	22.3	85	13.9	132	19.9	193	22.2	235	25.8	232	24.3	267	22.3	202	13.5	282	18.5
Bintulu	106	99.1	230	100.0	303	100.0	356	100.0	342	99.4	341	100.0	314	99.1	126	70.0	122	53.7	37	18.1
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	102	47.4	36	18.1
Sultanah Aminah JB	846	74.7	427	35.1	403	41.3	468	45.1	478	40.2	254	20.0	338	23.1	420	29.6	191	25.6	185	17.6
Sandakan	80	58.8	110	61.5	134	55.8	107	46.1	23	6.2	6	2.8	21	4.7	41	13.0	56	16.6	61	15.6
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	3	75.0	97	44.7	44	10.1	93	13.4
Putrajaya	231	99.1	255	100.0	224	80.3	116	36.4	95	26.5	74	21.8	44	10.6	54	13.4	40	8.8	64	12.3
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	2	1.0	13	4.0	37	12.7	31	12.3

Miri	176	46.2	85	15.7	151	24.5	56	6.6	22	2.5	348	38.4	301	35.2	143	14.5	119	10.7	122	11.6
Batu Pahat	537	94.5	269	70.6	152	29.4	157	27.8	163	40.2	285	64.9	334	64.7	491	79.3	305	51.6	84	10.6
KK-KKM Pahang	-	-	-	-	-	-	-	-	48	80.0	-	-	104	57.5	48	40.7	60	20.9	17	10.1
Kuala Terengganu	392	59.7	251	40.1	261	38.1	273	40.6	198	22.0	197	24.8	292	33.9	252	22.2	186	14.9	121	9.5
Klang	169	24.1	312	39.2	63	7.3	58	5.0	43	3.3	54	4.5	161	9.8	228	11.9	137	6.6	181	8.7
Ipoh	838	43.4	550	27.6	378	23.6	500	19.7	430	16.8	192	8.9	275	13.5	213	7.9	130	4.2	266	7.9
Taiping	117	22.5	313	41.3	385	48.7	349	36.8	367	33.1	182	17.3	338	29.0	272	20.3	166	11.1	120	7.8
Muar	507	99.2	429	77.7	100	15.9	51	8.0	36	5.6	51	7.6	35	4.0	41	4.0	60	6.1	79	7.6
Seremban	336	30.7	529	37.9	562	38.2	392	28.4	258	18.5	234	16.0	192	12.0	142	8.5	179	10.0	153	7.6
Ampang	103	26.8	66	11.3	27	4.0	56	6.7	114	12.7	121	13.8	127	15.6	121	17.5	81	7.8	62	6.7
Kuala Lumpur	594	50.8	759	56.6	796	61.3	581	47.4	298	31.0	737	44.2	323	23.9	370	27.7	65	5.3	145	6.7
KK-KKM Sarawak	-	-	-	-	-	-	-	-	1	1.4	5	0.6	13	1.2	12	1.3	15	1.7	37	6.6
Alor Setar	228	25.8	263	21.0	309	19.0	418	27.0	586	41.2	373	21.6	270	13.6	211	9.2	234	10.7	73	6.2
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	17	14.2	13	4.9	21	4.8	32	5.8
Sungei Petani	612	99.2	225	45.5	172	23.4	231	30.1	221	26.3	212	25.4	100	11.5	132	13.2	118	9.8	64	5.4
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	10	28.6	9	25.0	3	6.5	26	10.0	7	5.0
Sungai Buloh	306	99.4	346	91.1	294	78.8	280	67.1	356	77.9	146	26.4	86	13.1	71	10.5	71	11.8	20	4.9
Kulim	-	-	-	-	-	-	-	-	-	-	14	5.6	40	10.2	61	11.3	28	4.9	25	4.3
KK-KKM Static*	-	-	-	-	-	-	-	-	159	10.5	112	5.2	83	4.8	82	2.9	73	2.2	114	2.8
Melaka	363	29.2	303	20.0	210	14.0	125	9.2	216	14.0	118	5.9	61	2.7	43	1.8	35	1.5	64	2.6
Bukit Mertajam	224	32.4	372	50.7	408	54.9	358	42.2	265	31.5	269	29.0	271	23.2	232	18.5	33	2.8	33	2.5
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	5.9	21	3.5	12	2.3
Sibu	145	40.6	23	5.5	33	7.1	10	1.4	10	1.2	21	2.6	21	3.9	28	3.8	45	6.1	16	2.3
Umum Sarawak	129	16.2	135	12.6	50	4.9	76	5.1	49	3.2	52	2.8	24	1.3	18	1.1	15	0.9	27	2.1
Pulau Pinang	462	37.4	320	18.7	74	3.6	53	4.2	153	9.6	113	6.7	122	6.0	109	4.5	46	3.0	28	1.4
Sultan Ismail	0	0.0	0	0.0	0	0.0	1	0.6	15	5.5	153	32.8	165	23.9	42	5.6	13	1.8	9	1.2
Keningau	0	0.0	0	0.0	0	0.0	0	0.0	1	7.1	20	16.0	1	1.3	1	0.3	0	0.0	2	1.1
Sarikei	-	-	-	-	-	-	-	-	2	0.7	5	0.9	6	1.0	0	0.0	0	0.0	2	0.4
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Sri Manjung	27	8.7	34	9.2	44	11.2	31	7.2	9	1.2	4	0.7	5	0.8	5	0.8	5	0.6	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	10	18.9	6	10.2	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	9	100.0	18	100.0	-	-	-	-

Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	362	33.7	-	-	
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	22	24.4	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	3	3.8	2	2.3	-	-

Table 1.3.8-11: Topical Anaesthesia by SDP, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	8382	36.8	13112	49.6	16825	58.8	18461	61.1	22,220	64.2	25,068	66.6	28,458	68.7	34,825	73.5	39,624	78.6	41,607	80.0
Sri Manjung	298	92.0	353	92.9	365	88.8	418	93.9	781	98.9	587	98.3	634	99.1	639	99.2	806	99.9	809	99.9
Sibu	173	45.1	347	77.1	450	89.6	736	99.3	889	99.6	843	98.8	567	99.6	781	99.7	770	99.0	711	99.7
Kulim	-	-	-	-	-	-	-	-	-	-	189	72.4	404	98.8	541	96.8	581	99.1	604	99.5
Sarikei	-	-	-	-	-	-	-	-	280	98.6	546	98.9	641	99.8	215	31.5	420	97.9	539	99.4
Melaka	1014	76.9	1572	98.7	1549	98.6	1415	99.3	1,541	94.8	2,008	97.5	2,251	97.7	2,419	98.7	2,336	99.3	2,539	98.9
Muar	1	0.2	130	22.0	547	83.1	584	89.3	580	84.8	644	92.7	891	98.2	1055	99.4	998	97.8	1048	98.4
KK-KKM Sarawak	-	-	-	-	-	-	-	-	74	98.7	818	99.3	1107	98.1	908	99.0	868	98.1	563	98.4
Queen Elizabeth KK	265	65.8	416	79.7	582	89.4	624	87.4	791	85.7	796	83.1	928	90.9	1180	94.3	1479	94.4	1573	97.1
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	122.0	97.6	231	84.9	449	98.2	557	96.5
Pulau Pinang	814	64.1	1387	78.4	2002	92.4	1185	92.2	1,525	92.6	1,573	89.8	1,884	90.2	2,366	93.8	1,527	95.3	2,016	96.4
Ipoh	1137	56.7	1521	73.3	1348	81.7	2167	82.1	2,417	90.8	2,163	97.2	1,531	73.4	2,496	89.3	3,106	97.1	3,326	96.0
Sungei Petani	0	0.0	240	45.9	640	82.9	633	78.6	711	81.1	756	85.7	841	93.2	898	86.5	1116	89.9	1155	95.2
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	4	100.0	184	83.6	425	96.8	675	95.2
Keningau	21	91.3	2	2.8	0	0.0	0	0.0	0	0.0	74	57.4	76	95.0	350	95.4	252	98.8	180	94.7
Sandakan	34	22.8	86	45.5	83	32.9	92	36.7	367	91.5	225	96.6	450	95.1	280	81.4	286	77.9	390	93.5
Seremban	273	23.5	632	43.0	1059	69.0	999	68.9	980	67.8	1156	76.0	1382	83.5	1377	79.5	1655	89.8	1956	93.4
Taiping	213	39.4	466	58.8	431	51.9	626	64.1	776	67.7	906	83.7	866	72.7	1,095	80.0	1,365	89.0	1,468	93.4
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	28	80.0	28	75.7	45	93.8	250	92.6	137	93.2
Klang	427	57.7	480	56.7	751	81.0	981	79.4	1,298	94.8	1,138	91.0	1,482	86.9	1,743	87.3	2,011	93.1	2,002	92.7
Umum Sarawak	714	84.0	1000	88.3	1061	96.5	1530	95.6	1,592	97.8	1,855	93.9	1,838	96.7	1,735	97.9	1,660	97.6	1,269	92.7
Kemaman	-	-	-	-	-	-	-	-	29	63.0	52	73.2	3	100.0	14	53.8	125	79.1	106	92.2

Kuala Terengganu	274	39.3	402	59.9	445	61.8	434	60.5	765	80.6	650	77.6	597	66.0	950	80.2	1141	87.8	1221	91.9
Miri	211	52.9	483	84.3	478	73.9	823	92.9	882	97.5	627	66.2	661	74.8	905	87.9	1,082	93.2	1,001	91.2
Sultan Ismail	1	0.8	10	5.7	58	32.0	87	46.8	212	75.4	95	19.6	46	6.5	276	35.8	387	52.5	683	90.9
KK-KKM Static*	-	-	-	-	-	-	-	-	1,351	85.3	2,171	95.8	1,607	88.1	2,668	92.0	2,981	85.0	3,822	89.8
Kuala Krai	1	0.6	14	6.6	93	39.7	0	0.0	0	0.0	161	45.0	332	86.2	268	81.0	260	75.6	387	87.2
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	209	100.0	325	97.0	257	86.0	225	86.9
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	96.0	596	94.9	466	86.0
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	94	19.5	112	21.3	437	72.7	559	84.3	256	88.3	344	84.7
Ampang	248	61.1	500	81.8	674	95.9	807	92.7	908	96.3	827	91.1	707	83.8	554	77.5	880	82.6	813	84.4
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	33	18.0	0	0.0	23	37.1	61	44.2	147	81.2
Selayang	989	72.2	1142	69.4	1255	70.1	1262	71.9	969	74.1	600	76.8	830	71.1	645	58.9	818	75.7	1185	81.1
Kuala Pilah	0	0.0	9	3.0	38	8.2	51	12.2	236	50.0	103	22.4	225	52.3	398	69.1	544	86.8	433	72.0
Sungai Buloh	6	1.8	33	8.0	76	18.9	105	24.2	62	12.9	193	32.6	271	39.2	329	45.6	338	52.5	310	71.6
Sultanah Aminah JB	159	12.6	488	37.1	1034	97.5	1114	97.7	289	22.4	440	32.7	953	60.9	748	50.1	567	69.8	796	70.1
Alor Setar	124	13.1	676	51.2	876	51.0	922	57.4	547	37.2	1107	61.7	1371	66.7	1913	81.1	1525	67.1	864	69.2
Bukit Mertajam	62	8.5	0	0.0	1	0.1	8	0.9	0	0.0	2	0.2	16	1.3	178	13.8	613	49.1	927	67.7
Temerloh	234	37.3	21	5.0	39	6.0	226	27.0	337	39.7	243	23.8	220	26.5	520	54.5	472	53.5	512	64.2
Kota Bharu	12	1.4	22	2.4	7	0.8	8	1.6	0	0.0	0	0.0	59	6.8	166	15.7	802	60.4	789	62.6
KK-KKM Pahang	-	-	-	-	-	-	-	-	16	25.0	-	-	79.0	43.2	87	73.1	182	62.1	104	61.5
Serdang	151	27.0	88	18.9	164	26.8	264	38.7	533	56.8	752	64.4	561	59.6	231	49.6	269	52.2	871	60.9
Kuala Lumpur	208	17.0	237	16.8	202	14.8	163	12.7	352	35.2	509	29.4	651	45.7	1056	74.7	995	77.1	1304	57.9
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149	66.5	114	55.9
Bintulu	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	60	31.3	137	55.0	110	48.5
Kuantan	2	0.9	9	2.0	7	1.2	0	0.0	0	0.0	49	10.6	290	30.5	611	55.7	479	38.3	279	23.7
Kangar	3	0.8	3	0.8	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	1	0.2	208	28.5	168	22.5
Batu Pahat	25	4.2	85	21.1	355	66.2	184	31.3	15	3.6	0	0.0	9	1.7	11	1.7	1	0.2	81	9.9
Putrajaya	0	0.0	0	0.0	3	1.0	1	0.3	4	1.1	4	1.1	356	81.1	115	28.0	62	13.1	26	4.7
Teluk Intan	287	48.0	258	38.9	152	23.6	12	2.0	17	1.6	33	3.3	0	0.0	204	15.6	100	8.5	2	0.2
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	1	100.0	0	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4.3	25	6.4	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	40	71.4	53	88.3	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-

Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	833	75.4	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	42	45.7	31	93.9	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	58	69.0	87	96.7	-	-

Table 1.3.8-12: Topical Anaesthesia by SDP (50 years and above), CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	7952	37.0	12473	49.9	16003	59.0	17557	61.2	21203	64.3	24071	66.7	27349	69.0	33542	73.7	38196	78.7	40146	80.3
Sri Manjung	284	91.6	341	92.7	350	89.1	406	94.0	761	98.8	581	98.3	620	99.5	616	99.4	784	99.9	792	99.9
Sibu	163	45.7	328	77.9	419	89.5	695	99.3	833	99.6	801	98.8	538	99.6	735	99.7	726	98.9	688	99.7
Kulim	-	-	-	-	-	-	-	-	-	-	179	71.6	387	98.7	521	96.7	563	99.1	581	99.5
Sarikei	-	-	-	-	-	-	-	-	267	98.9	536	98.9	625	99.8	209	32.0	394	98.5	524	99.4
Melaka	951	76.5	1495	98.7	1483	98.5	1350	99.3	1464	94.8	1940	97.5	2178	97.7	2339	98.7	2257	99.3	2454	99.1
Muar	1	0.2	121	21.9	521	83.0	568	89.4	543	84.3	618	92.7	864	98.3	1017	99.5	962	97.9	1025	98.4
KK-KKM Sarawak	-	-	-	-	-	-	-	-	73	98.6	794	99.4	1087	98.0	884	99.0	845	98.0	551	98.4
Pulau Pinang	789	63.9	1346	78.6	1931	92.8	1153	92.4	1473	92.9	1518	90.2	1841	91.1	2286	94.5	1491	95.8	1959	97.5
Queen Elizabeth KK	241	65.8	390	80.4	546	89.5	583	87.8	745	85.8	754	82.7	869	91.2	1130	94.5	1415	94.8	1487	97.4
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	118	98.3	222	84.4	432	98.6	533	96.7
Ipoh	1090	56.5	1455	73.0	1309	81.8	2090	82.3	2333	91.1	2104	97.3	1500	73.6	2435	89.8	3030	97.2	3240	96.4
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	4	100.0	181	83.4	420	96.8	663	95.4
Sungei Petani	0	0.0	225	45.5	607	82.7	596	77.7	678	80.8	712	85.3	808	93.3	868	86.6	1089	90.1	1131	95.3
Keningau	19	90.5	2	3.0	0	0.0	0	0.0	0	0.0	73	58.4	75	94.9	334	95.7	234	98.7	172	95.0
Umum Sarawak	675	84.7	945	88.2	992	96.4	1429	95.6	1514	98.2	1770	94.4	1760	97.2	1656	98.0	1602	97.9	1219	93.6
Sandakan	31	22.8	83	46.4	79	32.9	84	36.2	339	91.6	207	96.3	424	95.3	257	81.3	267	79.0	366	93.4
Seremban	255	23.3	602	43.1	1015	69.0	962	69.7	947	67.9	1103	75.5	1338	83.7	1332	79.7	1601	89.8	1886	93.4
Taiping	205	39.3	447	59.0	409	51.7	605	63.8	744	67.1	879	83.7	844	72.4	1069	80.0	1330	89.1	1443	93.4
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	28	80.0	27	75.0	43	93.5	239	92.3	130	92.9

Klang	408	58.2	446	56.0	695	81.0	922	79.3	1230	94.6	1084	90.9	1421	86.8	1678	87.3	1944	93.3	1924	92.7
Kuala Terengganu	259	39.4	373	59.6	423	61.8	408	60.6	732	81.2	615	77.4	570	66.2	910	80.2	1095	87.9	1171	92.1
Kemaman	-	-	-	-	-	-	-	-	27	61.4	49	74.2	3	100.0	14	53.8	118	79.2	96	91.4
Miri	204	53.5	457	84.3	457	74.2	791	93.1	842	97.6	600	66.2	643	75.2	869	88.2	1038	93.5	962	91.4
Sultan Ismail	1	0.9	10	5.8	58	32.2	82	45.3	207	75.5	89	19.1	46	6.7	269	36.1	374	52.5	665	90.8
KK-KKM Static*	-	-	-	-	-	-	-	-	1301	85.6	2080	95.9	1535	88.3	2564	92.0	2862	84.8	3696	89.7
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	206	100.0	315	96.9	250	85.6	220	87.0
Kuala Krai	1	0.6	14	7.1	86	39.1	0	0.0	0	0.0	157	45.1	319	86.2	250	80.4	246	74.8	375	86.8
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	292	95.7	575	95.2	442	85.3
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	88	20.3	102	20.9	383	72.7	526	84.8	241	88.6	314	85.1
Ampang	236	61.3	475	81.6	653	96.3	777	92.5	867	96.2	801	91.1	682	83.9	534	77.4	859	82.6	790	84.9
Selayang	921	74.3	1080	71.7	1192	73.4	1185	72.9	907	75.0	568	78.8	763	73.6	624	62.6	761	77.3	1128	83.5
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	33	18.6	0	0.0	22	36.7	60	44.1	146	81.1
Kuala Pilah	0	0.0	9	3.1	38	8.5	49	12.2	229	50.7	101	22.5	215	51.6	392	69.5	534	86.5	422	72.3
Sungai Buloh	6	1.9	31	8.2	73	19.6	102	24.5	59	12.9	181	32.8	255	38.9	314	46.4	320	53.1	292	71.4
Sultanah Aminah JB	151	13.3	458	37.6	951	97.5	1016	98.0	271	22.8	414	32.6	891	60.8	703	49.6	525	70.5	743	70.8
Alor Setar	115	13.0	652	52.0	839	51.5	888	57.4	523	36.8	1064	61.6	1322	66.6	1872	81.4	1475	67.1	827	69.9
Bukit Mertajam	62	9.0	0	0.0	1	0.1	8	0.9	0	0.0	1	0.1	16	1.4	170	13.6	581	48.7	899	67.7
Temerloh	217	36.9	21	5.1	37	5.9	216	27.1	314	38.8	238	24.1	213	26.7	509	55.1	459	53.4	493	64.0
Kota Bharu	10	1.3	22	2.6	6	0.7	8	1.7	0	0.0	0	0.0	56	6.9	157	15.6	769	60.6	751	62.4
KK-KKM Pahang	-	-	-	-	-	-	-	-	16	26.7	-	-	78	43.1	87	73.7	178	62.0	103	61.3
Serdang	149	27.6	82	18.7	149	26.1	243	38.1	504	56.8	723	64.4	542	59.8	226	49.5	262	52.1	840	60.6
Kuala Lumpur	198	16.9	223	16.6	189	14.6	157	12.8	338	35.2	494	29.6	619	45.7	994	74.4	946	77.2	1248	58.0
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144	67.0	111	55.8
Bintulu	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	56	31.1	126	55.5	102	50.0
Kuantan	2	0.9	9	2.1	5	0.9	0	0.0	0	0.0	45	10.1	277	30.2	589	55.8	464	38.2	273	23.9
Kangar	3	0.8	3	0.8	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0	201	28.5	163	22.3
Batu Pahat	25	4.4	80	21.0	340	65.8	172	30.5	14	3.5	0	0.0	9	1.7	11	1.8	0	0.0	78	9.8
Putrajaya	0	0.0	0	0.0	2	0.7	1	0.3	4	1.1	4	1.2	340	81.9	112	27.8	59	13.1	26	5.0
Teluk Intan	279	48.8	248	38.9	148	23.6	11	1.9	16	1.5	31	3.2	0	0.0	193	15.2	98	8.6	2	0.2

Likas	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	5	4.6	24	6.4	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	37	69.8	53	89.8	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	814	75.9	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	42	46.7	29	93.5	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	56	71.8	84	96.6	-	-

Table 1.3.8-13: Types of Sedation in Eyes Given Local Anaesthesia by SDP, CSR 2018

	Types of sedation								
	All Local Anaesthesia	No Sedation		Oral Alone		Intravenous Alone		Intramuscular Alone	
	N	n	%	n	%	n	%	n	%
All Centres	51,977	27,656	53.2	209	0.4	283	0.5	2	0.0
Taiping	1,572	1,568	99.7	0	0.0	0	0.0	0	0.0
Sri Manjung	810	805	99.4	0	0.0	0	0.0	0	0.0
Muar	1065	1048	98.4	0	0.0	0	0.0	0	0.0
Sarikei	542	533	98.3	0	0.0	0	0.0	0	0.0
Sungei Petani	1213	1080	89.0	1	0.1	0	0.0	0	0.0
KK-KKM Kedah	259	228	88.0	0	0.0	0	0.0	0	0.0
Teluk Intan	1,034	901	87.1	127	12.3	0	0.0	0	0.0
Sibu	713	610	85.6	0	0.0	0	0.0	0	0.0
Alor Setar	1,248	1,006	80.6	4	0.3	2	0.2	0	0.0
Keningau	190	149	78.4	0	0.0	0	0.0	0	0.0
Bintulu	227	175	77.1	0	0.0	0	0.0	0	0.0
Ipoh	3,465	2538	73.2	13	0.4	237	6.8	0	0.0
Kuala Terengganu	1329	971	73.1	1	0.1	21	1.6	0	0.0
Kemaman	115	83	72.2	0	0.0	4	3.5	0	0.0
KK-KKM Static*	4,257	2,986	70.1	1	0.0	1	0.0	0	0.0
Kangar	747	495	66.3	2	0.3	3	0.4	0	0.0
Batu Pahat	816	523	64.1	1	0.1	0	0.0	1	0.1
Pulau Pinang	2,092	1339	64.0	13	0.6	0	0.0	0	0.0
Kluang	204	124	60.8	0	0.0	0	0.0	0	0.0
Kuala Pilah	601	334	55.6	2	0.3	0	0.0	0	0.0
Umum Sarawak	1,369	748	54.6	4	0.3	0	0.0	0	0.0
Sungai Buloh	433	224	51.7	1	0.2	1	0.2	0	0.0
KK-KKM Neg. Sembilan	709	354	49.9	0	0.0	0	0.0	0	0.0
Putrajaya	554	274	49.5	2	0.4	3	0.5	0	0.0
Seremban	2,095	1029	49.1	1	0.0	0	0.0	0	0.0
KK-KKM Terengganu	147	70	47.6	0	0.0	0	0.0	0	0.0
Tawau	406	192	47.3	0	0.0	0	0.0	0	0.0
Melaka	2,568	1,148	44.7	2	0.1	0	0.0	0	0.0
KK-KKM Sarawak	572	254	44.4	2	0.3	0	0.0	0	0.0
Miri	1098	447	40.7	0	0.0	0	0.0	0	0.0
Temerloh	798	324	40.6	1	0.1	5	0.6	0	0.0
Kuala Lumpur	2,252	901	40.0	0	0.0	0	0.0	0	0.0
Sandakan	417	161	38.6	0	0.0	0	0.0	0	0.0
Selayang	1,461	553	37.9	2	0.1	1	0.1	0	0.0
Queen Elizabeth KK	1620	595	36.7	3	0.2	0	0.0	0	0.0
KK-KKM Sabah	577	204	35.4	0	0.0	0	0.0	0	0.0
Sultan Ismail	751	254	33.8	0	0.0	1	0.1	0	0.0
Bukit Mertajam	1370	457	33.4	18	1.3	0	0.0	0	0.0
Serdang	1430	471	32.9	0	0.0	0	0.0	0	0.0
Sultanah Aminah JB	1,136	341	30.0	0	0.0	0	0.0	1	0.1
Shah Alam	542	152	28.0	0	0.0	0	0.0	0	0.0

KK-KKM Kelantan	181	47	26.0	0	0.0	1	0.6	0	0.0
Kuantan	1175	278	23.7	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	169	31	18.3	0	0.0	0	0.0	0	0.0
Kuala Krai	444	78	17.6	0	0.0	1	0.2	0	0.0
Ampang	963	149	15.5	8	0.8	0	0.0	0	0.0
Segamat	215	32	14.9	0	0.0	1	0.5	0	0.0
Kota Bharu	1260	155	12.3	0	0.0	1	0.1	0	0.0
Kulim	607	71	11.7	0	0.0	0	0.0	0	0.0
Klang	2,159	166	7.7	0	0.0	0	0.0	0	0.0
Likas	0	0	0.0	0	0.0	0	0.0	0	0.0
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-

Number or percentage may be more than total or 100% as patient might have more than one type of local Anaesthesia

Table 1.3.8-14: Types of Sedation in Eyes Given Local Anaesthesia by SDP (50 years and above), CSR 2018

	Types of sedation								
	All Local Anaesthesia	No Sedation		Oral Alone		Intravenous Alone		Intramuscular Alone	
	N	n	%	n	%	n	%	n	%
All Centres	49,991	26,684	53.4	200	0.4	250	0.5	2	0.0
Taiping	1,545	1,541	99.7	0	0.0	0	0.0	0	0.0
Sri Manjung	793	788	99.4	0	0.0	0	0.0	0	0.0
Muar	1,042	1,026	98.5	0	0.0	0	0.0	0	0.0
Sarikei	527	518	98.3	0	0.0	0	0.0	0	0.0
Sungei Petani	1187	1059	89.2	1	0.1	0	0.0	0	0.0
KK-KKM Kedah	253	222	87.7	0	0.0	0	0.0	0	0.0
Teluk Intan	995	866	87.0	123	12.4	0	0.0	0	0.0
Sibu	690	593	85.9	0	0.0	0	0.0	0	0.0
Alor Setar	1,183	952	80.5	3	0.3	2	0.2	0	0.0
Keningau	181	143	79.0	0	0.0	0	0.0	0	0.0
Bintulu	204	156	76.5	0	0.0	0	0.0	0	0.0
Ipoh	3,362	2488	74.0	11	0.3	214	6.4	0	0.0
Kuala Terengganu	1272	936	73.6	1	0.1	16	1.3	0	0.0
Kemaman	105	77	73.3	0	0.0	4	3.8	0	0.0
KK-KKM Static*	4,120	2,879	69.9	1	0.0	1	0.0	0	0.0
Kangar	731	484	66.2	2	0.3	3	0.4	0	0.0
Batu Pahat	792	507	64.0	1	0.1	0	0.0	1	0.1
Pulau Pinang	2,010	1281	63.7	12	0.6	0	0.0	0	0.0
Kluang	199	122	61.3	0	0.0	0	0.0	0	0.0
Kuala Pilah	584	325	55.7	2	0.3	0	0.0	0	0.0
Umum Sarawak	1,302	708	54.4	4	0.3	0	0.0	0	0.0
Sungai Buloh	409	213	52.1	1	0.2	1	0.2	0	0.0
KK-KKM Neg. Sembilan	695	348	50.1	0	0.0	0	0.0	0	0.0
Putrajaya	520	259	49.8	2	0.4	1	0.2	0	0.0
Seremban	2,019	991	49.1	1	0.0	0	0.0	0	0.0

KK-KKM Terengganu	140	68	48.6	0	0.0	0	0.0	0	0.0
Tawau	369	172	46.6	0	0.0	0	0.0	0	0.0
Melaka	2,477	1,111	44.9	2	0.1	0	0.0	0	0.0
KK-KKM Sarawak	560	247	44.1	2	0.4	0	0.0	0	0.0
Temerloh	770	316	41.0	1	0.1	3	0.4	0	0.0
Miri	1052	429	40.8	0	0.0	0	0.0	0	0.0
Kuala Lumpur	2151	857	39.8	0	0.0	0	0.0	0	0.0
Selayang	1,351	519	38.4	2	0.1	1	0.1	0	0.0
Sandakan	392	148	37.8	0	0.0	0	0.0	0	0.0
Queen Elizabeth KK	1527	563	36.9	2	0.1	0	0.0	0	0.0
KK-KKM Sabah	551	193	35.0	0	0.0	0	0.0	0	0.0
Sultan Ismail	732	248	33.9	0	0.0	1	0.1	0	0.0
Bukit Mertajam	1,328	443	33.4	18	1.4	0	0.0	0	0.0
Serdang	1385	457	33.0	0	0.0	0	0.0	0	0.0
Sultanah Aminah JB	1,049	317	30.2	0	0.0	0	0.0	1	0.1
Shah Alam	518	142	27.4	0	0.0	0	0.0	0	0.0
KK-KKM Kelantan	180	47	26.1	0	0.0	1	0.6	0	0.0
Kuantan	1140	270	23.7	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	168	31	18.5	0	0.0	0	0.0	0	0.0
Kuala Krai	432	75	17.4	0	0.0	1	0.2	0	0.0
Segamat	206	32	15.5	0	0.0	0	0.0	0	0.0
Ampang	931	143	15.4	8	0.9	0	0.0	0	0.0
Kota Bharu	1,203	147	12.2	0	0.0	1	0.1	0	0.0
Kulim	584	70	12.0	0	0.0	0	0.0	0	0.0
Klang	2,075	157	7.6	0	0.0	0	0.0	0	0.0
Likas	0	0	0.0	0	0.0	0	0.0	0	0.0
Pusat Perubatan Klinikal	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-

Table 1.3.8-15: Oral Sedation Alone by SDP, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	3532	15.5	3171	12.0	2852	10.0	1810	6.0	1391	4.0	1823	4.8	2879	7.0	3218	6.8	866	1.7	209	0.4
Teluk Intan	366	61.2	356	53.7	95	14.7	353	59.7	247	23.0	408	41.0	794	87.3	1140	87.4	645	55.1	127	12.3
Bukit Mertajam	466	63.8	308	39.2	185	23.7	107	12.0	66	7.4	108	11.3	349	28.7	379	29.5	84	6.7	18	1.3
Ampang	1	0.2	3	0.5	0	0.0	3	0.3	2	0.2	0	0.0	0	0.0	0	0.0	1	0.1	8	0.8
Pulau Pinang	1018	80.2	1339	75.6	1382	63.8	662	51.6	818	49.7	1227	70.1	1539	73.9	1517	60.2	93	5.8	13	0.6
Ipoh	9	0.4	13	0.6	11	0.7	2	0.1	7	0.3	3	0.1	4	0.2	7	0.3	2	0.1	13	0.4
Putrajaya	0	0.0	0	0.0	0	0.0	4	1.2	6	1.6	6	1.7	3	0.7	0	0.0	6	1.3	2	0.4
Alor Setar	23	2.4	4	0.3	0	0.0	1	0.1	1	0.1	0	0.0	2	0.1	4	0.2	5	0.2	4	0.3
Kangar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
Kuala Pilah	205	73.0	77	25.8	211	45.3	96	23.0	22	4.7	24	5.2	2	0.5	1	0.2	0	0.0	2	0.3
Umum Sarawak	2	0.2	1	0.1	0	0.0	1	0.1	0	0.0	2	0.1	0	0.0	2	0.1	0	0.0	4	0.3
KK-KKM Sarawak	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	2	0.3
Queen Elizabeth KK	0	0.0	0	0.0	5	0.8	0	0.0	1	0.1	2	0.2	2	0.2	5	0.4	1	0.1	3	0.2
Sungai Buloh	4	1.2	0	0.0	1	0.2	0	0.0	0	0.0	1	0.2	1	0.1	0	0.0	0	0.0	1	0.2
Batu Pahat	3	0.5	1	0.2	1	0.2	1	0.2	4	1.0	4	0.9	0	0.0	0	0.0	0	0.0	1	0.1
Kuala Terengganu	72	10.3	104	15.5	15	2.1	23	3.3	2	0.2	3	0.4	1	0.1	0	0.0	0	0.0	1	0.1
Melaka	7	0.5	0	0.0	0	0.0	0	0.0	1	0.1	2	0.1	3	0.1	4	0.2	0	0.0	2	0.1
Selayang	10	0.7	13	0.8	6	0.3	1	0.1	3	0.2	0	0.0	1	0.1	2	0.2	0	0.0	2	0.1
Sungei Petani	578	88.8	443	84.7	281	36.4	11	1.4	4	0.5	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1
Temerloh	511	81.5	414	97.6	613	94.3	526	63.1	153	18.0	4	0.4	4	0.5	3	0.3	0	0.0	1	0.1
Bintulu	29	24.4	32	12.5	4	1.2	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kemaman	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	2	1.3	0	0.0
Keningau	0	0.0	1	1.4	2	4.5	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0
Klang	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.4	0	0.0
Kota Bharu	15	1.8	5	0.6	1	0.1	0	0.0	0	0.0	0	0.0	12	1.4	2	0.2	1	0.1	0	0.0
Kuala Krai	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0
Kuala Lumpur	1	0.1	1	0.1	2	0.1	15	1.2	32	3.2	10	0.6	0	0.0	1	0.1	0	0.0	0	0.0

Kuantan	0	0.0	2	0.4	5	0.8	0	0.0	1	0.2	0	0.0	10	1.1	1	0.1	0	0.0	0	0.0
Kulim	-	-	-	-	-	-	-	-	-	-	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Miri	0	0.0	1	0.2	3	0.5	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Muar	0	0.0	4	0.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
Sandakan	0	0.0	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sarikei	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Serdang	0	0.0	3	0.6	0	0.0	0	0.0	5	0.5	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Seremban	14	1.2	2	0.1	4	0.3	2	0.1	1	0.1	1	0.1	1	0.1	4	0.2	3	0.2	1	0.0
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3	0	0.0	0	0.0
Sibu	141	36.7	39	8.7	24	4.8	1	0.1	0	0.0	1	0.1	3	0.5	1	0.1	0	0.0	0	0.0
Sri Manjung	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1	2	0.3	0	0.0	1	0.2	0	0.0	0	0.0
Sultan Ismail	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sultanah Aminah JB	57	4.5	4	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Taiping	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	3	0.6	12	2.3	144	24.0	106	16.1	0	0.0	0	0.0
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	-	-	-	-	-	-	-	-	9	14.1	-	-	1	0.5	0	0.0	0	0.0	0	0.0
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
KK-KKM Static*	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	1.7	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	39.3	1	1.1	-	-

Table 1.3.8-16: Oral Sedation Alone by SDP (50 years and above), CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	3355	15.6	3055	12.2	2731	10.1	1748	6.1	1339	4.1	1755	4.9	2776	7.0	3106	6.8	834	1.7	200	0.4
Teluk Intan	346	60.5	347	54.5	92	14.7	342	59.6	242	23.2	400	41.1	757	87.5	1108	87.4	621	54.8	123	12.4
Bukit Mertajam	437	63.2	284	38.7	174	23.4	102	12.0	63	7.5	104	11.3	336	28.8	368	29.4	80	6.7	18	1.4
Ampang	1	0.3	3	0.5	0	0.0	3	0.4	2	0.2	0	0.0	0	0.0	0	0.0	1	0.1	8	0.9
Pulau Pinang	992	80.4	1300	75.9	1331	64.0	648	51.9	789	49.7	1177	70.0	1503	74.5	1462	60.5	90	5.8	12	0.6
Putrajaya	0	0.0	0	0.0	0	0.0	3	0.9	4	1.1	6	1.8	3	0.7	0	0.0	5	1.1	2	0.4
KK-KKM Sarawak	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	2	0.4
Alor Setar	23	2.6	4	0.3	0	0.0	1	0.1	1	0.1	0	0.0	2	0.1	4	0.2	5	0.2	3	0.3
Ipoh	9	0.5	13	0.7	9	0.6	2	0.1	6	0.2	3	0.1	4	0.2	7	0.3	2	0.1	11	0.3
Kangar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
Kuala Pilah	194	72.4	75	26.2	200	44.6	92	22.8	21	4.6	20	4.5	2	0.5	1	0.2	0	0.0	2	0.3
Umum Sarawak	2	0.3	1	0.1	0	0.0	1	0.1	0	0.0	2	0.1	0	0.0	1	0.1	0	0.0	4	0.3
Sungai Buloh	4	1.3	0	0.0	1	0.3	0	0.0	0	0.0	1	0.2	1	0.2	0	0.0	0	0.0	1	0.2
Batu Pahat	2	0.4	1	0.3	1	0.2	0	0.0	4	1.0	3	0.7	0	0.0	0	0.0	0	0.0	1	0.1
Kuala Terengganu	65	9.9	98	15.7	14	2.0	21	3.1	2	0.2	3	0.4	1	0.1	0	0.0	0	0.0	1	0.1
Melaka	7	0.6	0	0.0	0	0.0	0	0.0	1	0.1	2	0.1	3	0.1	4	0.2	0	0.0	2	0.1
Queen Elizabeth KK	0	0.0	0	0.0	5	0.8	0	0.0	1	0.1	2	0.2	2	0.2	5	0.4	1	0.1	2	0.1
Selayang	9	0.7	12	0.8	5	0.3	1	0.1	2	0.2	0	0.0	1	0.1	2	0.2	0	0.0	2	0.1
Sungei Petani	546	88.5	421	85.1	265	36.1	11	1.4	3	0.4	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1
Temerloh	482	82.0	405	97.6	590	94.6	503	63.2	145	17.9	4	0.4	3	0.4	2	0.2	0	0.0	1	0.1
Bintulu	25	23.4	31	13.5	4	1.3	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kemaman	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	2	1.4	0	0.0
Keningau	0	0.0	1	1.5	2	4.9	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0
Klang	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5	0	0.0
Kota Bharu	14	1.8	5	0.6	1	0.1	0	0.0	0	0.0	0	0.0	7	0.9	1	0.1	1	0.1	0	0.0
Kuala Krai	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0
Kuala Lumpur	1	0.1	1	0.1	2	0.2	14	1.1	31	3.2	9	0.5	0	0.0	1	0.1	0	0.0	0	0.0

Kuantan	0	0.0	2	0.5	5	0.9	0	0.0	1	0.2	0	0.0	10	1.1	1	0.1	0	0.0	0	0.0
Kulim	-	-	-	-	-	-	-	-	-	-	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Miri	0	0.0	1	0.2	3	0.5	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Muar	0	0.0	4	0.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
Sandakan	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sarikei	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Serdang	0	0.0	3	0.7	0	0.0	0	0.0	5	0.6	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Seremban	13	1.2	2	0.1	3	0.2	2	0.1	1	0.1	1	0.1	1	0.1	3	0.2	3	0.2	1	0.0
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Sibu	131	36.7	36	8.6	23	4.9	1	0.1	0	0.0	1	0.1	3	0.6	0	0.0	0	0.0	0	0.0
Sri Manjung	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1	2	0.3	0	0.0	1	0.2	0	0.0	0	0.0
Sultan Ismail	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sultanah Aminah JB	52	4.6	4	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Taiping	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	3	0.7	12	2.5	133	25.2	101	16.4	0	0.0	0	0.0
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	-	-	-	-	-	-	-	-	9	15.0	-	-	1	0.6	0	0.0	0	0.0	0	0.0
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
KK-KKM Static*	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	1.8	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	39.7	1	1.1	-	-

Table 1.3.8-17: Intravenous Sedation Alone by SDP, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	35	0.2	22	0.1	27	0.1	36	0.1	31	0.1	36	0.1	66	0.2	124	0.3	198	0.4	283	0.5
Alor Setar	0	0.0	1	0.1	0	0.0	5	0.3	1	0.1	1	0.1	3	0.1	2	0.1	2	0.1	2	0.2
Ampang	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	1	0.1	0	0.0
Batu Pahat	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bintulu	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bukit Mertajam	2	0.3	3	0.4	0	0.0	10	1.3	3	0.3	7	0.8	0	0.0	0	0.0	2	0.2	0	0.0
Ipoh	6	0.3	1	0.0	4	0.2	3	0.1	2	0.1	3	0.1	21	1.0	82	2.9	143	4.5	237	6.9
Kangar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	3	0.4
Kemaman	-	-	-	-	-	-	-	-	1	2.2	0	0.0	0	0.0	1	3.8	6	3.8	4	3.5
Keningau	0	0.0	3	4.2	6	13.6	0	0.0	0	0.0	1	0.8	0	0.0	0	0.0	0	0.0	0	0.0
Klang	2	0.3	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0
Kota Bharu	6	0.7	2	0.2	0	0.0	0	0.0	1	0.2	0	0.0	1	0.1	4	0.4	1	0.1	1	0.1
Kuala Krai	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	4	1.2	0	0.0	1	0.2
Kuala Lumpur	1	0.1	0	0.0	1	0.1	0	0.0	1	0.1	1	0.1	0	0.0	2	0.1	0	0.0	0	0.0
Kuala Pilah	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kuala Terengganu	7	1.0	5	0.7	13	1.8	12	1.7	7	0.7	7	0.8	7	0.8	11	0.9	16	1.2	21	1.6
Kuantan	0	0.0	2	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	3	0.2	0	0.0
Kulim	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Melaka	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Miri	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Muar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Pulau Pinang	0	0.0	0	0.0	0	0.0	2	0.3	1	0.1	1	0.2	5	0.9	2	0.2	1	0.1	0	0.0
Putrajaya	2	0.8	0	0.0	0	0.0	0	0.0	1	0.3	1	0.3	0	0.0	0	0.0	0	0.0	3	0.5
Queen Elizabeth KK	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
Sandakan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Sarikei	-	-	-	-	-	-	-	-	2	0.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	1	0.5
Selayang	3	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7	0.6	0	0.0	2	0.2	1	0.1
Serdang	0	0.0	0	0.0	0	0.0	0	0.0	2	0.2	1	0.1	4	0.4	2	0.4	0	0.0	0	0.0
Seremban	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Sibu	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sri Manjung	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Sultan Ismail	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1
Sultanah Aminah JB	4	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Sungai Buloh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.2
Sungei Petani	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Taiping	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	1	5.6	-	-	-	-
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.5	1	0.3	0	0.0
Teluk Intan	0	0.0	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0
Temerloh	1	0.2	0	0.0	1	0.2	2	0.6	7	0.8	9	0.9	13	1.6	1	0.1	11	1.2	5	0.6
Umum Sarawak	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0.2	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	1	1.6	0	0.0	1	0.6
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	-	-	-	-	-	-	-	-	1	1.6	-	-	1	0.5	0	0.0	2	0.7	0	0.0
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Sarawak	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	2	0.7	0	0.0
KK-KKM Static*	-	-	-	-	-	-	-	-	1	0.1	0	0.0	0	0.0	4	0.1	0	0.0	1	0.0

Table 1.3.8-18: Intravenous Sedation Alone by SDP (50 years and above), CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	29	0.1	18	0.1	23	0.1	34	0.1	28	0.1	26	0.1	62	0.2	114	0.3	186	0.4	250	0.5
Ipoh	6	0.3	1	0.1	3	0.2	3	0.1	2	0.1	2	0.1	20	1.0	74	2.7	136	4.4	214	6.4
Kemaman	-	-	-	-	-	-	-	-	1	2.3	0	0.0	0	0.0	1	3.8	6	4.1	4	3.8
Kuala Terengganu	4	0.6	5	0.8	12	1.8	11	1.6	6	0.7	2	0.3	7	0.8	11	1.0	14	1.1	16	1.3
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	1	1.7	0	0.0	1	0.6
Kangar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	3	0.4
Temerloh	0	0.0	0	0.0	1	0.2	2	0.3	7	0.9	8	0.8	12	1.5	1	0.1	10	1.2	3	0.4
Alor Setar	0	0.0	1	0.1	0	0.0	4	0.3	1	0.1	1	0.1	3	0.2	2	0.1	2	0.1	2	0.2
Kuala Krai	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	1.3	0	0.0	1	0.2
Putrajaya	2	0.9	0	0.0	0	0.0	0	0.0	1	0.3	1	0.3	0	0.0	0	0.0	0	0.0	1	0.2
Sungai Buloh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0	1	0.2
Kota Bharu	5	0.6	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	4	0.4	1	0.1	1	0.1
Selayang	3	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7	0.7	0	0.0	2	0.2	1	0.1
Sultan Ismail	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1
Ampang	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	1	0.1	0	0.0
Batu Pahat	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bintulu	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bukit Mertajam	2	0.3	2	0.3	0	0.0	10	1.2	3	0.4	6	0.7	0	0.0	0	0.0	1	0.1	0	0.0
Keningau	0	0.0	3	4.5	5	12.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Klang	2	0.3	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0
Kuala Lumpur	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0	1	0.1	0	0.0	2	0.1	0	0.0	0	0.0
Kuala Pilah	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kuantan	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	3	0.2	0	0.0
Kulim	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Likas	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Melaka	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Miri	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Muar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Pulau Pinang	0	0.0	0	0.0	0	0.0	2	0.2	1	0.1	1	0.2	4	0.8	2	0.2	0	0.0	0	0.0
Queen Elizabeth KK	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
Sandakan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sarikei	-	-	-	-	-	-	-	-	2	0.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Serdang	0	0.0	0	0.0	0	0.0	0	0.0	2	0.2	1	0.1	3	0.3	1	0.2	0	0.0	0	0.0
Seremban	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0
Sibu	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sri Manjung	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Sultanah Aminah JB	3	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Sungei Petani	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Taiping	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tawau	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.4	1	0.4	0	0.0
Teluk Intan	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0
Umum Sarawak	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	-	-	-	-	-	-	-	-	1	1.7	-	-	1	0.6	0	0.0	2	0.7	0	0.0
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Sarawak	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	0	0.0	2	0.8	0	0.0
KK-KKM Static*	-	-	-	-	-	-	-	-	1	0.1	0	0.0	0	0.0	4	0.1	0	0.0	1	0.0
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	1	5.6	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0.2	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0	0	0.0	-	-

1.3.9 Intraocular Lens (IOL)

Table 1.3.9-1: IOL Implantation, CSR 2009-2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
With IOL	23982	98.1	27980	98.1	30061	98.2	31991	98.5	36545	98.4	40006	98.7	43869	98.5	49890	98.5	53403	98.5	54766	98.3
Without IOL	423	1.7	502	1.8	487	1.6	419	1.3	431	1.2	495	1.2	651	1.5	721	1.4	831	1.5	910	1.6
Not Available	33	0.1	24	0.1	63	0.2	63	0.2	174	0.5	31	0.1	14	0.0	14	0.0	8	0.0	11	0.0
IOL Placement																				
No of IOL	23982		27980		30061		31991		36545		40006		43869		49890		53403		54766	
PCIOL	23032	96	26932	96.3	28963	96.3	30683	95.9	35194	96.3	38453	96.1	42365	96.6	48371	97.0	51688	96.8	52933	96.7
ACIOL	570	2.4	543	1.9	573	1.9	575	1.8	595	1.6	633	1.6	739	1.7	781	1.6	790	1.5	808	1.5
Scleral Fixated IOL	21	0.1	20	0.1	21	0.1	15	0.0	25	0.1	29	0.1	23	0.1	24	0.0	36	0.1	33	0.1
Others	22	0.1	21	0.1	44	0.1	53	0.2	59	0.2	94	0.2	95	0.2	74	0.1	122	0.2	146	0.3
Not Available /missing	337	1.4	464	1.7	460	1.5	665	2.1	672	1.8	797	2.0	647	1.5	640	1.3	767	1.4	846	1.5
Materials of IOL																				
No of IOL	23982		27980		30061		31991		36545		40006		43869		49890		53403		54766	
1. Acrylic	19160	79.9	24270	86.7	26917	89.5	28861	90.2	32798	89.7	37056	92.6	40466	92.2	46764	93.7	49918	93.5	51254	93.6
2. PMMA	4313	18.0	3259	11.6	2603	8.7	2295	7.2	2083	5.7	1736	4.3	1952	4.4	1714	3.4	2097	3.9	2062	3.8
3. Silicone	137	0.6	75	0.3	110	0.4	117	0.4	347	0.9	143	0.4	211	0.5	72	0.1	138	0.3	109	0.2
4. Others	58	0.2	32	0.1	37	0.1	84	0.3	75	0.2	115	0.3	180	0.4	522	1.0	196	0.4	348	0.6
Not Available/missing	314	1.3	344	1.2	394	1.3	634	2.0	1242	3.4	956	2.4	1060	2.4	818	1.6	1054	2.0	993	1.8
Types of IOL																				
No of IOL	23982		27980		30061		31991		36545		40006		43869		49890		53403		54766	
1. Foldable	19093	79.6	24036	85.9	26553	88.3	29107	91.0	33987	93.0	37536	93.8	41575	94.8	48331	96.9	52078	97.5	53487	97.7
2. Non-foldable	4280	17.8	3231	11.5	2694	9.0	2345	7.3	1929	5.3	1820	4.5	1868	4.3	1436	2.9	1104	2.1	1114	2.0
Not Available/missing	609	2.5	713	2.5	814	2.7	539	1.7	629	1.7	650	1.6	426	1.0	123	0.2	221	0.4	165	0.3

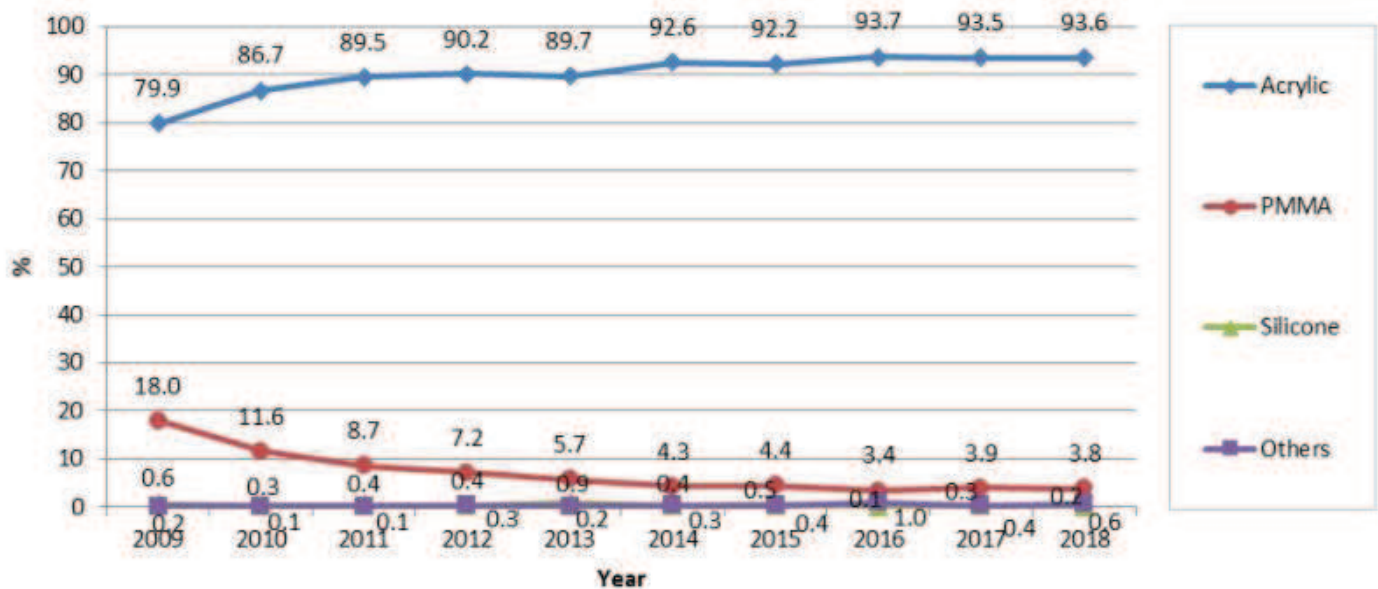


Figure 1.3.9-1: Intraocular Lens Implantation, CSR 2009-2018

Table 1.3.9-2: Distribution of IOL Placement by SDP, CSR 2018

Cataract Surgery With IOL							
	N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL	
		n	%	n	%	n	%
All Centres	54766	52933	96.7	808	1.5	33	0.1
Alor Setar	1481	1443	97.4	16	1.1	0	0.0
Ampang	1022	991	97.0	16	1.6	0	0.0
Batu Pahat	843	807	95.7	23	2.7	1	0.1
Bintulu	223	221	99.1	0	0.0	0	0.0
Bukit Mertajam	1499	1440	96.1	15	1.0	0	0.0
Ipoh	3686	3637	98.7	48	1.3	1	0.0
Kangar	739	721	97.6	9	1.2	0	0.0
Kemaman	104	83	79.8	12	11.5	0	0.0
Keningau	242	224	92.6	7	2.9	0	0.0
Klang	2307	2158	93.5	36	1.6	3	0.1
Kluang	206	189	91.7	13	6.3	0	0.0
Kota Bharu	1344	1274	94.8	28	2.1	1	0.1
Kuala Krai	449	438	97.6	8	1.8	0	0.0
Kuala Lumpur	2392	2324	97.2	22	0.9	0	0.0
Kuala Pilah	618	570	92.2	18	2.9	0	0.0
Kuala Terengganu	1376	1320	95.9	29	2.1	0	0.0
Kuantan	1282	1203	93.8	28	2.2	1	0.1
Kulim	603	590	97.8	9	1.5	0	0.0
Likas	24	23	95.8	1	4.2	0	0.0
Melaka	2615	2548	97.4	38	1.5	1	0.0
Miri	1106	1093	98.8	7	0.6	1	0.1
Muar	1076	1070	99.4	4	0.4	1	0.1
Pulau Pinang	2148	2115	98.5	21	1.0	0	0.0
Putrajaya	566	540	95.4	17	3.0	0	0.0

Queen Elizabeth KK	1742	1641	94.2	32	1.8	7	0.4
Sandakan	410	398	97.1	5	1.2	1	0.2
Sarikei	546	538	98.5	8	1.5	0	0.0
Segamat	221	208	94.1	5	2.3	3	1.4
Selayang	1484	1397	94.1	53	3.6	1	0.1
Serdang	1764	1651	93.6	29	1.6	0	0.0
Seremban	2167	2105	97.1	27	1.2	0	0.0
Shah Alam	608	492	80.9	3	0.5	0	0.0
Sibu	722	709	98.2	7	1.0	0	0.0
Sri Manjung	892	873	97.9	4	0.4	0	0.0
Sultan Ismail	844	811	96.1	14	1.7	1	0.1
Sultanah Aminah JB	1191	1126	94.5	34	2.9	1	0.1
Sungai Buloh	513	494	96.3	3	0.6	0	0.0
Sungei Petani	1314	1307	99.5	4	0.3	0	0.0
Taiping	1857	1832	98.7	25	1.3	0	0.0
Tawau	400	387	96.8	2	0.5	0	0.0
Teluk Intan	1065	1052	98.8	13	1.2	0	0.0
Temerloh	815	795	97.5	12	1.5	1	0.1
Umum Sarawak	1378	1358	98.5	15	1.1	0	0.0
Pusat Perubatan UKM	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-
KK-KKM Kedah	273	267	97.8	0	0.0	0	0.0
KK-KKM Kelantan	194	187	96.4	5	2.6	0	0.0
KK-KKM Neg. Sembilan	702	670	95.4	17	2.4	5	0.7
KK-KKM Pahang	167	160	95.8	4	2.4	0	0.0
KK-KKM Pulau Pinang	-	-	-	-	-	-	-
KK-KKM Sabah	580	556	95.9	14	2.4	0	0.0
KK-KKM Sarawak	562	553	98.4	2	0.4	1	0.2
KK-KKM Terengganu	166	159	95.8	5	3.0	0	0.0
KK-KKM Static*	4238	4185	98.7	41	1.0	2	0.0

1.4 Intraoperative Complication

1.4.1 Intra-operative Complications

Table 1.4.1-1: Distribution of Type of Intra-operative Complications, CSR 2009–2018

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
No. of patients (N)	24438		28506		30611		32473		37150		40532		44534		50625		54242		55687	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Patient with intra-op complication	1645	6.7	1610	5.6	1787	5.8	1702	5.2	1998	5.4	2159	5.3	2224	5.0	2334	4.6	2649	4.9	2612	4.7
<u>Types of complications:</u>																				
PCR	858	3.5	840	2.9	936	3.1	870	2.7	1017	2.7	1100	2.7	1145	2.6	1183	2.3	1321	2.4	1281	2.3
Vitreous loss	642	2.6	639	2.2	611	2.0	529	1.6	644	1.7	661	1.6	793	1.8	855	1.7	889	1.6	958	1.7
Zonular dehiscence	372	1.5	377	1.3	362	1.2	359	1.1	391	1.0	467	1.2	602	1.4	696	1.4	856	1.6	912	1.6
Drop nucleus	40	0.2	38	0.1	58	0.2	56	0.2	63	0.2	87	0.2	90	0.2	75	0.1	118	0.2	101	0.2
Central corneal oedema	22	0.1	26	0.1	36	0.1	30	0.1	23	0.1	36	0.1	15	0.0	26	0.1	35	0.1	28	0.1
Suprachoroidal haemorrhage	13	0.1	9	0.0	8	0.0	8	0.0	8	0.0	4	0.0	4	0.0	4	0.0	11	0.0	12	0.0
Others	373	1.5	338	1.2	449	1.5	439	1.3	572	1.5	550	1.4	546	1.2	541	1.1	596	1.1	543	1.0

Table 1.4.1-2: Distribution of Type of Intra-operative Complications (Posterior Capsular Rupture) CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
No. of patients (N)	24438	28506	30611	32473	37150	40532	44534	50625	54242	55687
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
Patient with intra-op complication	1645 6.7	1610 5.6	1787 5.8	1702 5.2	1998 5.4	2159 5.3	2224 5.0	2334 4.6	2649 4.9	2612 4.7
Types of complications:										
PCR and Others**	858 3.5	840 2.9	936 3.1	870 2.7	1017 2.7	1100 2.7	1145 2.6	1183 2.3	1321 2.4	1281 2.3
PCR Only	403 1.6	402 1.4	485 1.6	481 1.5	547 1.5	588 1.4	555 1.2	561 1.1	654 1.2	602 1.1

**PCR and Others = including PCR only, and PCR+Others

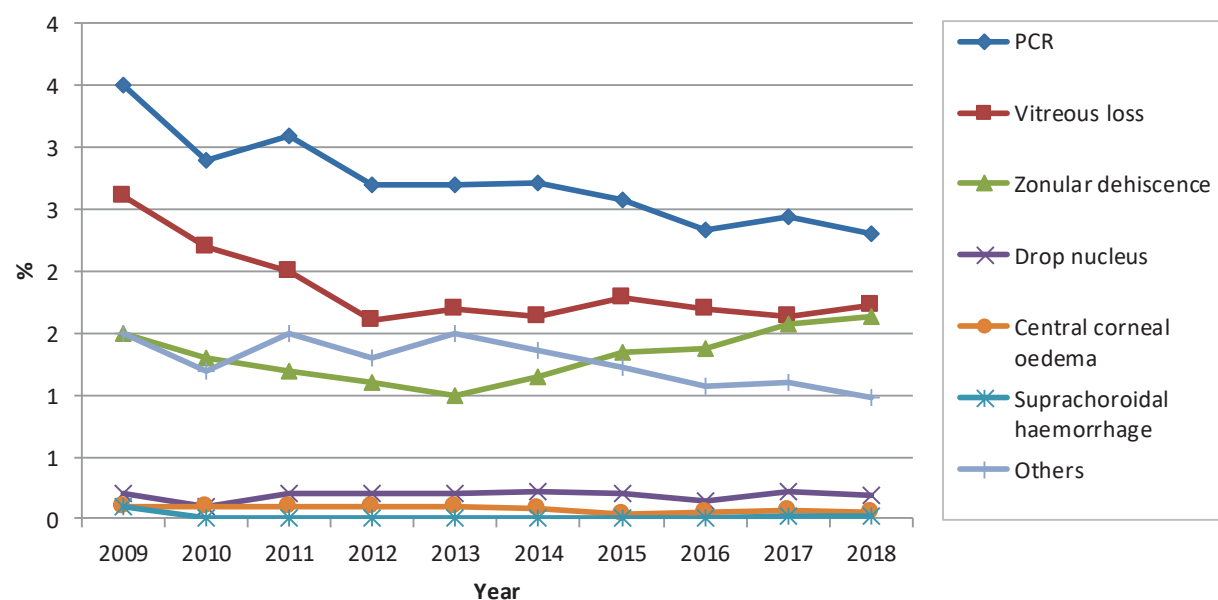


Figure 1.4.1-1: Distribution of Specific Type of Intra-operative Complications, CSR 2009–2018

1.4.2 Intra-operative Complication by Type of Cataract Surgery

Table 1.4.2-1: Intra-operative Complications by Types of Cataract Surgery, CSR 2009–2018

Year	2009			2010			2011			2012			2013		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Phaco	17717	787	4.4	21810	798	3.7	23872	927	3.9	26345	1030	3.5	31625	1112	3.5
Lens Aspiration	400	38	9.5	451	34	7.5	460	29	6.3	444	26	5.9	364	31	8.5
ECCE	5457	460	8.4	5363	442	8.2	5291	404	7.6	4784	359	7.5	4086	373	9.1
ICCE	134	64	47.8	143	64	44.8	123	53	43.1	136	58	42.6	173	68	39.3
Phaco → ECCE	573	276	48.2	586	249	42.5	652	316	48.5	621	300	48.3	769	383	49.8
Others	74	8	10.8	104	20	19.2	132	21	15.9	110	27	24.5	84	20	23.8
Missing	83	12	14.5	49	3	6.1	81	37	45.7	83	2	2.1	49	11	22.4

Year	2014			2015			2016			2017			2018		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Phaco	35429	1282	3.6	39131	1194	3.1	45346	1260	2.8	49543	1489	3.0	51209	1533	3.0
Lens Aspiration	370	23	6.2	521	35	6.7	527	23	4.4	572	43	7.5	667	40	6.0
ECCE	3613	340	9.4	3677	405	11.0	3439	370	10.8	3656	889	24.3	3243	802	24.7
ICCE	176	70	39.8	223	104	46.6	275	137	49.8	284	145	51.1	361	174	48.2
Phaco → ECCE	805	402	49.9	833	444	53.3	870	493	56.7	-	-	-	-	-	-
SICS	-	-	-	-	-	-	-	-	-	2	0	0.0	102	13	12.7
Others	118	37	31.4	144	40	27.8	168	51	30.4	185	83	44.9	105	50	47.6
Missing	21	5	23.8	5	2	40.0	0	0	0.0	0	0	0.0	0	0	0.0

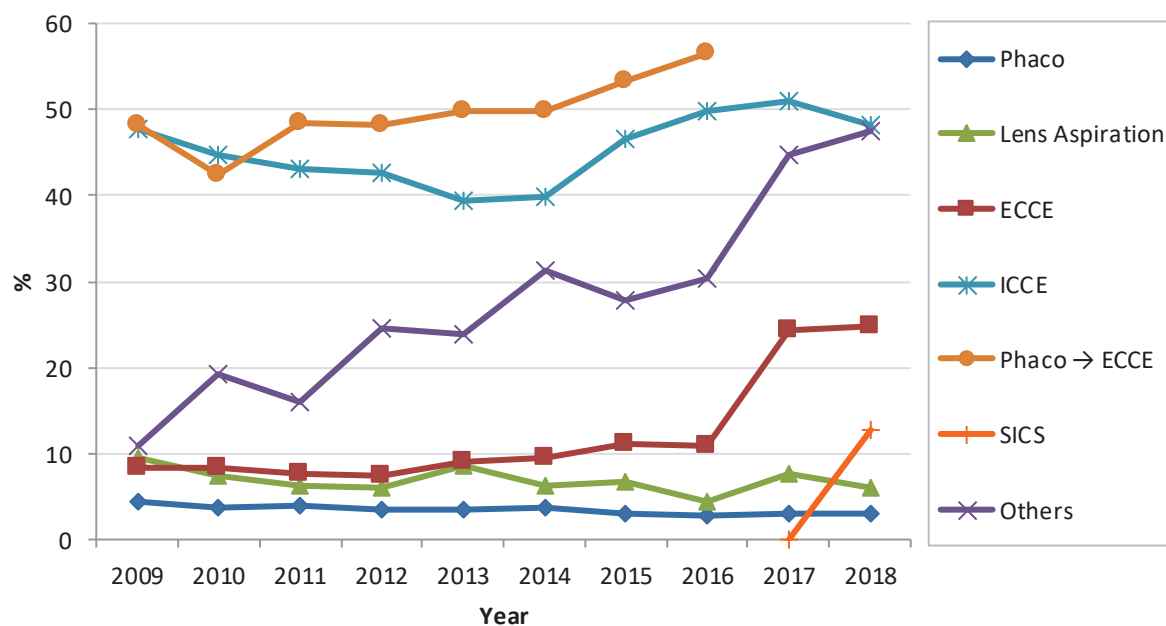


Figure 1.4.2-1: Intra-operative Complications by Type of Cataract Surgery, CSR 2009–2018

Table 1.4.2-2 Types Intra-operative Complications by Types of Cataract Surgery, CSR 2018

	All Surgeries		Phaco		ECCE		Lens Aspiration		ICCE		SICS		Others	
Number of patients (N)	55687		51209		3243		667		361		102		105	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-op complication	2612	4.7	1533	3.0	802	24.7	40	6.0	174	48.2	13	12.7	50	47.6
Types of complications:														
Posterior capsule rupture	1281	2.3	842	1.6	368	11.3	26	3.9	26	7.2	2	2.0	17	16.2
Vitreous loss	958	1.7	432	0.8	365	11.3	12	1.8	117	32.4	6	5.9	26	24.8
Zonular dehiscence	912	1.6	393	0.8	339	10.5	6	0.9	136	37.7	8	7.8	30	28.6
Dropped nucleus	101	0.2	75	0.1	21	0.6	1	0.1	1	0.3	0	0.0	3	2.9
Central corneal oedema	28	0.1	16	0.0	8	0.2	1	0.1	2	0.6	1	1.0	0	0.0
Suprachoroidal haemorrhage	12	0.0	2	0.0	5	0.2	0	0.0	5	1.4	0	0.0	0	0.0
Others	543	1.0	346	0.7	147	4.5	10	1.5	29	8.0	4	3.9	7	6.7

Table 1.4.2-3: Distribution of the Types Intra-operative Complications by SDP (All Cataract Surgeries), CSR 2018

Hospital	N	Any intra-op complication		PCR		Vitreous loss		Zonular Dehiscence		Dropped Nucleus		Suprachoroidal Haemorrhage		Central Corneal Edema		Others	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All centre	55687	2612	4.7	1281	2.3	958	1.7	912	1.6	101	0.2	12	0.0	28	0.1	543	1.0
Kemaman	116	34	29.3	19	16.4	13	11.2	10	8.6	1	0.9	0	0.0	0	0.0	12	10.3
KK-KKM Terengganu	167	17	10.2	8	4.8	5	3.0	5	3.0	0	0.0	1	0.6	0	0.0	7	4.2
Kuala Terengganu	1428	121	8.5	66	4.6	56	3.9	36	2.5	6	0.4	0	0.0	0	0.0	25	1.8
KK-KKM Kelantan	195	12	6.2	9	4.6	6	3.1	4	2.1	1	0.5	0	0.0	0	0.0	0	0.0
KK-KKM Sabah	590	41	6.9	26	4.4	16	2.7	12	2.0	5	0.8	0	0.0	0	0.0	5	0.8
Kota Bharu	1368	108	7.9	59	4.3	49	3.6	43	3.1	3	0.2	0	0.0	1	0.1	15	1.1
Batu Pahat	848	57	6.7	34	4.0	19	2.2	17	2.0	2	0.2	0	0.0	0	0.0	10	1.2
Kuala Pilah	629	63	10.0	25	4.0	32	5.1	25	4.0	5	0.8	0	0.0	2	0.3	18	2.9
Selayang	1526	113	7.4	59	3.9	45	2.9	46	3.0	8	0.5	1	0.1	0	0.0	14	0.9
Queen Elizabeth KK	1800	111	6.2	64	3.6	38	2.1	36	2.0	4	0.2	0	0.0	0	0.0	17	0.9
KK-KKM Neg. Sembilan	720	84	11.7	26	3.6	19	2.6	37	5.1	1	0.1	1	0.1	8	1.1	26	3.6
KK-KKM Pahang	169	11	6.5	6	3.6	5	3.0	4	2.4	0	0.0	0	0.0	0	0.0	3	1.8
Sibu	734	49	6.7	25	3.4	23	3.1	14	1.9	4	0.5	0	0.0	1	0.1	9	1.2
Klang	2330	160	6.9	78	3.3	48	2.1	36	1.5	4	0.2	0	0.0	2	0.1	47	2.0
Kluang	212	24	11.3	7	3.3	2	0.9	6	2.8	1	0.5	0	0.0	0	0.0	14	6.6
Kuantan	1304	74	5.7	41	3.1	18	1.4	19	1.5	3	0.2	0	0.0	0	0.0	13	1.0
Sungai Buloh	524	26	5.0	16	3.1	11	2.1	9	1.7	1	0.2	0	0.0	0	0.0	4	0.8
KK-KKM Sarawak	572	26	4.5	17	3.0	6	1.0	5	0.9	0	0.0	0	0.0	0	0.0	5	0.9
Serdang	1784	83	4.7	51	2.9	33	1.8	21	1.2	1	0.1	1	0.1	0	0.0	13	0.7
KK-KKM Kedah	279	14	5.0	8	2.9	5	1.8	3	1.1	0	0.0	0	0.0	0	0.0	5	1.8
Sandakan	428	27	6.3	12	2.8	12	2.8	13	3.0	0	0.0	0	0.0	1	0.2	3	0.7
Sultanah Aminah JB	1205	70	5.8	33	2.7	24	2.0	30	2.5	4	0.3	0	0.0	0	0.0	14	1.2
Umum Sarawak	1444	56	3.9	37	2.6	19	1.3	19	1.3	5	0.3	1	0.1	0	0.0	3	0.2
Keningau	246	11	4.5	6	2.4	7	2.8	3	1.2	0	0.0	0	0.0	0	0.0	3	1.2
Melaka	2637	102	3.9	64	2.4	44	1.7	29	1.1	4	0.2	0	0.0	0	0.0	14	0.5
Sungei Petani	1352	71	5.3	32	2.4	38	2.8	25	1.8	2	0.1	0	0.0	1	0.1	18	1.3
Kangar	752	32	4.3	17	2.3	6	0.8	12	1.6	0	0.0	2	0.3	0	0.0	4	0.5
Kuala Lumpur	2428	99	4.1	56	2.3	25	1.0	24	1.0	3	0.1	0	0.0	0	0.0	23	0.9
Kuala Krai	459	17	3.7	9	2.0	9	2.0	10	2.2	0	0.0	0	0.0	0	0.0	0	0.0

Sultan Ismail	851	36	4.2	16	1.9	17	2.0	10	1.2	0	0.0	0	0.0	1	0.1	10	1.2
Ampang	1034	45	4.4	19	1.8	21	2.0	21	2.0	0	0.0	0	0.0	0	0.0	11	1.1
Pulau Pinang	2164	95	4.4	38	1.8	34	1.6	38	1.8	4	0.2	1	0.0	0	0.0	21	1.0
Bintulu	230	11	4.8	4	1.7	8	3.5	6	2.6	0	0.0	0	0.0	0	0.0	1	0.4
Bukit Mertajam	1508	65	4.3	26	1.7	20	1.3	21	1.4	0	0.0	1	0.1	1	0.1	26	1.7
Sri Manjung	909	28	3.1	15	1.7	7	0.8	7	0.8	1	0.1	0	0.0	0	0.0	7	0.8
Kulim	615	28	4.6	10	1.6	7	1.1	11	1.8	0	0.0	0	0.0	0	0.0	9	1.5
Seremban	2188	82	3.7	35	1.6	31	1.4	26	1.2	2	0.1	0	0.0	2	0.1	27	1.2
Ipoh	3747	123	3.3	58	1.5	52	1.4	58	1.5	6	0.2	0	0.0	2	0.1	10	0.3
Tawau	413	14	3.4	6	1.5	8	1.9	7	1.7	0	0.0	0	0.0	0	0.0	1	0.2
Alor Setar	1541	39	2.5	21	1.4	13	0.8	13	0.8	5	0.3	2	0.1	0	0.0	8	0.5
Putrajaya	572	25	4.4	8	1.4	11	1.9	16	2.8	1	0.2	1	0.2	0	0.0	2	0.3
Miri	1122	42	3.7	15	1.3	11	1.0	13	1.2	1	0.1	0	0.0	0	0.0	14	1.2
Muar	1086	29	2.7	14	1.3	10	0.9	14	1.3	0	0.0	0	0.0	0	0.0	1	0.1
Temerloh	848	49	5.8	11	1.3	9	1.1	19	2.2	4	0.5	0	0.0	1	0.1	18	2.1
Shah Alam	613	25	4.1	6	1.0	3	0.5	8	1.3	0	0.0	0	0.0	3	0.5	8	1.3
Teluk Intan	1071	24	2.2	11	1.0	10	0.9	11	1.0	3	0.3	0	0.0	0	0.0	4	0.4
Sarikei	548	9	1.6	5	0.9	0	0.0	3	0.5	0	0.0	0	0.0	0	0.0	2	0.4
Segamat	223	8	3.6	2	0.9	3	1.3	2	0.9	0	0.0	0	0.0	1	0.4	4	1.8
KK-KKM Static	4261	86	2.0	38	0.9	26	0.6	31	0.7	6	0.1	0	0.0	1	0.0	14	0.3
Taiping	1863	34	1.8	13	0.7	24	1.3	23	1.2	0	0.0	0	0.0	0	0.0	0	0.0
Likas	34	2	5.9	0	0.0	0	0.0	1	2.9	0	0.0	0	0.0	0	0.0	1	2.9

1.4.3 Intra-operative Complications by Combined Surgery

Table 1.4.3-1: Distribution of Intra-operative Complications by Any Combined Surgery, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
No. of combined surgery (N)	871	1082	1194	1221	1026	1028	1458	1490	1495	1499
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
Any intra-operative complication	113 13.0	121 11.2	222 18.6	240 19.7	149 14.5	175 17.0	213 14.6	208 14.0	212 14.2	251 16.7
Types of complications:										
PCR	62 7.1	61 5.6	140 11.7	146 12.0	85 8.3	111 10.8	129 8.8	127 8.5	132 8.8	130 8.7
Vitreous loss	51 5.9	53 4.9	101 8.5	123 10.1	75 7.3	83 8.1	99 6.8	102 6.8	111 7.4	129 8.6
Zonular dehiscence	21 2.4	28 2.6	49 4.1	61 5.0	37 3.6	46 4.5	65 4.5	71 4.8	70 4.7	108 7.2
Dropped nucleus	8 0.9	10 0.9	20 1.7	16 1.3	12 1.2	18 1.8	15 1.0	13 0.9	22 1.5	17 1.1
Central corneal oedema	1 0.1	2 0.2	0 0.0	2 0.2	1 0.1	2 0.2	1 0.1	0 0.0	2 0.1	2 0.1
Suprachoroidal haemorrhage	4 0.5	1 0.1	2 0.2	2 0.2	0 0.0	1 0.1	1 0.1	0 0.0	0 0.0	2 0.1
Others	21 2.4	24 2.2	29 2.4	38 3.1	25 2.4	22 2.1	34 2.3	24 1.6	29 1.9	29 1.9

Table 1.4.3-2: Distribution of Intra-operative Complications by Specific Combined Surgery, CSR 2018

	All Surgeries	Any Combined Surgery	Pterygium Surgery	Filtering Surgery	Vitreo-Retinal Surgery	Penetrating Keratoplasty	Others
No. of patients (N)	55687	1499	95	76	858	2	495
	n %	n %	n %	n %	n %	n %	n %
Any intra-op complication	2612 4.7	251 16.7	8 8.4	3 3.9	57 6.6	0 0.0	192 38.8
Types of complications:							
PCR	1281 2.3	130 8.7	2 2.1	1 1.3	33 3.8	0 0.0	101 20.4
Vitreous loss	958 1.7	129 8.6	5 5.3	1 1.3	11 1.3	0 0.0	119 24.0
Zonular dehiscence	912 1.6	108 7.2	4 4.2	2 2.6	19 2.2	0 0.0	85 17.2
Dropped nucleus	101 0.2	17 1.1	1 1.1	0 0.0	8 0.9	0 0.0	9 1.8
Central corneal oedema	28 0.1	2 0.1	0 0.0	0 0.0	0 0.0	0 0.0	2 0.4
Suprachoroidal haemorrhage	12 0.0	2 0.1	1 1.1	0 0.0	1 0.1	0 0.0	0 0.0
Others	543 1.0	29 1.9	1 1.1	0 0.0	11 1.3	0 0.0	18 3.6

Table 1.4.3-3: Distribution of Intra-operative Complications when Combined with Filtering Surgery, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
N	132	121	64	71	114	95	102	75	63	76
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
Any intra-op complication	16 12.1	8 6.6	5 7.8	3 4.2	8 7.0	4 4.2	5 4.9	5 6.7	2 3.2	3 3.9
Types of complications:										
Posterior capsule rupture	4 3.0	3 2.5	1 1.6	2 2.8	3 2.6	3 3.2	1 1.0	3 4.0	0 0.0	1 1.3
Vitreous loss	7 5.3	2 1.7	3 4.7	1 1.4	1 0.9	1 1.1	2 2.0	3 4.0	0 0.0	1 1.3
Zonular dehiscence	5 3.8	1 0.8	3 4.7	0 0.0	5 4.4	1 1.1	2 2.0	2 2.7	2 3.2	2 2.6
Dropped nucleus	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Central corneal oedema	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Suprachoroidal haemorrhage	2 1.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Others	3 2.3	3 2.5	0 0.0	0 0.0	1 0.9	0 0.0	1 1.0	0 0.0	0 0.0	0 0.0

Table 1.4.3-4: Distribution of Intra-operative Complications when Combined with Vitreoretinal Surgery, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
N	402	601	672	585	536	532	893	890	893	858
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
Any intra-op complication	32 8.0	35 5.8	69 10.3	45 7.7	32 6.0	41 7.7	65 7.3	54 6.1	58 6.5	57 6.6
Types of complications:										
Posterior capsule rupture	18 4.5	22 3.7	41 6.1	23 3.9	16 3.0	21 3.9	43 4.8	29 3.3	36 4.0	33 3.8
Vitreous loss	5 1.2	9 1.5	10 1.5	8 1.4	9 1.7	5 0.9	19 2.1	14 1.6	17 1.9	11 1.3
Zonular dehiscence	2 0.5	5 0.8	13 1.9	6 1.0	4 0.7	13 2.4	16 1.8	15 1.7	15 1.7	19 2.2
Dropped nucleus	6 1.5	6 1.0	15 2.2	7 1.2	6 1.1	11 2.1	6 0.7	8 0.9	14 1.6	8 0.9
Central corneal oedema	0 0.0	0 0.0	0 0.0	0 0.0	1 0.2	0 0.0	0 0.0	1 0.1	1 0.1	1 0.1
Suprachoroidal haemorrhage	2 0.5	0 0.0	2 0.3	1 0.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Others	5 1.2	4 0.7	10 1.5	15 2.6	5 0.9	7 1.3	8 0.9	10 1.1	9 1.0	11 1.3

1.4.4 Intra-operative Complications by Types of Local Anaesthesia

Table 1.4.4-1: Intra-operative Complications by Types of Local Anaesthesia, CSR 2018

	All local anaesthesia		Retrobulbar		Peribulbar		Subtenon		Sub-Conjunctival		Facial Block		Topical		Intracameral	
N	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-op complication	2403	4.6	27	4.8	11	6.7	926	13.4	66	7.6	1	11.1	1800	4.3	875	4.3
Types of complications:																
Posterior capsule rupture	1181	2.3	14	2.5	5	3.0	410	5.9	26	3.0	0	0.0	890	2.1	426	2.1
Vitreous loss	884	1.7	1	0.2	2	1.2	443	6.4	18	2.1	0	0.0	657	1.6	291	1.4
Zonular dehiscence	836	1.6	8	1.4	6	3.6	397	5.7	27	3.1	1	11.1	622	1.5	293	1.4
Dropped nucleus	91	0.2	1	0.2	2	1.2	27	0.4	1	0.1	0	0.0	73	0.2	44	0.2
Central corneal oedema	25	0.0	0	0.0	0	0.0	10	0.1	1	0.1	0	0.0	22	0.1	16	0.1
Suprachoroidal haemorrhage	10	0.0	0	0.0	0	0.0	7	0.1	0	0.0	0	0.0	5	0.0	1	0.0
Other	502	1.0	5	0.9	1	0.6	182	2.6	20	2.3	0	0.0	376	0.9	188	0.9

Number or percentage may be more than total or 100% as patient might have more than one intra-operative complication.

1.4.5 Intra-operative Complications by Surgeon Status

Table 1.4.5-1: Intra-operative Complications by Surgeon Status (All Surgery), CSR 2009–2018

(1) Specialist

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
N	19400		24216		25590		27684		32861		36197		39624		44995		47641		49791	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-operative complication	1218	6.3	1248	5.2	1368	5.3	1323	4.8	1649	5	1758	4.9	1791	4.5	1866	4.1	2095	4.4	2165	4.3
Type of complications:																				
PCR	610	3.1	649	2.7	706	2.8	642	2.3	803	2.4	864	2.4	864	2.2	893	2	996	2.1	1003	2
Vitreous loss	474	2.4	473	2	438	1.7	382	1.4	513	1.6	504	1.4	590	1.5	669	1.5	717	1.5	748	1.5
Zonular dehiscence	293	1.5	300	1.2	285	1.1	282	1	337	1	391	1.1	510	1.3	594	1.3	669	1.4	784	1.6
Dropped nucleus	30	0.2	33	0.1	49	0.2	43	0.2	52	0.2	71	0.2	77	0.2	59	0.1	92	0.2	82	0.2
Central corneal edema	13	0.1	19	0.1	33	0.1	23	0.1	20	0.1	29	0.1	14	0	22	0	29	0.1	26	0.1
Suprachoroidal hemorrhage	10	0.1	6	0	7	0	7	0	6	0	4	0	3	0	4	0	9	0	10	0
Others	289	1.5	254	1	347	1.4	371	1.3	499	1.5	466	1.3	468	1.2	439	1	484	1	484	1

(2) Gazetting Specialist

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
N	2053		1405		2487		2411		2014		2034		2251		2282		3107		2770	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-operative complication	171	8.3	98	7	182	7.3	190	7.9	147	7.3	208	10.2	206	9.2	207	9.1	240	7.7	207	7.5
Type of complications:																				
PCR	96	4.7	44	3.1	113	4.5	125	5.2	90	4.5	116	5.7	127	5.6	127	5.6	145	4.7	124	4.5
Vitreous loss	73	3.6	35	2.5	84	3.4	72	3	45	2.2	72	3.5	107	4.8	85	3.7	93	3	94	3.4
Zonular dehiscence	33	1.6	30	2.1	33	1.3	34	1.4	24	1.2	41	2	48	2.1	41	1.8	67	2.2	61	2.2

Dropped nucleus	3	0.1	2	0.1	4	0.2	8	0.3	6	0.3	5	0.2	9	0.4	9	0.4	16	0.5	9	0.3
Central corneal edema	7	0.3	3	0.2	0	0	2	0.1	2	0.1	5	0.2	1	0	3	0.1	3	0.1	2	0.1
Suprachoroidal hemorrhage	2	0.1	1	0.1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Others	28	1.4	27	1.9	27	1.1	31	1.3	32	1.6	49	2.4	42	1.9	56	2.5	35	1.1	34	1.2

(3) Medical Officer

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
N	2750		2871		2478		2354		2244		2249		2558		3090		3340		2989	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-operative complication	242	8.8	263	9.2	202	8.2	189	8	199	8.9	189	8.4	220	8.6	254	8.2	310	9.3	239	8
<u>Type of complications:</u>																				
PCR	139	5.1	147	5.1	116	4.7	103	4.4	124	5.5	117	5.2	150	5.9	158	5.1	178	5.3	154	5.2
Vitreous loss	92	3.3	131	4.6	89	3.6	75	3.2	86	3.8	82	3.6	92	3.6	100	3.2	124	3.7	116	3.9
Zonular dehiscence	45	1.6	47	1.6	43	1.7	43	1.8	30	1.3	35	1.6	41	1.6	60	1.9	71	2.1	66	2.2
Dropped nucleus	7	0.3	3	0.1	5	0.2	5	0.2	5	0.2	11	0.5	4	0.2	7	0.2	10	0.3	10	0.3
Central corneal edema	2	0.1	4	0.1	3	0.1	5	0.2	1	0	2	0.1	0	0	1	0	3	0.1	0	0
Suprachoroidal hemorrhage	1	0	2	0.1	1	0	1	0	1	0	0	0	1	0	0	0	1	0	2	0.1
Others	56	2	56	2	42	1.7	37	1.6	38	1.7	34	1.5	35	1.4	45	1.5	76	2.3	25	0.8

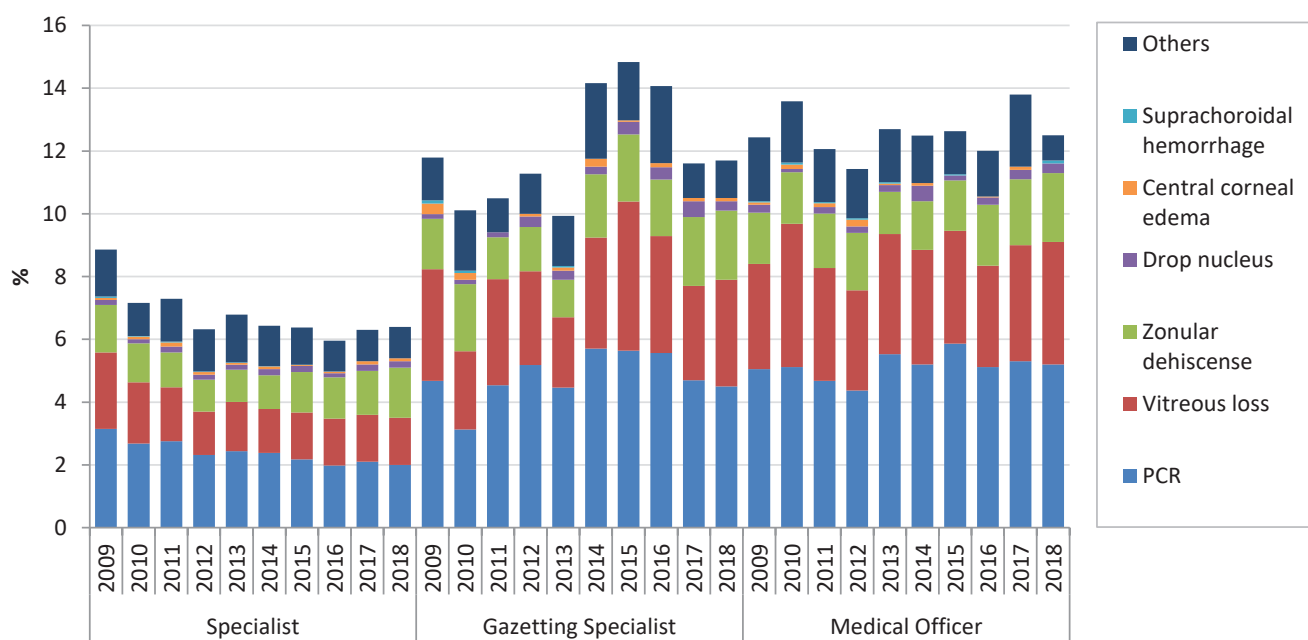


Table 1.4.5-2: Percentage Distribution of Intra-operative Complications by Surgeon Status (All Surgery), CSR 2009–2018

Table 1.4.5-3: Intra-operative Complications by Surgeon Status (Phaco), CSR 2009–2018

Specialist

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
N	15206		19797		20963		23291		28774		32417		35766		41212		44302		46389	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-operative complication	627	4.1	680	3.4	780	3.7	755	3.2	977	3.4	1065	3.3	1021	2.9	1037	2.5	1214	2.7	1294	2.8
Type of complications:																				
PCR	354	2.3	408	2.1	453	2.2	413	1.8	534	1.9	575	1.8	560	1.6	554	1.3	659	1.5	671	1.4
Vitreous loss	201	1.3	211	1.1	202	1	168	0.7	230	0.8	223	0.7	243	0.7	276	0.7	297	0.7	337	0.7
Zonular dehiscence	118	0.8	113	0.6	116	0.6	121	0.5	160	0.6	179	0.6	216	0.6	214	0.5	267	0.6	345	0.7
Dropped nucleus	24	0.2	26	0.1	37	0.2	29	0.1	42	0.1	57	0.2	55	0.2	48	0.1	72	0.2	59	0.1
Central corneal edema	10	0.1	13	0.1	24	0.1	14	0.1	8	0	18	0.1	11	0	16	0	19	0	15	0
Suprachoroidal hemorrhage	3	0	3	0	1	0	4	0	2	0	0	0	0	0	1	0	3	0	2	0
Others	153	1	136	0.7	195	0.9	201	0.9	284	1	291	0.9	261	0.7	274	0.7	302	0.7	315	0.7

(1) Gazetting Specialist

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
N	1422		929		1845		1850		1694		1776		1899		2021		2807		2512	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-operative complication	86	6	39	4.2	86	4.7	102	5.5	74	4.4	132	7.4	96	5.1	136	6.7	147	5.2	113	4.5
Type of complications:																				
PCR	60	4.2	23	2.5	67	3.6	72	3.9	54	3.2	89	5	70	3.7	85	4.2	100	3.6	76	3
Vitreous loss	36	2.5	10	1.1	35	1.9	31	1.7	21	1.2	41	2.3	40	2.1	46	2.3	48	1.7	41	1.6
Zonular dehiscence	12	0.8	8	0.9	10	0.5	10	0.5	4	0.2	14	0.8	8	0.4	17	0.8	25	0.9	26	1
Dropped nucleus	2	0.1	2	0.2	1	0.1	7	0.4	4	0.2	4	0.2	7	0.4	5	0.2	12	0.4	8	0.3
Central corneal edema	3	0.2	2	0.2	0	0	2	0.1	1	0.1	3	0.2	1	0.1	2	0.1	3	0.1	1	0
Suprachoroidal hemorrhage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	12	0.8	9	1	9	0.5	17	0.9	17	1	28	1.6	20	1.1	41	2	21	0.7	19	0.8

(2) Medical Officer

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
N	923		1078		1050		1182		1132		1189		1372		1862		2283		2171	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Any intra-operative complication	64	6.9	79	7.3	61	5.8	73	6.2	61	5.4	83	7	75	5.5	84	4.5	125	5.5	125	5.8
<u>Type of complications:</u>																				
PCR	47	5.1	58	5.4	48	4.6	53	4.5	45	4	65	5.5	59	4.3	68	3.7	89	3.9	95	4.4
Vitreous loss	27	2.9	41	3.8	33	3.1	27	2.3	28	2.5	35	2.9	22	1.6	30	1.6	41	1.8	54	2.5
Zonular dehiscence	7	0.8	12	1.1	4	0.4	13	1.1	9	0.8	10	0.8	9	0.7	13	0.7	10	0.4	21	1
Dropped nucleus	2	0.2	3	0.3	4	0.4	3	0.3	5	0.4	11	0.9	2	0.1	6	0.3	5	0.2	8	0.4
Central corneal edema	2	0.2	4	0.4	0	0	3	0.3	0	0	0	0	0	0	0	0	2	0.1	0	0
Suprachoroidal hemorrhage	0	0	1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	12	1.3	8	0.7	9	0.9	5	0.4	4	0.4	7	0.6	8	0.6	6	0.3	28	1.2	12	0.6

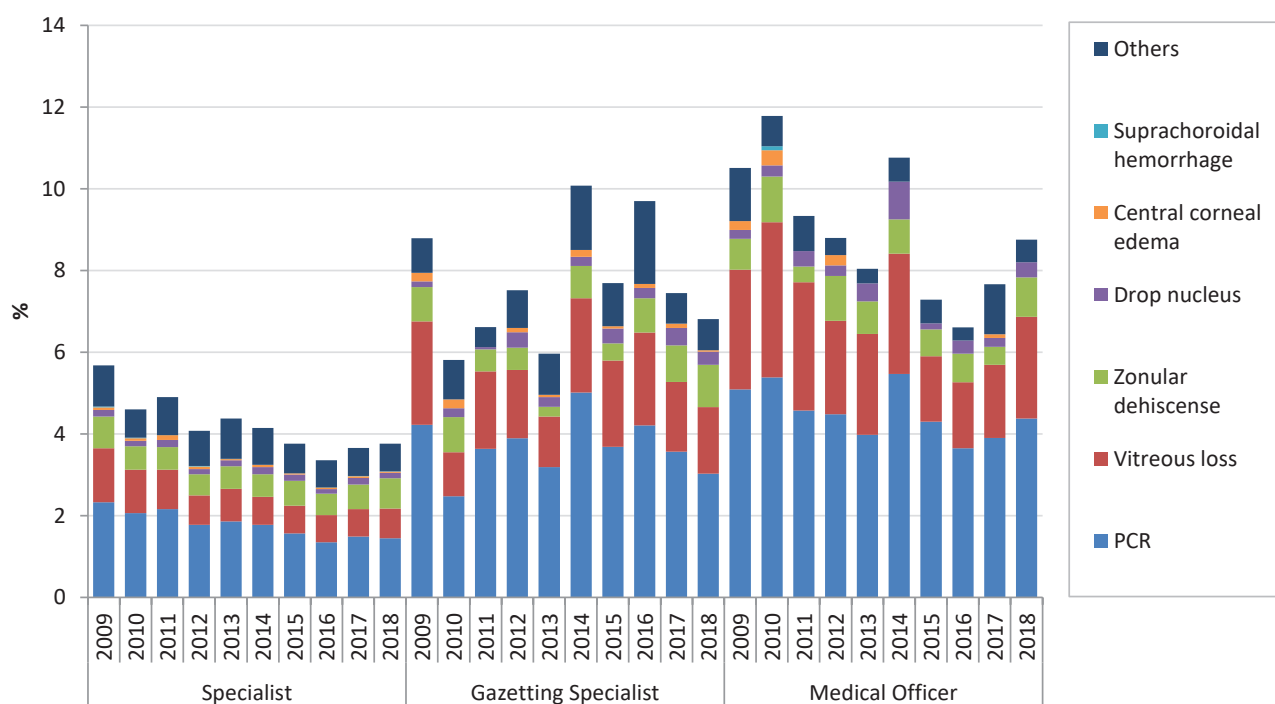


Figure 1.4.5-1: Percentage Distribution of Intra-operative Complications by Surgeon Status (Phaco), CSR 2009–2018

1.4.6 Posterior Capsular Rupture (PCR)

Table 1.4.6-1: PCR by SDP, CSR 2009–2018

Hospital	2009			2010			2011			2012			2013		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Kemaman	-	-	-	-	-	-	-	-	-	-	-	-	47	0	0
KK-KKM Terengganu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kuala Terengganu	743	35	4.7	714	28	3.9	770	34	4.4	765	20	2.6	1014	39	3.8
KK-KKM Kelantan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kota Bharu	911	33	3.6	960	31	3.2	946	40	4.2	545	13	2.4	682	16	2.3
Batu Pahat	602	26	4.3	411	15	3.6	554	30	5.4	608	42	6.9	433	22	5.1
Kuala Pilah	290	7	2.4	322	8	2.5	483	10	2.1	429	8	1.9	492	6	1.2
Selayang	1418	42	3	1699	71	4.2	1859	100	5.4	1829	83	4.5	1337	51	3.8
Queen Elizabeth KK	433	16	3.7	624	24	3.8	686	46	6.7	763	38	5	978	66	6.7
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Pahang	-	-	-	-	-	-	-	-	-	-	-	-	64	2	3.1
Sibu	387	6	1.6	455	12	2.6	505	10	2	745	11	1.5	900	17	1.9
Klang	904	27	3	1007	26	2.6	1061	20	1.9	1411	6	0.4	1612	12	0.7
Kluang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kuantan	293	5	1.7	615	5	0.8	680	20	2.9	684	7	1	619	11	1.8
Sungai Buloh	387	19	4.9	468	22	4.7	450	13	2.9	514	14	2.7	580	22	3.8
KK-KKM Sarawak	-	-	-	-	-	-	-	-	-	-	-	-	76	0	0
Serdang	598	32	5.4	520	17	3.3	666	28	4.2	709	20	2.8	1023	43	4.2
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sandakan	158	3	1.9	208	13	6.3	271	8	3	265	4	1.5	411	15	3.6
Sultanah Aminah JB	1318	57	4.3	1377	30	2.2	1127	29	2.6	1195	32	2.7	1350	42	3.1
Umum Sarawak	893	38	4.3	1207	45	3.7	1131	35	3.1	1657	45	2.7	1721	32	1.9
Keningau	31	1	3.2	76	1	1.3	52	0	0	17	0	0	15	1	6.7
Melaka	1387	84	6.1	1659	76	4.6	1642	61	3.7	1488	52	3.5	1719	83	4.8
Sungei Petani	684	9	1.3	558	8	1.4	811	35	4.3	845	19	2.2	930	23	2.5
Kangar	399	11	2.8	400	13	3.3	403	15	3.7	454	13	2.9	466	22	4.7
Kuala Lumpur	1405	35	2.5	1648	46	2.8	1622	19	1.2	1516	24	1.6	1150	15	1.3
Kuala Krai	175	4	2.3	217	3	1.4	240	11	4.6	247	12	4.9	397	14	3.5
Sultan Ismail	185	2	1.1	258	10	3.9	283	7	2.5	279	8	2.9	374	5	1.3
Ampang	433	14	3.2	627	32	5.1	708	27	3.8	896	40	4.5	983	31	3.2
Pulau Pinang	1374	46	3.3	1876	62	3.3	2186	42	1.9	1330	26	2	1696	46	2.7
Bintulu	124	10	8.1	258	7	2.7	332	8	2.4	391	7	1.8	383	1	0.3
Bukit Mertajam	743	16	2.2	804	22	2.7	803	26	3.2	928	31	3.3	909	21	2.3
Sri Manjung	327	7	2.1	387	6	1.6	420	10	2.4	466	9	1.9	832	17	2
Kulim	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seremban	1229	79	6.4	1519	48	3.2	1605	34	2.1	1559	67	4.3	1520	46	3
Ipoh	2137	48	2.2	2199	32	1.5	1826	56	3.1	2932	65	2.2	3032	88	2.9
Tawau	298	9	3	401	15	3.7	575	16	2.8	648	9	1.4	503	45	8.9
Alor Setar	1110	22	2	1527	25	1.6	1939	46	2.4	1835	46	2.5	1758	48	2.7
Putrajaya	251	9	3.6	282	8	2.8	329	11	3.3	355	4	1.1	391	10	2.6
Miri	404	5	1.2	577	8	1.4	657	4	0.6	901	1	0.1	915	1	0.1
Muar	542	29	5.4	617	15	2.4	692	20	2.9	665	26	3.9	717	42	5.9
Temerloh	640	28	4.4	450	10	2.2	681	31	4.6	868	21	2.4	866	15	1.7
Shah Alam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teluk Intan	612	22	3.6	690	27	3.9	663	10	1.5	616	15	2.4	1102	20	1.8
Sarikei	-	-	-	-	-	-	-	-	-	-	-	-	286	7	2.4
Segamat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*KK-KKM Static	-	-	-	-	-	-	-	-	-	-	-	-	1583	2	0.1
Taiping	612	22	3.6	889	19	2.1	953	24	2.5	1118	32	2.9	1284	18	1.4
Likas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Langkawi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tanah Merah	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*From year 2017 backwards, it is PPKM-HS alone.

Hospital	2014			2015			2016			2017			2018		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Kemaman	72	0	0	3	0	0	28	3	10.7	161	27	16.8	116	19	16.4
KK-KKM Terengganu	38	0	0	40	0	0	50	2	4	277	12	4.3	167	8	4.8
Kuala Terengganu	900	36	4	987	42	4.3	1321	54	4.1	1393	46	3.3	1428	66	4.6
KK-KKM Kelantan	186	8	4.3	2	0	0	62	1	1.6	138	4	2.9	195	9	4.6
KK-KKM Sabah	-	-	-	131	2	1.5	275	5	1.8	480	17	3.5	590	26	4.4
Kota Bharu	285	1	0.4	921	40	4.3	1113	50	4.5	1396	55	3.9	1368	59	4.3
Batu Pahat	467	22	4.7	561	15	2.7	666	11	1.7	649	16	2.5	848	34	4
Kuala Pilah	493	5	1	452	15	3.3	600	26	4.3	646	36	5.6	629	25	4
Selayang	899	38	4.2	1353	35	2.6	1287	31	2.4	1137	30	2.6	1526	59	3.9
Queen Elizabeth KK	1040	56	5.4	1133	44	3.9	1397	66	4.7	1739	76	4.4	1800	64	3.6
KK-KKM Neg. Sembilan	-	-	-	4	0	0	220	7	3.2	444	21	4.7	720	26	3.6
KK-KKM Pahang	-	-	-	187	7	3.7	119	3	2.5	294	12	4.1	169	6	3.6
Sibu	866	9	1	581	23	4	796	21	2.6	800	24	3	734	25	3.4
Klang	1461	13	0.9	1978	39	2	2227	67	3	2321	43	1.9	2330	78	3.3
Kluang	-	-	-	-	-	-	-	-	-	227	3	1.3	212	7	3.3
Kuantan	576	21	3.6	1079	44	4.1	1225	36	2.9	1401	46	3.3	1304	41	3.1
Sungai Buloh	693	11	1.6	774	12	1.6	818	16	2	731	17	2.3	524	16	3.1
KK-KKM Sarawak	831	20	2.4	1131	36	3.2	917	18	2	885	18	2	572	17	3
Serdang	1265	51	4	982	17	1.7	536	11	2.1	882	17	1.9	1784	51	2.9
KK-KKM Kedah	-	-	-	209	2	1	339	5	1.5	352	8	2.3	279	8	2.9
Sandakan	237	4	1.7	499	5	1	414	9	2.2	513	19	3.7	428	12	2.8
Sultanah Aminah JB	1381	47	3.4	1643	47	2.9	1575	46	2.9	921	24	2.6	1205	33	2.7
Umum Sarawak	2068	84	4.1	2019	63	3.1	1879	50	2.7	1822	58	3.2	1444	37	2.6
Keningau	133	7	5.3	82	0	0	370	7	1.9	324	10	3.1	246	6	2.4
Melaka	2139	86	4	2389	72	3	2549	66	2.6	2394	60	2.5	2637	64	2.4
Sungei Petani	1022	29	2.8	1006	27	2.7	1138	25	2.2	1375	39	2.8	1352	32	2.4
Kangar	426	24	5.6	576	31	5.4	652	24	3.7	743	20	2.7	752	17	2.3
Kuala Lumpur	1932	39	2	1609	18	1.1	1556	24	1.5	1464	33	2.3	2428	56	2.3
Kuala Krai	365	27	7.4	389	16	4.1	344	8	2.3	347	16	4.6	459	9	2
Sultan Ismail	609	16	2.6	827	26	3.1	885	25	2.8	814	21	2.6	851	16	1.9
Ampang	946	37	3.9	880	45	5.1	750	32	4.3	1128	35	3.1	1034	19	1.8
Pulau Pinang	1791	27	1.5	2240	35	1.6	2591	46	1.8	1649	36	2.2	2164	38	1.8
Bintulu	374	0	0	350	5	1.4	197	9	4.6	261	2	0.8	230	4	1.7
Bukit Mertajam	998	24	2.4	1265	14	1.1	1379	19	1.4	1426	25	1.8	1508	26	1.7
Sri Manjung	625	17	2.7	666	13	2	684	19	2.8	868	18	2.1	909	15	1.7
Kulim	265	3	1.1	418	8	1.9	569	4	0.7	609	7	1.1	615	10	1.6
Seremban	1585	41	2.6	1726	39	2.3	1832	38	2.1	1942	34	1.8	2188	35	1.6
Ipoh	2759	62	2.2	2547	87	3.4	3123	68	2.2	3466	71	2	3747	58	1.5
Tawau	540	38	7	607	22	3.6	681	23	3.4	299	15	5	413	6	1.5
Alor Setar	2106	53	2.5	2336	50	2.1	2616	37	1.4	2563	53	2.1	1541	21	1.4
Putrajaya	367	9	2.5	463	17	3.7	429	8	1.9	498	11	2.2	572	8	1.4
Miri	949	5	0.5	903	10	1.1	1045	13	1.2	1184	24	2	1122	15	1.3
Muar	729	48	6.6	928	26	2.8	1085	18	1.7	1039	9	0.9	1086	14	1.3
Temerloh	1047	18	1.7	851	15	1.8	1009	22	2.2	927	17	1.8	848	11	1.3
Shah Alam	-	-	-	-	-	-	353	6	1.7	668	4	0.6	613	6	1
Teluk Intan	1013	10	1	932	30	3.2	1327	34	2.6	1206	34	2.8	1071	11	1
Sarikei	555	9	1.6	647	4	0.6	694	6	0.9	431	4	0.9	548	5	0.9

Segamat	-	-	-	-	-	-	121	5	4.1	398	3	0.8	223	2	0.9
*KK-KKM Static	2266	29	1.3	1824	28	1.5	2900	30	1	3507	43	1.2	4261	38	0.9
Taiping	1233	16	1.3	1320	19	1.4	1575	23	1.5	1765	15	0.8	1863	13	0.7
Likas	-	-	-	15	0	0	23	0	0	33	1	3	34	0	0
Langkawi	-	-	-	60	0	0	89	4	4.5	0	0	0	-	-	-
Pusat Perubatan UKM	-	-	-	-	-	-	-	-	-	1182	30	2.5	-	-	-
Tanah Merah	-	-	-	9	0	0	18	0	0	0	0	0	-	-	-
KK-KKM Johor	-	-	-	-	-	-	93	0	0	33	0	0	-	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	84	2	2.4	90	2	2.2	-	-	-

Table 1.4.6-2: PCR by Surgeon Status and SDP (Phaco), CSR 2018

(N=total no. of cases of phaco; n=no. of cases of PCR in phaco)

Hospital	2018			By surgeon status:								
	Phaco			Specialist			Gazetting Specialist			Medical Officer		
	N	n	%	N	n	%	N	n	%	N	n	%
Kemaman	79	8	10.1	79	8	10.1	0	0	0.0	0	0	0.0
KK-KKM Kelantan	162	7	4.3	161	7	4.3	0	0	0.0	1	0	0.0
KK-KKM Terengganu	153	6	3.9	147	6	4.1	4	0	0.0	2	0	0.0
Kluang	193	7	3.6	190	7	3.7	3	0	0.0	0	0	0.0
Selayang	1431	47	3.3	1138	33	2.9	96	2	2.1	197	12	6.1
Kuala Terengganu	1249	40	3.2	1115	33	3.0	117	5	4.3	17	2	11.8
KK-KKM Sabah	543	17	3.1	532	16	3.0	3	0	0.0	8	1	12.5
KK-KKM Neg. Sembilan	673	20	3.0	655	19	2.9	13	1	7.7	5	0	0.0
Kota Bharu	1123	32	2.8	1065	28	2.6	30	2	6.7	28	2	7.1
Sibu	703	20	2.8	595	14	2.4	0	0	0.0	108	6	5.6
Klang	2153	56	2.6	2038	47	2.3	78	4	5.1	37	5	13.5
Kuala Pilah	586	15	2.6	452	9	2.0	126	5	4.0	8	1	12.5
Queen Elizabeth KK	1528	39	2.6	1210	26	2.1	314	13	4.1	4	0	0.0
KK-KKM Pahang	155	4	2.6	145	4	2.8	8	0	0.0	2	0	0.0
Batu Pahat	771	19	2.5	643	14	2.2	128	5	3.9	0	0	0.0
Kuantan	1106	24	2.2	923	14	1.5	109	7	6.4	74	3	4.1
Umum Sarawak	1387	30	2.2	1131	21	1.9	187	5	2.7	69	4	5.8
KK-KKM Sarawak	535	11	2.1	532	11	2.1	3	0	0.0	0	0	0.0
Kuala Lumpur	2220	44	2.0	2136	40	1.9	55	1	1.8	29	3	10.3
Sungei Petani	1280	25	2.0	1238	21	1.7	8	0	0.0	34	4	11.8
KK-KKM Kedah	245	5	2.0	235	5	2.1	3	0	0.0	7	0	0.0
Sungai Buloh	471	9	1.9	463	8	1.7	0	0	0.0	8	1	12.5
Bintulu	219	4	1.8	213	4	1.9	0	0	0.0	6	0	0.0
Melaka	2473	44	1.8	2095	28	1.3	190	2	1.1	188	14	7.4

Sultanah Aminah JB	1134	20	1.8	1057	18	1.7	58	1	1.7	19	1	5.3
Ampang	927	16	1.7	689	6	0.9	79	4	5.1	159	6	3.8
Kangar	628	10	1.6	581	8	1.4	36	2	5.6	11	0	0.0
Serdang	1648	27	1.6	1562	23	1.5	11	0	0.0	75	4	5.3
Sri Manjung	887	14	1.6	887	14	1.6	0	0	0.0	0	0	0.0
Sultan Ismail	785	11	1.4	687	8	1.2	98	3	3.1	0	0	0.0
Ipoh	3543	45	1.3	3153	30	1.0	146	4	2.7	244	11	4.5
Pulau Pinang	2096	28	1.3	2026	26	1.3	69	2	2.9	1	0	0.0
Tawau	356	4	1.1	356	4	1.1	0	0	0.0	0	0	0.0
Bukit Mertajam	1444	15	1.0	1354	15	1.1	47	0	0.0	43	0	0.0
Miri	1053	11	1.0	864	5	0.6	150	4	2.7	39	2	5.1
Seremban	2004	20	1.0	1777	18	1.0	9	0	0.0	218	2	0.9
Alor Setar	1394	12	0.9	1301	9	0.7	41	1	2.4	52	2	3.8
Keningau	226	2	0.9	17	1	5.9	2	0	0.0	207	1	0.5
Sandakan	349	3	0.9	349	3	0.9	0	0	0.0	0	0	0.0
Shah Alam	586	5	0.9	525	5	1.0	44	0	0.0	17	0	0.0
Kuala Krai	354	3	0.8	354	3	0.8	0	0	0.0	0	0	0.0
Putrajaya	504	4	0.8	480	3	0.6	1	0	0.0	23	1	4.3
Temerloh	766	6	0.8	726	6	0.8	40	0	0.0	0	0	0.0
KK-KKM Static	4117	32	0.8	3682	25	0.7	73	1	1.4	225	6	2.7
Muar	1013	7	0.7	938	7	0.7	75	0	0.0	0	0	0.0
Sarikei	533	3	0.6	528	2	0.4	0	0	0.0	5	1	20.0
Teluk Intan	981	6	0.6	922	4	0.4	58	2	3.4	1	0	0.0
Kulim	557	2	0.4	557	2	0.4	0	0	0.0	0	0	0.0
Taiping	1695	3	0.2	1695	3	0.2	0	0	0.0	0	0	0.0
Likas	1	0	0.0	1	0	0.0	0	0	0.0	0	0	0.0
Segamat	190	0	0.0	190	0	0.0	0	0	0.0	0	0	0.0

*No. of total phaco (N) and total no. of phaco by surgeon status does not tally as surgeon status is missing in some CSR entries.

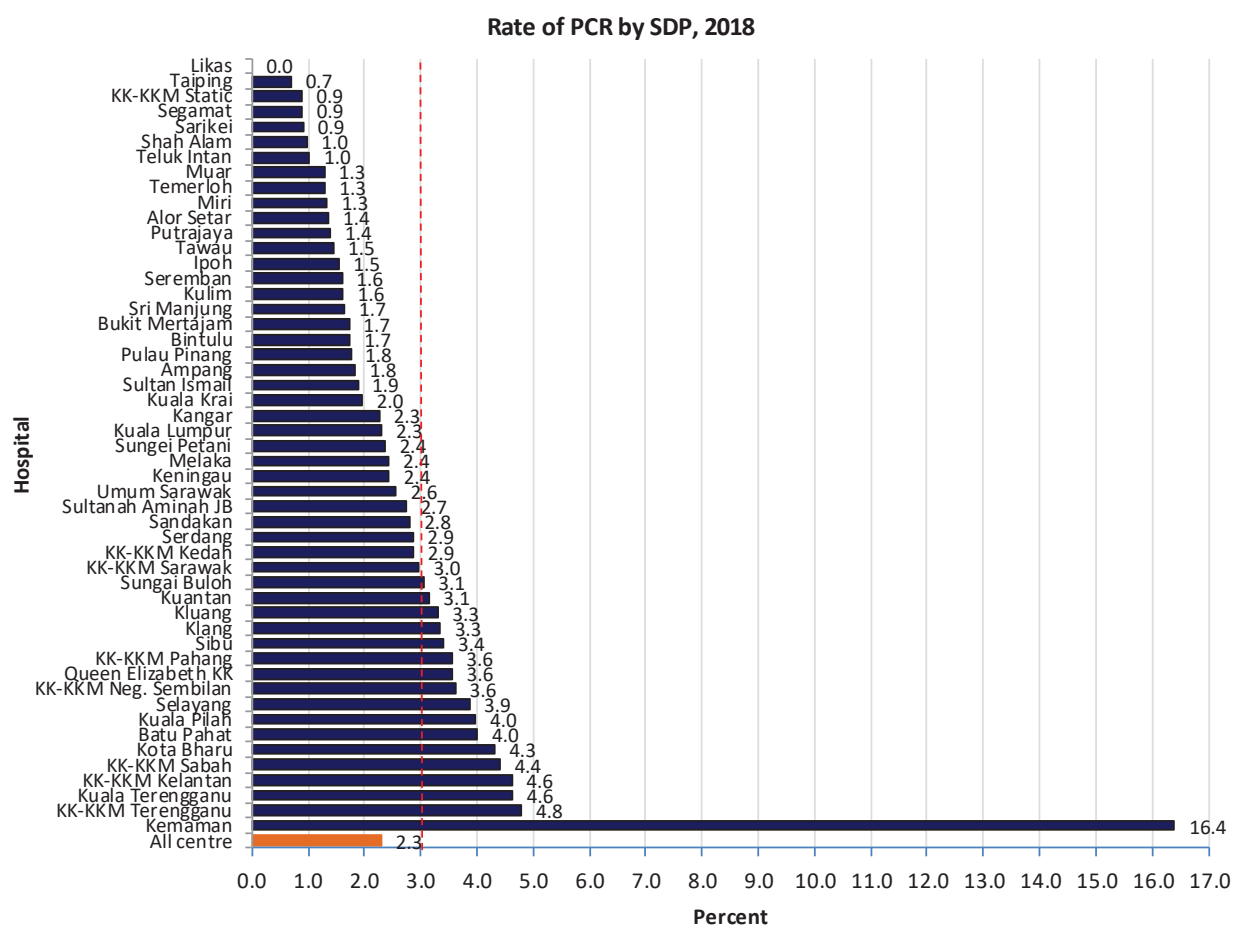


Figure 1.4.6-1: PCR by SDP, Bar Chart (All Surgery), CSR 2018

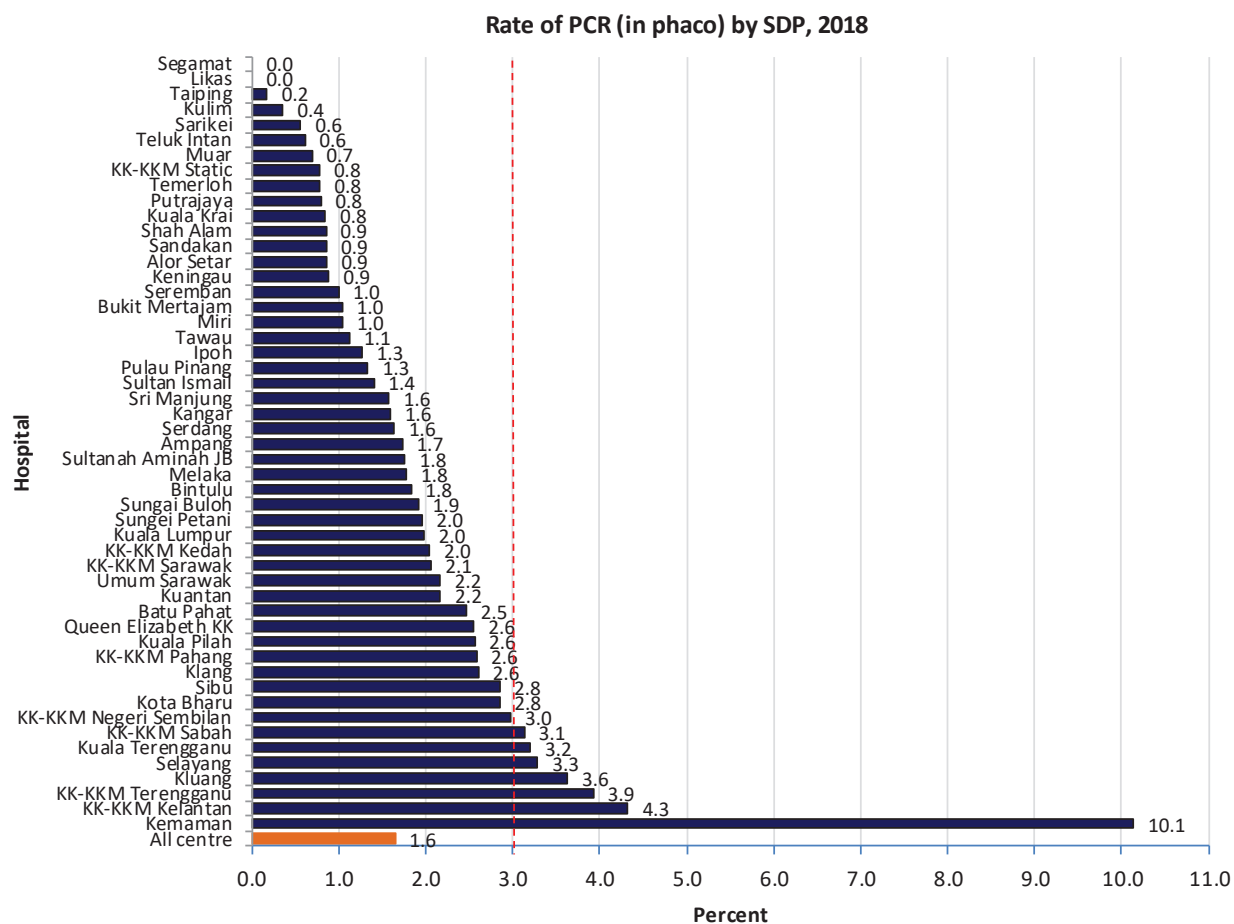


Figure 1.4.6-2: PCR by SDP, Bar Chart (Phacoemulsification), CSR 2018

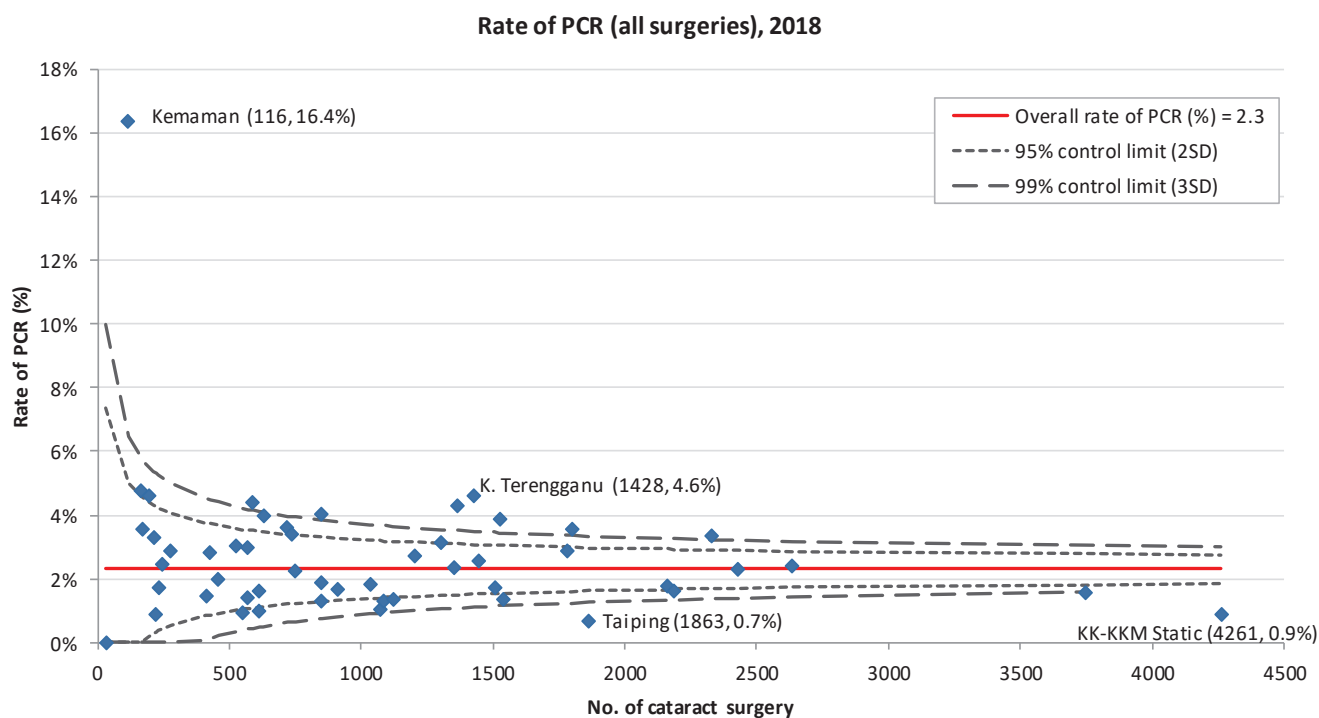


Figure 1.4.6-3: PCR by SDP, Funnel Plot (All Surgery), CSR 2018

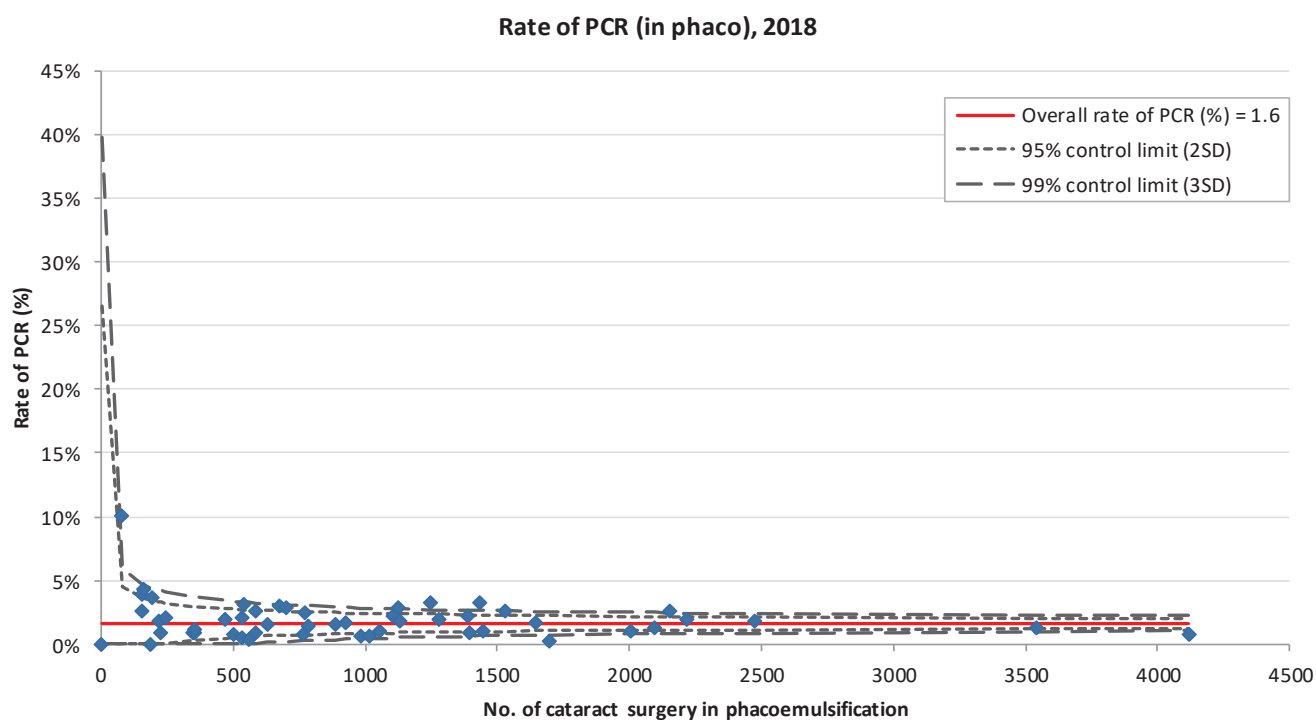


Figure 1.4.6-4: PCR by SDP, Funnel Plot (Phaco), CSR 2018

1.4.7 Posterior Capsular Rupture (PCR) by Type of Cataract Surgery

Table 1.4.7-1: PCR by Type of Cataract Surgery, CSR 2009–2018

Year	2009			2010			2011			2012			2013		
No. of patients	24438			28506			30611			32473			37150		
Total PCR	858			840			936			870			1017		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Phaco	17717	471	2.7	21810	489	2.2	23872	568	2.4	26345	538	2.0	31625	633	2.0
ECCE	5457	216	4.0	5363	195	3.6	5291	181	3.4	4784	145	3.0	4086	160	3.9
Lens Aspiration	400	22	5.5	451	20	4.4	460	11	2.4	444	13	2.9	364	12	3.3
ICCE	134	8	6.0	143	9	6.3	123	6	4.9	136	6	4.4	173	8	4.6
Phaco converted to ECCE	573	135	23.6	586	119	20.3	652	162	24.8	621	161	25.9	769	196	25.5

Year	2014			2015			2016			2017			2018		
No. of patients	40532			44564			50625			54242			55687		
Total PCR	1100			1145			1183			1321			1281		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Phaco	35429	731	2.1	39131	690	1.8	45346	709	1.6	49543	850	1.7	51209	842	1.6
ECCE	3613	133	3.7	3677	173	4.7	3439	173	5.0	3656	402	11.0	3243	368	11.3
Lens Aspiration	370	10	2.7	521	21	4.0	527	17	3.2	572	27	4.7	667	26	3.9
ICCE	176	9	5.1	223	21	9.4	275	37	13.5	284	25	8.8	361	26	7.2
Phaco converted to ECCE	805	205	25.5	833	228	27.4	870	235	27.0	-	-	-	-	-	-
SICS	-	-	-	-	-	-	-	-	-	2	0	0.0	102	2	2.0

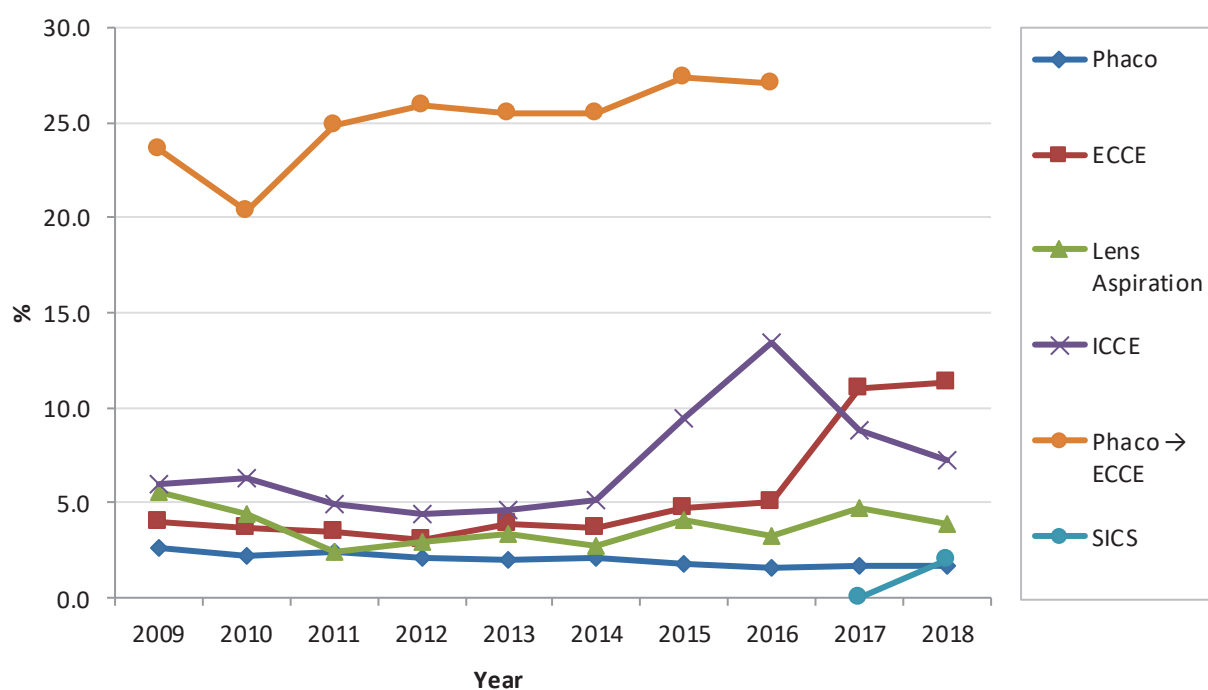


Figure 1.4.7-1: PCR by Type of Cataract Surgery, CSR 2009–2018

1.5 Cataract Surgery Outcome

1.5.1 Post-operative Complications Record and Ascertainment

Table 1.5.1-1: Distribution of Cataract Surgery with Post-operative Complication Record, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total number of cataract surgery registered to CSR	24438	28506	30611	32473	37150	40532	44534	50625	54242	56887
Cataract surgery with post-operative complication record	18621	24293	28746	30011	33596	36138	40088	46011	50672	51988
Ascertainment on post-operative complication (%)	76.2	85.2	93.9	92.4	90.4	89.2	90.0	90.9	93.4	91.4
Cataract surgery with visual outcome record	20590	24522	27219	28589	33067	36257	39077	44788	48090	50011
Ascertainment on visual outcome (%)	84.3	86.0	88.9	88.0	89.0	89.5	87.7	88.5	88.7	87.9

1.5.2 Post-operative Infectious Endophthalmitis

Table 1.5.2-1: Post-operative Infectious Endophthalmitis, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Eyes with post-operative complication records (N)	18621	24293	28746	30011	33596	36138	40088	46011	50672	51988
Eyes with post-operative infectious endophthalmitis (n)	19	24	11	13	27	19	21	16	20	22
Percentage of eyes with post-operative endophthalmitis (%)	0.10	0.10	0.04	0.04	0.08	0.05	0.05	0.03	0.04	0.04

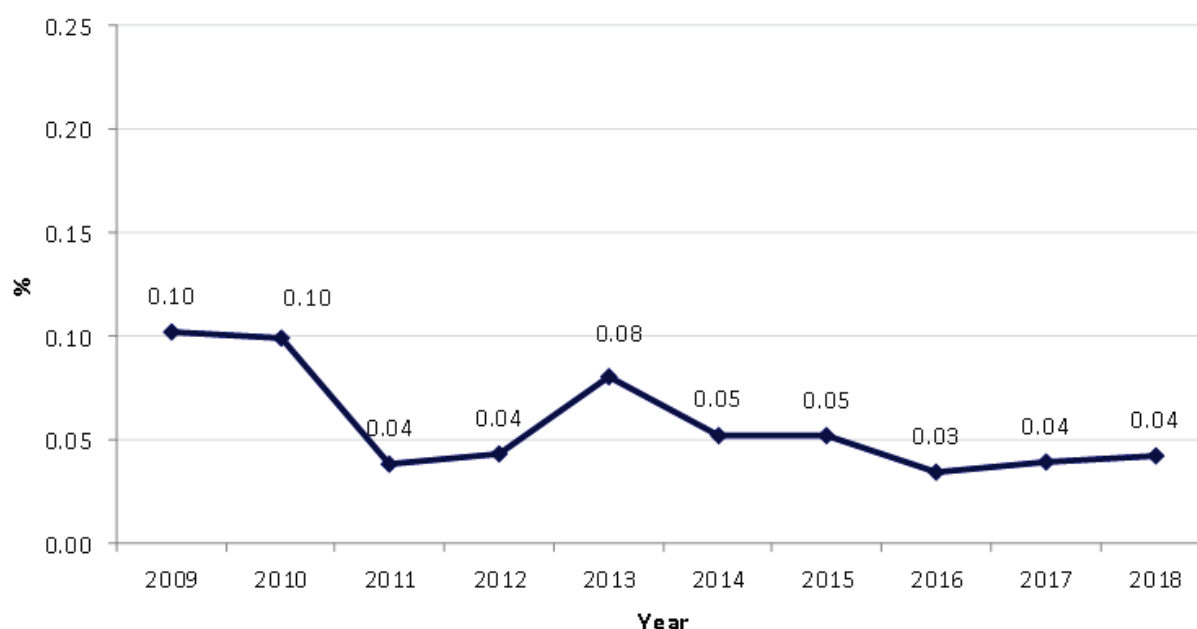


Figure 1.5.2-1: Percentage of Post-operative Infectious Endophthalmitis, CSR 2009–2018

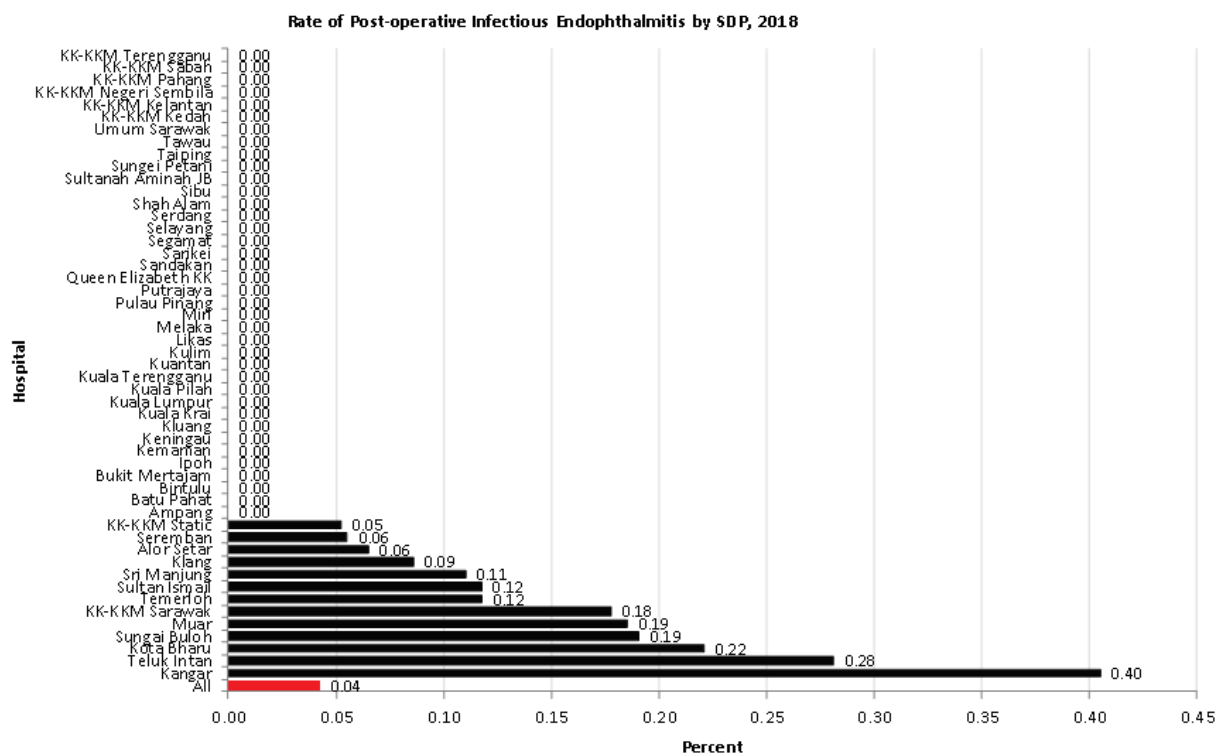


Figure 1.5.2-2: Percentage of Post-operative Infectious Endophthalmitis, CSR 2009–2018

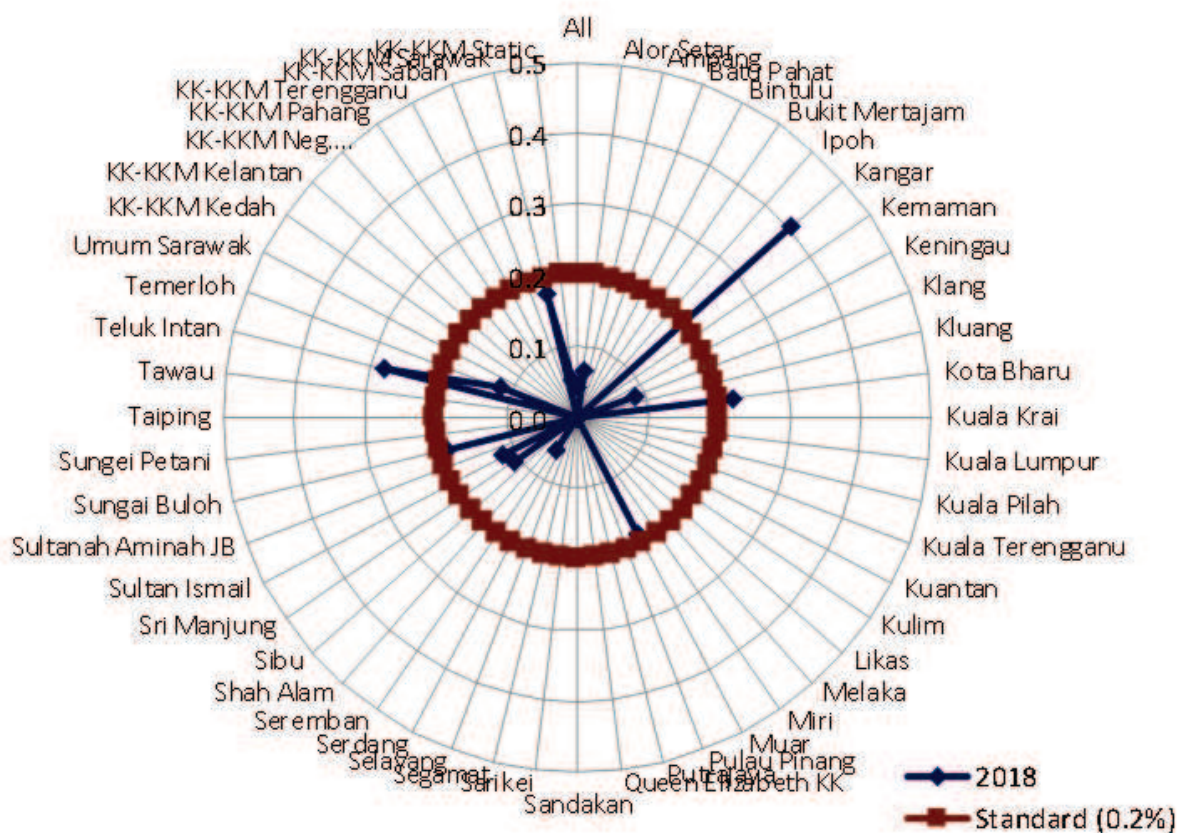


Figure 1.5.2-3: Percentage of Post-operative Infectious Endophthalmitis in Radar Chart, CSR 2018

Table 1.5.2-2: Time from Surgery to Diagnosis, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of patients with post-operative infective endophthalmitis	19	24	11	13	27	19	21	16	20	22
Time from surgery to diagnosis of infection (day)	Days									
Minimum, maximum	1, 103	0, 141	0, 391	2, 59	1, 162	2, 90	1, 367	2, 79	0, 108	1, 79
Median	9	8	6	13	7	7	5	17	11.5	10.5
25 th percentile–75 th percentile	2–21	3–35	3–14	5.5–29.5	3–20	4–28	3–22	9–46.5	2–44.5	3–26
Distribution of patients	Number of Patients									
Less than 3 days	5	4	2	1	6	2	5	1	6	3
3-5 days	1	5	3	2	4	5	6	0	1	4
6-14 days	5	4	4	4	8	4	4	7	5	6
More than 14 days	7	10	2	5	8	8	6	8	8	9
Missing	1	1	0	1	1	0	0	0	0	0

1.5.3 Unplanned Return to Operating Theatre (OT)

Table 1.5.3-1: Unplanned Return to OT, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Patients with outcome records (N)	18621	24293	28746	30011	33596	36138	40088	46011	50672	51988
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
	116 0.62	123 0.51	122 0.42	103 0.34	105 0.31	97 0.27	137 0.34	109 0.24	157 0.31	158 0.30

Table 1.5.3-2: Reasons for Unplanned Return to OT, CSR 2009–2018

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Patients with unplanned return to OT	116	123	122	103	105	97	137	109	157	158
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
IOL related	15 12.9	22 17.9	18 14.8	18 17.5	16 15.2	17 17.5	9 6.6	12 11.0	29 18.5	30 19.0
Wound dehiscence	22 19.0	20 16.3	18 14.8	19 18.4	20 19.0	15 15.5	10 7.3	11 10.1	13 8.3	18 11.4
Iris prolapse	18 15.5	20 16.3	24 19.7	11 10.7	10 9.5	7 7.2	13 9.5	10 9.2	10 6.4	9 5.7
Infective endophthalmitis	6 5.2	9 7.3	2 1.6	5 4.8	7 6.7	9 9.3	10 7.3	3 2.8	7 4.5	7 4.4
High IOP	9 7.8	3 2.4	4 3.3	6 5.8	2 1.9	3 3.1	8 5.8	5 4.6	5 3.2	3 1.9
Others	53 45.7	56 45.5	68 55.7	52 50.5	55 52.4	53 54.6	92 67.2	73 67.0	103 65.6	97 61.4

Total percentage may be more than 100% as patient might have multiple reasons for unplanned return to OT.

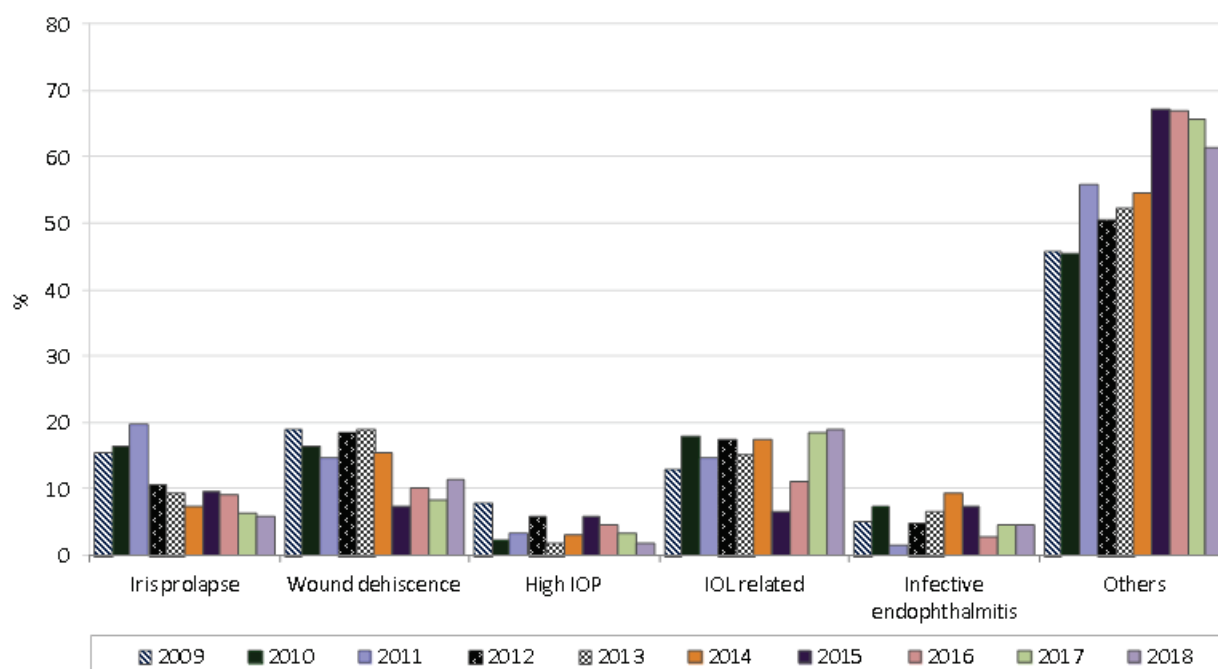


Figure 1.5.3-1: Reasons for Unplanned Return to Operating Theatre, CSR 2009–2018

Table 1.5.3-3 Time from Surgery to Unplanned Return to OT, CSR 2018

Post-operative period (day)	N	n	Median	25 th percentile–75 th percentile	Minimum, maximum
Infective endophthalmitis	7	7	26	18–39	2, 59
Iris prolapse	9	8	13	4–17.5	1, 58
IOL related	30	30	11	5–37	0, 98
High IOP	3	3	7	0–10	0, 10
Wound dehiscence	18	18	4.5	2–14	1, 55
Others	97	89	6	1–14	0, 97

n = No. of available information.

Post-operative Follow-up Period

Table 1.5.3-4: Median Follow-up Period by Types of Cataract Surgery (Eyes with Unaided Vision in Weeks), CSR 2018

Types of surgery	N	n	Median	25 th percentile	75 th percentile	Minimum	Maximum
All surgeries	50011	50005	7	6	9	0	64
ECCE	2762	2762	9	6	12	1	60
ICCE	274	274	8	6	11	1	39
Phaco	46287	46282	7	6	8	0	64
Lens aspiration	506	505	7	5	9	1	47
SICS	90	90	7	4	8	1	29

n = No. of available information.

Table 1.5.3-5: Median Follow-up Period by Types of Cataract Surgery (Eyes with Refracted Vision) in Weeks, CSR 2018

Types of surgery	N	n	Median	25 th percentile	75 th percentile	Minimum	Maximum
All surgeries	48210	48206	7	6	9	0	64
ECCE	2627	2627	9	6	12	1	60
ICCE	260	260	8	6	11	1	39
Phaco	44680	44677	7	6	9	0	64
Lens aspiration	472	471	7	5	9	1	47
SICS	86	86	7	4	8	1	29

n = No. of available information.

1.5.4 Post-operative Visual Acuity (All Eyes)

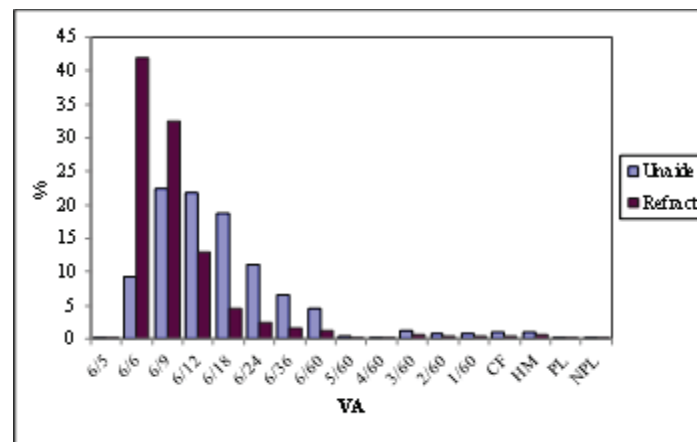
Table 1.5.4-1: Post-operative Visual Acuity (All Eyes), CSR 2009–2018

Year	2009 (N=24438)				2010 (N=28506)				2011 (N=30611)				2012 (N=32473)				2013 (N=37150)			
VA	Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
6/5	10	0.0	46	0.2	12	0.0	119	0.5	15	0.1	124	0.5	14	0.0	102	0.4	20	0.1	104	0.3
6/6	1100	5.3	6555	34.7	1568	6.4	8362	37.0	1776	6.5	9239	37.4	2011	7.0	9732	38.2	2664	8.1	11743	39.2
6/9	3649	17.7	6550	34.7	4523	18.4	7369	32.6	5040	18.5	8162	33.0	5498	19.2	8254	32.4	7101	21.5	9901	33.0
6/12	3837	18.6	2762	14.6	5054	20.6	3332	14.8	5499	20.2	3585	14.5	5925	20.7	3723	14.6	7122	21.5	4272	14.3
≤6/12	8596	41.7	15913	84.3	11157	45.5	19182	85.0	12330	45.3	21110	85.4	13448	47.0	21811	85.5	16907	51.1	26020	86.8
6/18	4052	19.7	1050	5.6	4727	19.3	1131	5.0	5209	19.1	1218	4.9	5285	18.5	1327	5.2	5923	17.9	1381	4.6
<6/12–6/18	4052	19.7	1050	5.6	4727	19.3	1131	5.0	5209	19.1	1218	4.9	5285	18.5	1327	5.2	5923	17.9	1381	4.6
6/24	2958	14.4	616	3.3	3232	13.2	666	2.9	3689	13.6	738	3.0	3728	13.0	746	2.9	4062	12.3	820	2.7
6/36	2095	10.2	416	2.2	2211	9.0	497	2.2	2528	9.3	503	2.0	2713	9.5	531	2.1	2592	7.8	552	1.8
6/60	1323	6.4	276	1.5	1456	5.9	350	1.6	1558	5.7	388	1.6	1468	5.1	361	1.4	1606	4.9	390	1.3
<6/18–6/60	6376	31.0	1308	7.0	6899	28.1	1513	6.7	7775	28.6	1629	6.6	7909	27.7	1638	6.4	8260	25.0	1762	5.9
5/60	93	0.5	27	0.1	119	0.5	37	0.2	111	0.4	28	0.1	130	0.5	38	0.1	135	0.4	33	0.1
4/60	103	0.5	31	0.2	112	0.5	31	0.1	109	0.4	32	0.1	119	0.4	26	0.1	103	0.3	43	0.1
3/60	331	1.6	118	0.6	378	1.5	151	0.7	435	1.6	155	0.6	469	1.6	168	0.7	479	1.4	167	0.6
<6/60–3/60	527	2.6	176	0.9	609	2.5	219	1.0	655	2.4	215	0.9	718	2.5	232	0.9	717	2.2	243	0.8
2/60	199	1.0	77	0.4	227	0.9	97	0.4	249	0.9	113	0.5	257	0.9	94	0.4	291	0.9	124	0.4
1/60	168	0.8	66	0.3	196	0.8	93	0.4	213	0.8	99	0.4	211	0.7	79	0.3	239	0.7	111	0.4
CF	315	1.5	127	0.7	345	1.4	147	0.7	400	1.5	135	0.5	371	1.3	125	0.5	352	1.1	138	0.5
HM	269	1.3	126	0.7	280	1.1	155	0.7	294	1.1	150	0.6	291	1.0	154	0.6	279	0.8	138	0.5
PL	58	0.3	31	0.2	47	0.2	24	0.1	52	0.2	20	0.1	61	0.2	28	0.1	64	0.2	34	0.1
NPL	30	0.1	12	0.1	35	0.1	18	0.1	42	0.2	18	0.1	38	0.1	17	0.1	35	0.1	17	0.1
<3/60	1039	5.0	439	2.3	1130	4.6	534	2.4	1250	4.6	535	2.2	1229	4.3	497	1.9	1260	3.8	562	1.9
TOTAL	20590	100	18886	100	24522	100	22579	100	27219	100	24707	100	28589	100	25505	100	33067	100	29968	100
WHO classification:																				
Good: ≥6/18	12648	61.4	16963	89.8	15884	64.8	20313	90.0	17539	64.4	22328	90.4	18733	65.5	23138	90.7	22830	69.0	27401	91.4
Borderline: <6/18–6/60	6376	31.0	1308	6.9	6899	28.1	1513	6.7	7775	28.6	1629	6.6	7909	27.7	1638	6.4	8260	25.0	1762	5.9
Poor: <6/60	1566	7.6	615	3.3	1739	7.1	753	3.3	1905	7.0	750	3.0	1947	6.8	729	2.9	1977	6.0	805	2.7

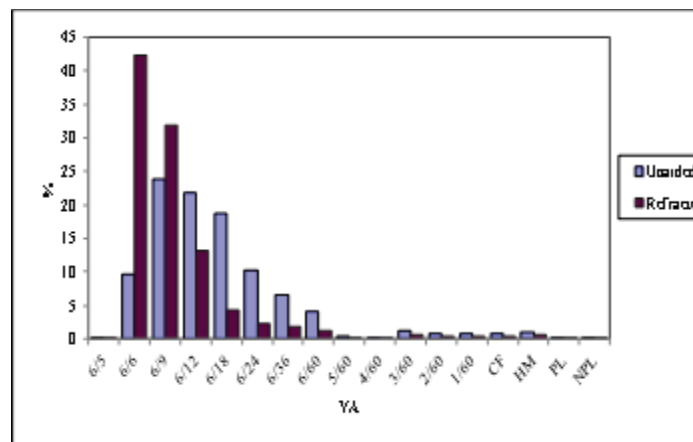
Year	2014 (N=40532)				2015 (N=44534)				2016 (N=50625)				2017 (N=54242)				2018 (N=55687)			
	Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
VA																				
6/5	25	0.1	123	0.4	23	0.1	87	0.2	19	0.0	87	0.2	23	0.0	99	0.2	28	0.1	70	0.1
6/6	3165	8.7	13487	40.2	3585	9.2	15244	41.9	4310	9.6	17799	42.4	5204	10.8	19950	44.1	5148	10.3	20051	41.6
6/9	7765	21.4	10961	32.7	8771	22.4	11757	32.3	10631	23.8	13374	31.8	11562	24.1	13882	30.7	12143	24.3	15460	32.1
6/12	7870	21.7	4700	14.0	8478	21.7	4736	13.0	9711	21.7	5550	13.2	10327	21.5	5665	12.5	10911	21.8	6186	12.8
≤6/12	18825	51.9	29271	87.3	20857	53.4	31824	87.6	24671	55.2	36810	87.6	27116	56.5	39596	87.5	28230	56.5	41767	86.6
6/18	6638	18.3	1475	4.4	7314	18.7	1627	4.5	8313	18.6	1843	4.4	8623	18.0	2001	4.4	9216	18.4	2252	4.7
<6/12–6/18	6638	18.3	1475	4.4	7314	18.7	1627	4.5	8313	18.6	1843	4.4	8623	18.0	2001	4.4	9216	18.4	2252	4.7
6/24	4421	12.2	938	2.8	4297	11.0	877	2.4	4558	10.2	964	2.3	4708	9.8	1013	2.2	4908	9.8	1211	2.5
6/36	2724	7.5	617	1.8	2577	6.6	625	1.7	2923	6.5	735	1.7	3027	6.3	806	1.8	2958	5.9	853	1.8
6/60	1701	4.7	425	1.3	1750	4.5	473	1.3	1810	4.1	548	1.3	1979	4.1	610	1.3	2052	4.1	707	1.5
<6/18–6/60	8846	24.4	1980	5.9	8624	22.1	1975	5.4	9291	20.8	2247	5.3	9714	20.2	2429	5.4	9918	19.8	2771	5.7
5/60	122	0.3	33	0.1	135	0.3	31	0.1	157	0.4	36	0.1	170	0.4	54	0.1	157	0.3	49	0.1
4/60	104	0.3	35	0.1	94	0.2	38	0.1	117	0.3	58	0.1	125	0.3	42	0.1	101	0.2	31	0.1
3/60	447	1.2	199	0.6	505	1.3	198	0.5	507	1.1	223	0.5	566	1.2	306	0.7	592	1.2	292	0.6
<6/60–3/60	673	1.9	267	0.8	734	1.9	267	0.7	781	1.7	317	0.8	861	1.8	402	0.9	850	1.7	372	0.8
2/60	303	0.8	131	0.4	330	0.8	118	0.3	321	0.7	129	0.3	359	0.7	144	0.3	343	0.7	191	0.4
1/60	237	0.7	86	0.3	312	0.8	141	0.4	328	0.7	139	0.3	345	0.7	161	0.4	364	0.7	207	0.4
CF	353	1.0	128	0.4	390	1.0	138	0.4	406	0.9	200	0.5	463	1.0	202	0.4	437	0.9	232	0.5
HM	291	0.8	158	0.5	362	0.9	186	0.5	413	0.9	246	0.6	375	0.8	216	0.5	461	0.9	326	0.7
PL	59	0.2	24	0.1	90	0.2	48	0.1	96	0.2	45	0.1	96	0.2	58	0.1	109	0.2	71	0.1
NPL	32	0.1	12	0.0	64	0.2	24	0.1	52	0.1	33	0.1	68	0.1	38	0.1	53	0.1	41	0.1
<3/60	1275	3.5	539	1.6	1548	4.0	655	1.8	1616	3.6	792	1.9	1706	3.6	819	1.8	1767	3.5	1068	2.2
TOTAL	36257	100	33532	100	39077	100	36348	100	44672	100	42009	100	48020	100	45247	100	49981	100	48230	100
Good: ≥6/18	25463	70.2	30746	91.7	28171	72.1	33451	92.0	32984	73.8	38653	92.0	35739	74.4	41597	91.9	37446	74.9	44019	91.3
Borderline: <6/18–6/60	8846	24.4	1980	5.9	8624	22.1	1975	5.4	9291	20.8	2247	5.3	9714	20.2	2429	5.4	9918	19.8	2771	5.7
Poor: <6/60	1948	5.4	806	2.4	2282	5.8	922	2.5	2397	5.4	1109	2.6	2567	5.3	1221	2.7	2617	5.2	1440	3.0

Number and percentage (%) are based on available information.

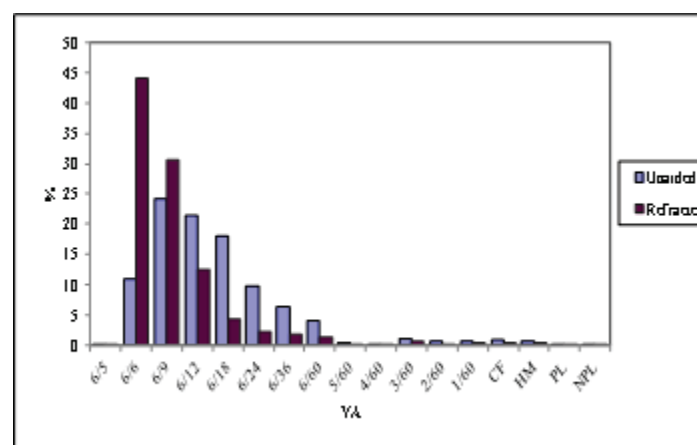
2015



2016



2017



2018

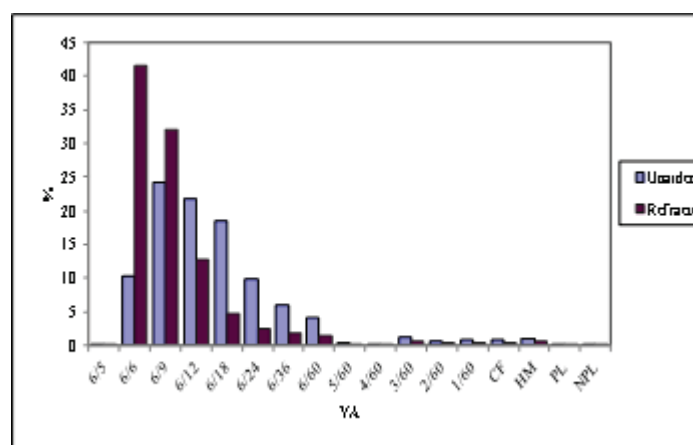


Figure 1.5.4-1: Percentage Distribution of Post-operative Unaided and Refracted Visual Acuity,

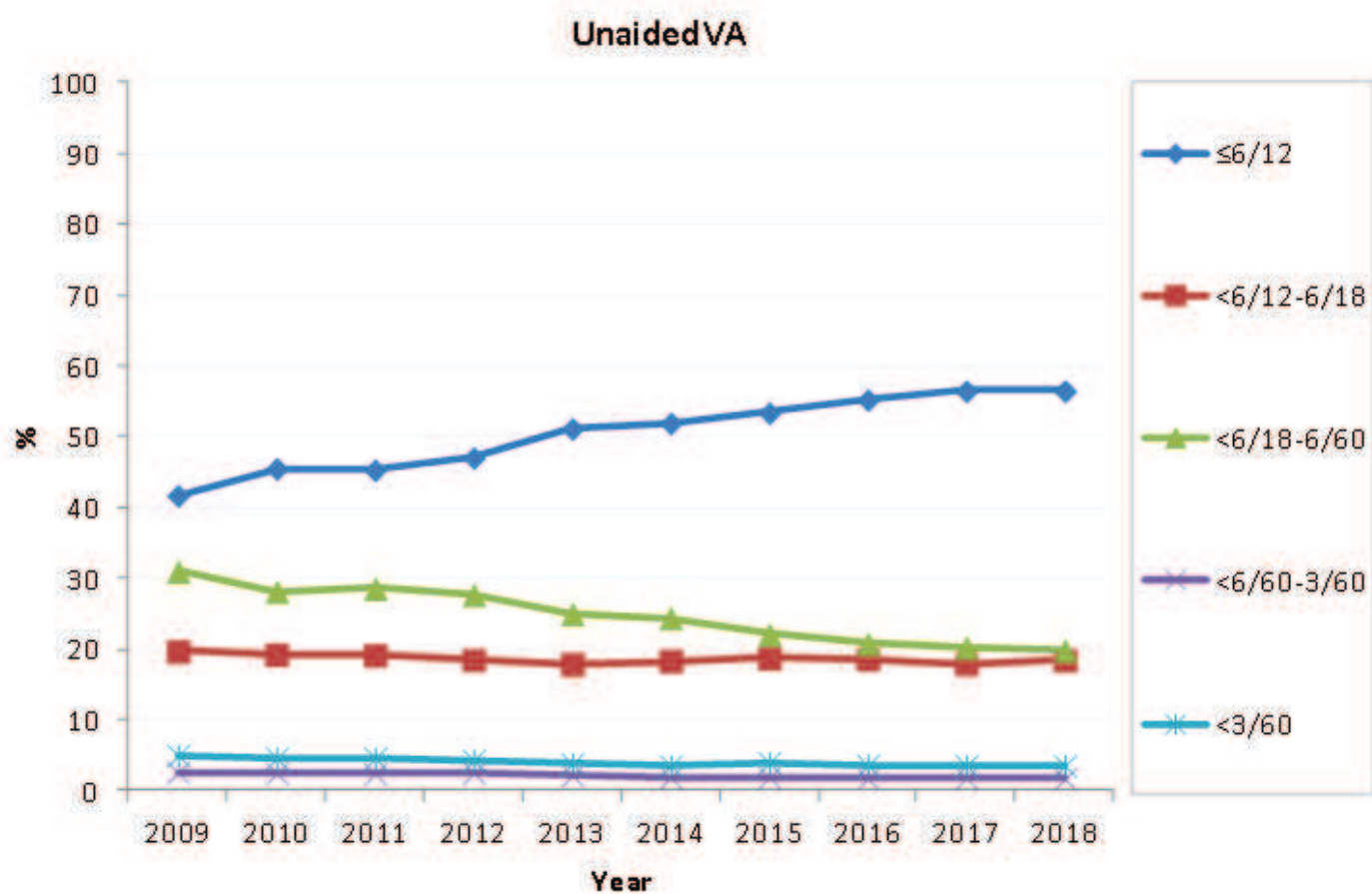


Figure 1.5.4-2 Post-operative Unaided Visual Acuity by Vision Category (All Eyes), CSR 2009–2018

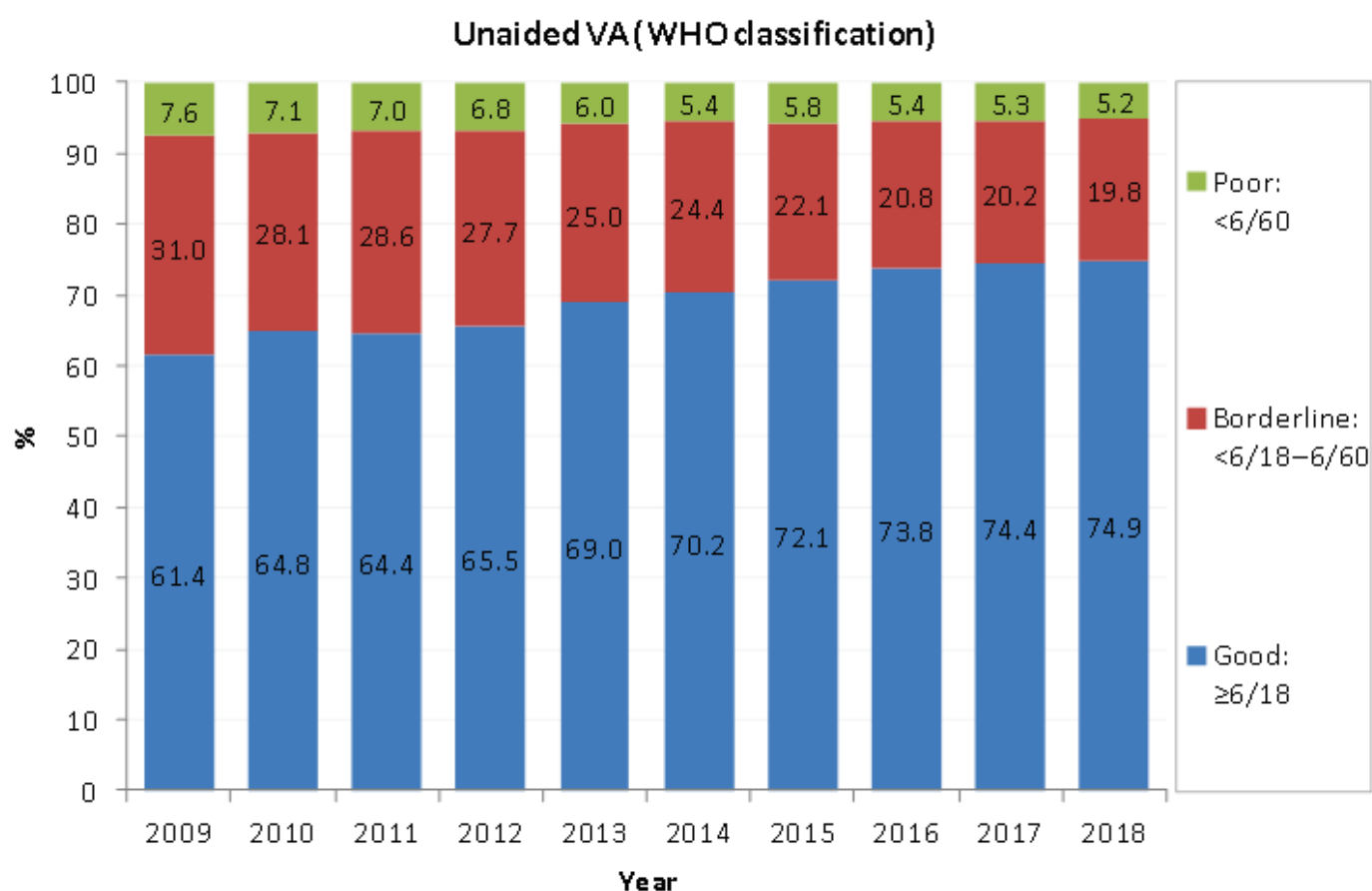


Figure 1.5.4-3: Post-operative Unaided Visual Acuity by Vision Category (All Eyes), CSR 2009–2018

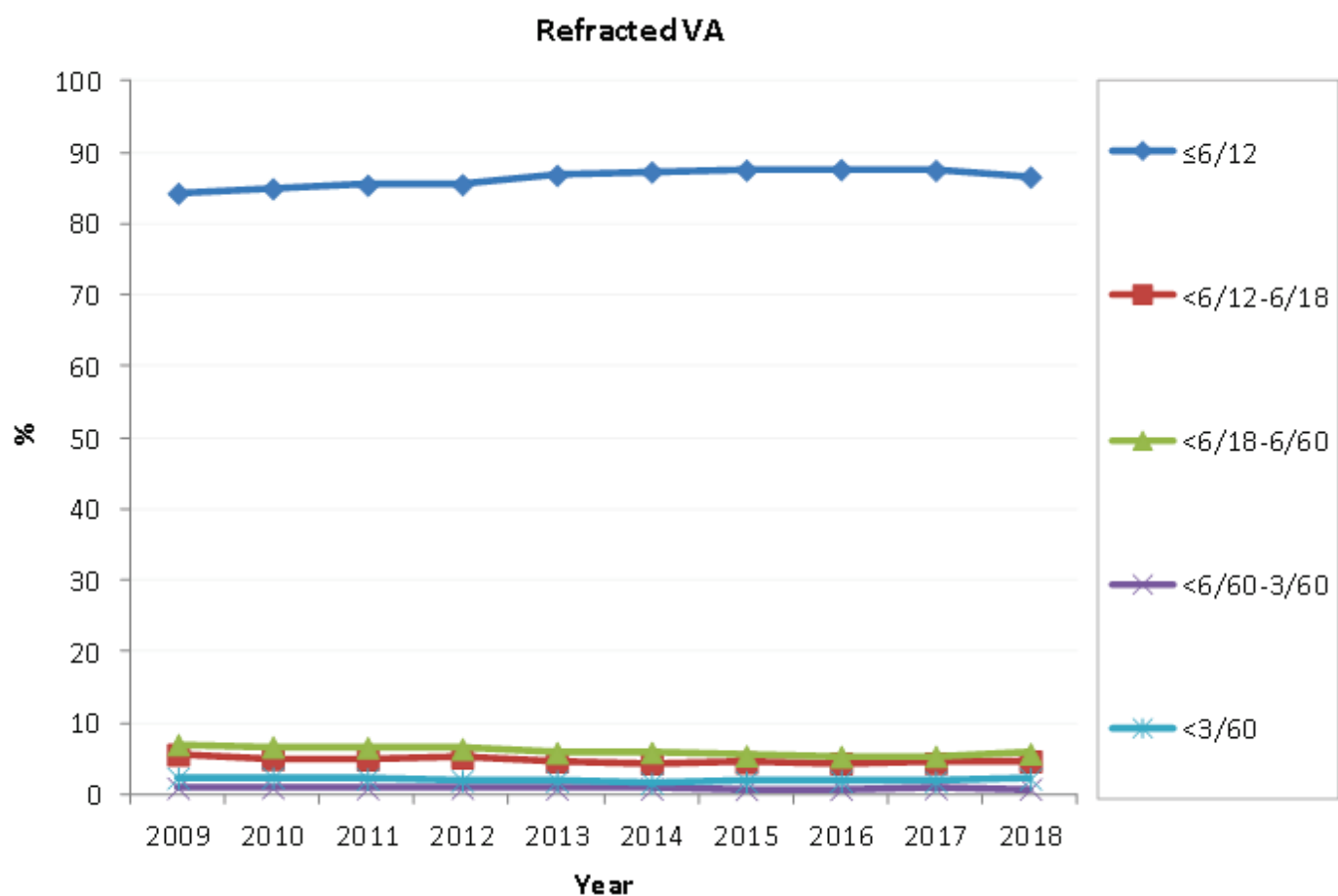


Figure 1.5.4-4: Post-operative Best Corrected Visual Acuity by Vision Category (All Eyes), CSR 2009-2018

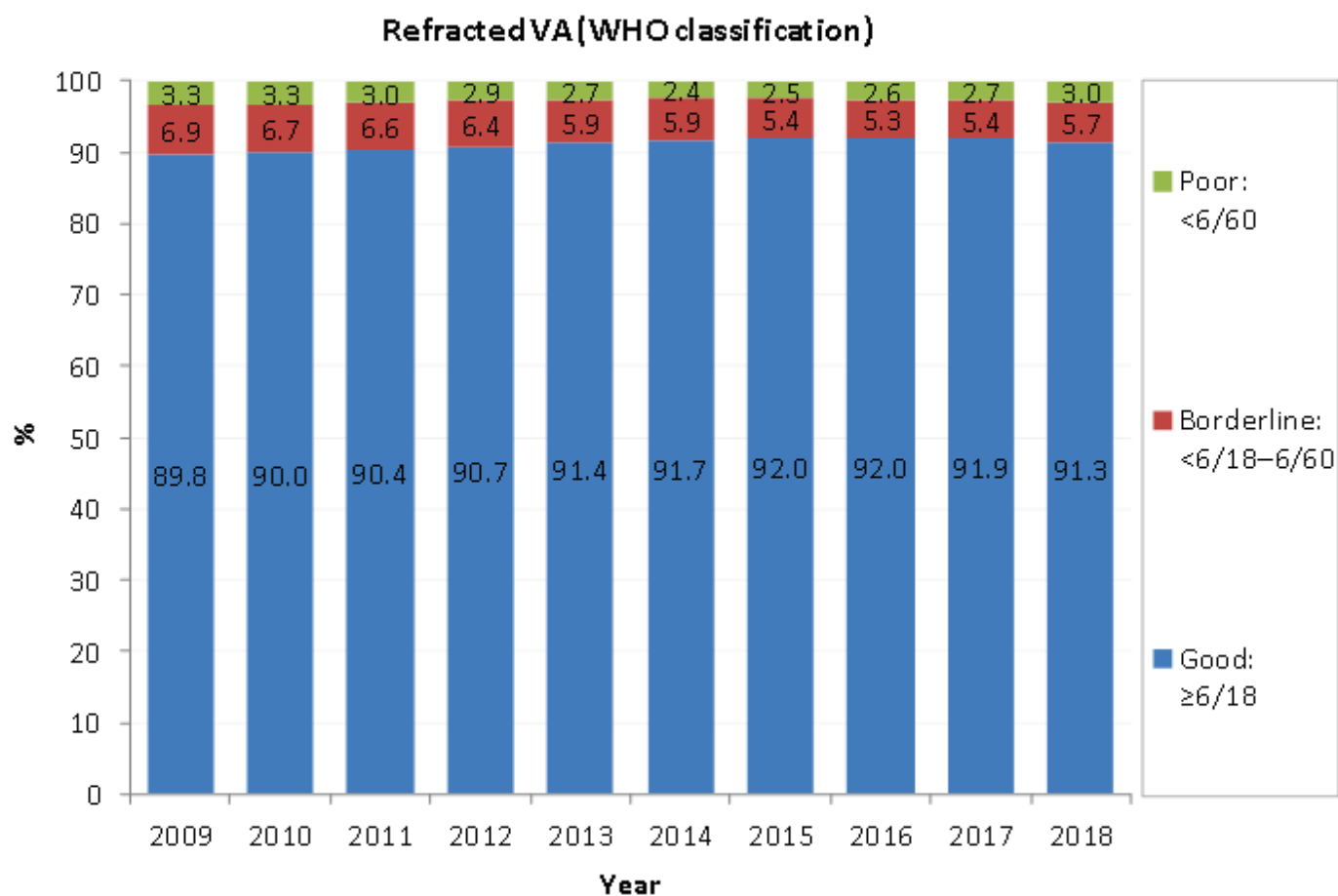


Figure 1.5.4-5: Post-operative Best Corrected Visual Acuity by Vision Category (All Eyes), CSR 2009-2018

1.5.5 Post-operative Visual Acuity (Eyes without Ocular Co-morbidity)

Table 1.5.5-1: Post-operative Visual Acuity (Eyes without Ocular Co-morbidity), CSR 2009–2018

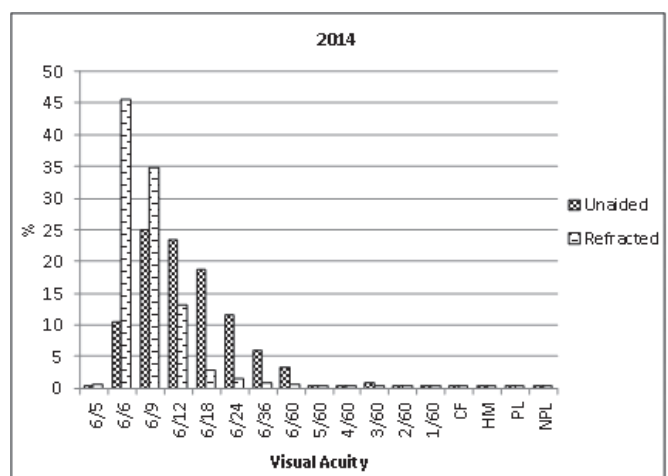
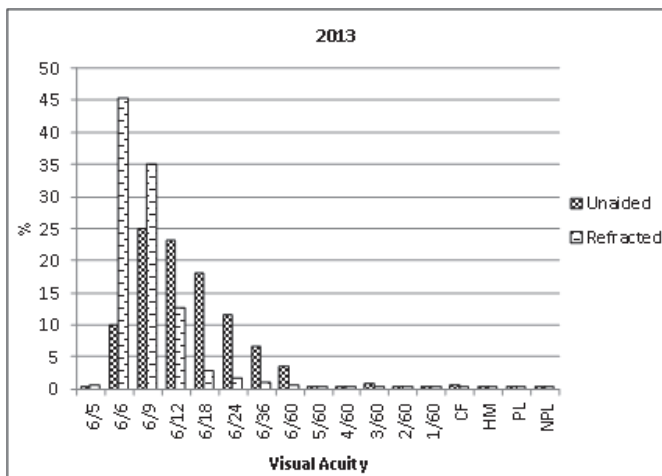
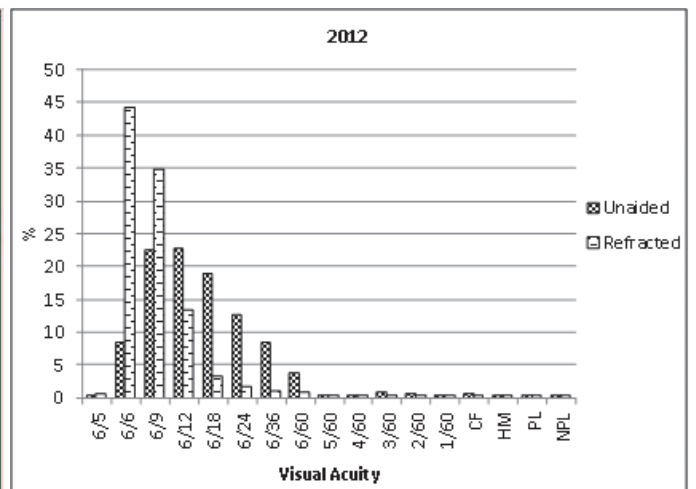
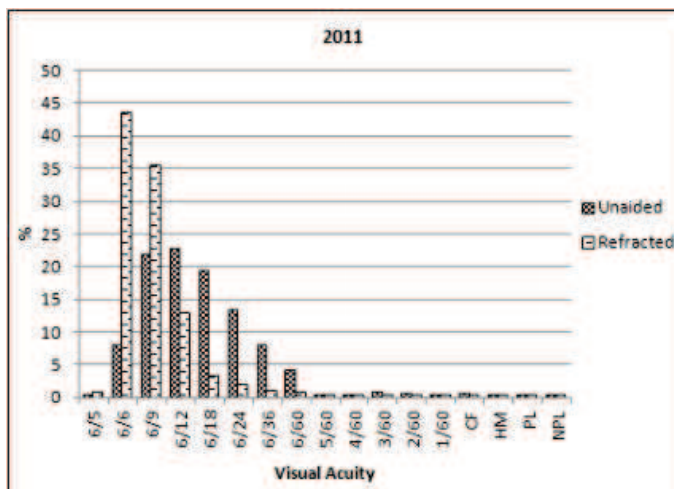
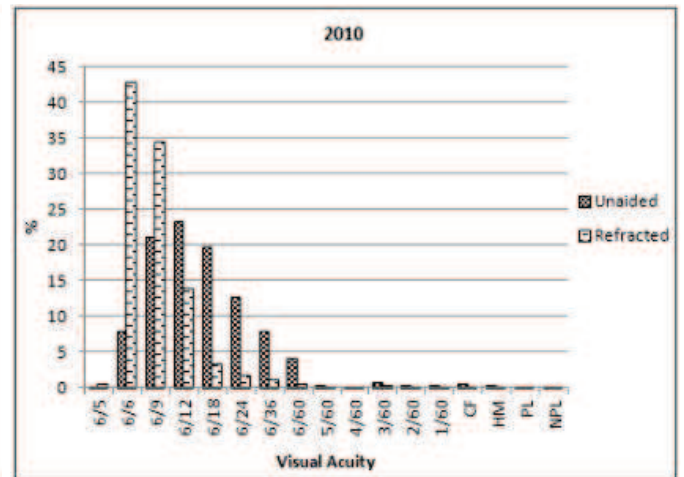
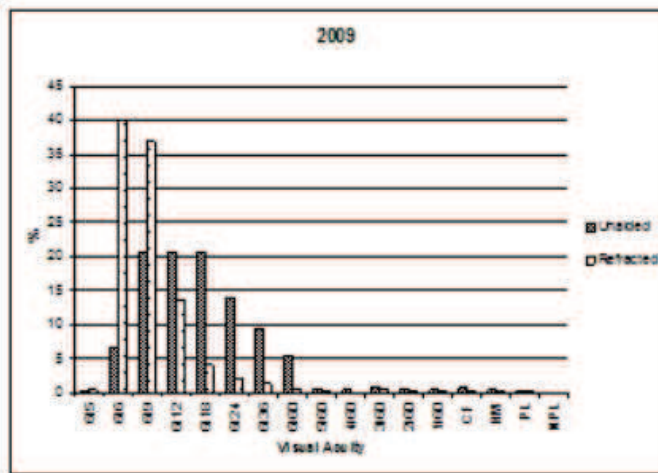
Year	2009				2010				2011				2012				2013			
VA	Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
6/5	8	0.1	37	0.3	7	0.0	83	0.6	14	0.1	105	0.7	11	0.1	82	0.5	15	0.1	80	0.4
6/6	802	6.4	4717	40.0	1127	8.0	5640	42.8	1249	7.9	6314	43.3	1422	8.3	6779	44.0	1922	9.9	8110	45.2
6/9	2595	20.6	4348	36.9	2989	21.1	4550	34.5	3447	21.8	5167	35.4	3845	22.5	5358	34.8	4846	24.9	6281	35.0
6/12	2585	20.5	1602	13.6	3311	23.4	1842	14.0	3587	22.6	1882	12.9	3870	22.7	2060	13.4	4502	23.1	2273	12.7
≤6/12	5990	47.6	10704	90.8	7434	52.6	12115	92.0	8297	52.4	13468	92.4	9148	53.6	14279	92.6	11285	58.0	16744	93.3
6/18	2599	20.6	479	4.1	2777	19.6	445	3.4	3061	19.3	480	3.3	3212	18.8	501	3.3	3508	18.0	508	2.8
<6/12–6/18	2599	20.6	479	4.1	2777	19.6	445	3.4	3061	19.3	480	3.3	3212	18.8	501	3.3	3508	18.0	508	2.8
6/24	1772	14.0	251	2.1	1805	12.8	242	1.8	2098	13.2	267	1.8	2154	12.6	248	1.6	2235	11.5	288	1.6
6/36	1170	9.3	152	1.3	1113	7.9	139	1.1	1253	7.9	132	0.9	1419	8.3	159	1.0	1268	6.5	160	0.9
6/60	651	5.2	61	0.5	586	4.1	83	0.6	651	4.1	107	0.7	640	3.7	100	0.6	683	3.5	90	0.5
<6/18–6/60	3593	28.5	464	3.9	3504	24.8	464	3.5	4002	25.3	506	3.5	4213	24.7	507	3.3	4186	21.5	538	3.0
5/60	38	0.3	8	0.1	50	0.4	11	0.1	40	0.3	5	0.0	41	0.2	4	0.0	41	0.2	7	0.0
4/60	33	0.3	5	0.0	31	0.2	6	0.0	39	0.2	8	0.1	31	0.2	3	0.0	34	0.2	12	0.1
3/60	114	0.9	37	0.3	105	0.7	33	0.3	131	0.8	26	0.2	142	0.8	33	0.2	139	0.7	33	0.2
<6/60–3/60	185	1.5	50	0.4	186	1.3	50	0.4	210	1.3	39	0.3	214	1.3	40	0.3	214	1.1	52	0.3
2/60	60	0.5	15	0.1	56	0.4	16	0.1	71	0.4	22	0.2	78	0.5	18	0.1	72	0.4	23	0.1
1/60	46	0.4	16	0.1	40	0.3	18	0.1	51	0.3	15	0.1	60	0.4	22	0.1	55	0.3	21	0.1
CF	87	0.7	27	0.2	87	0.6	31	0.2	93	0.6	19	0.1	102	0.6	26	0.2	93	0.5	30	0.2
HM	46	0.4	20	0.2	48	0.3	26	0.2	46	0.3	23	0.2	37	0.2	15	0.1	46	0.2	21	0.1
PL	9	0.1	6	0.1	7	0.0	5	0.0	9	0.1	3	0.0	11	0.1	3	0.0	6	0.0	2	0.0
NPL	3	0.0	1	0.0	3	0.0	1	0.0	6	0.0	1	0.0	3	0.0	2	0.0	7	0.0	5	0.0

<3/60	251	2.1	85	0.7	241	1.7	97	0.7	276	1.7	83	0.6	291	1.7	86	0.6	279	1.4	102	0.6
TOTAL	12618	100	11782	100	14142	100	13171	100	15846	100	14576	100	17078	100	15413	100	19472	100	17944	100
WHO classification:																				
Good: ≥6/18	8589	68.1	11183	94.9	10211	72.2	12560	95.4	11358	71.7	13948	95.7	12360	72.4	14780	95.9	14793	76.0	17252	96.1
Borderline: <6/18–6/60	3593	28.5	464	3.9	3504	24.8	464	3.5	4002	25.3	506	3.5	4213	24.7	507	3.3	4186	21.5	538	3.0
Poor: <6/60	436	3.5	135	1.1	427	3.0	147	1.1	486	3.1	122	0.8	505	3.0	126	0.8	493	2.5	154	0.9

Year	2014				2015				2016				2017				2018			
VA	Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
6/5	14	0.1	87	0.4	15	0.1	63	0.3	15	0.1	60	0.2	19	0.1	80	0.3	25	0.1	54	0.2
6/6	2214	10.3	9296	45.5	2500	10.6	10794	47.9	3339	11.6	13540	49.0	4224	13.3	15607	51.3	4157	12.4	15661	48.1
6/9	5369	24.9	7111	34.8	6124	25.9	7734	34.3	7884	27.3	9375	33.9	8715	27.5	9694	31.9	9176	27.5	10909	33.5
6/12	5036	23.3	2677	13.1	5554	23.5	2634	11.7	6874	23.8	3308	12.0	7354	23.2	3454	11.4	7837	23.5	3844	11.8
≤6/12	12633	58.5	19171	93.8	14193	59.9	21225	94.1	18112	62.8	26283	95.2	20312	64.1	28835	94.8	21195	63.5	30468	93.7
6/18	4004	18.5	548	2.7	4547	19.2	578	2.6	5454	18.9	645	2.3	5688	17.9	758	2.5	6162	18.4	908	2.8
<6/12–6/18	4004	18.5	548	2.7	4547	19.2	578	2.6	5454	18.9	645	2.3	5688	17.9	758	2.5	6162	18.4	908	2.8
6/24	2482	11.5	305	1.5	2459	10.4	275	1.2	2659	9.2	284	1.0	2789	8.8	320	1.1	3015	9.0	428	1.3
6/36	1284	5.9	164	0.8	1213	5.1	179	0.8	1427	4.9	178	0.6	1568	4.9	208	0.7	1526	4.6	272	0.8
6/60	685	3.2	98	0.5	704	3.0	132	0.6	708	2.5	92	0.3	803	2.5	133	0.4	887	2.7	204	0.6
<6/18–6/60	4451	20.6	567	2.8	4376	18.5	586	2.6	4794	16.6	554	2.0	5160	16.3	661	2.2	5428	16.3	904	2.8
5/60	38	0.2	11	0.1	45	0.2	4	0.0	58	0.2	8	0.0	54	0.2	4	0.0	48	0.1	10	0.0
4/60	25	0.1	4	0.0	27	0.1	10	0.0	43	0.1	11	0.0	34	0.1	6	0.0	29	0.1	5	0.0
3/60	152	0.7	44	0.2	156	0.7	36	0.2	135	0.5	36	0.1	161	0.5	56	0.2	181	0.5	55	0.2
<6/60–3/60	215	1.0	59	0.3	228	1.0	50	0.2	236	0.8	55	0.2	249	0.8	66	0.2	258	0.8	70	0.2
2/60	83	0.4	20	0.1	94	0.4	20	0.1	86	0.3	21	0.1	80	0.3	19	0.1	107	0.3	45	0.1
1/60	75	0.3	19	0.1	88	0.4	24	0.1	59	0.2	15	0.1	73	0.2	26	0.1	94	0.3	41	0.1
CF	84	0.4	27	0.1	73	0.3	22	0.1	63	0.2	21	0.1	86	0.3	30	0.1	81	0.2	35	0.1

HM	43	0.2	19	0.1	51	0.2	27	0.1	38	0.1	16	0.1	41	0.1	19	0.1	59	0.2	47	0.1
PL	8	0.0	6	0.0	14	0.1	10	0.0	10	0.0	4	0.0	10	0.0	5	0.0	13	0.0	7	0.0
NPL	3	0.0	1	0.0	12	0.1	4	0.0	3	0.0	3	0.0	5	0.0	2	0.0	4	0.0	4	0.0
<3/60	296	1.4	92	0.5	332	1.4	107	0.5	259	0.9	80	0.3	295	0.9	101	0.3	358	1.1	179	0.6
TOTAL	21599	100	20437	100	23676	100	22546	100	28855	100	27617	100	31704	100	30421	100	33401	100	32529	100
WHO classification:																				
Good: ≥6/18	16637	77.0	19719	96.5	18740	79.2	21803	96.7	23566	81.7	26928	97.5	26000	82.0	29593	97.3	27357	81.9	31376	96.5
Borderline: <6/18–6/60	4451	20.6	567	2.8	4376	18.5	586	2.6	4794	16.6	554	2.0	5160	16.3	661	2.2	5428	16.3	904	2.8
Poor: <6/60	511	2.4	151	0.7	560	2.4	157	0.7	495	1.7	135	0.5	544	1.7	167	0.5	616	1.8	249	0.8

Number and percentage (%) are based on available information.



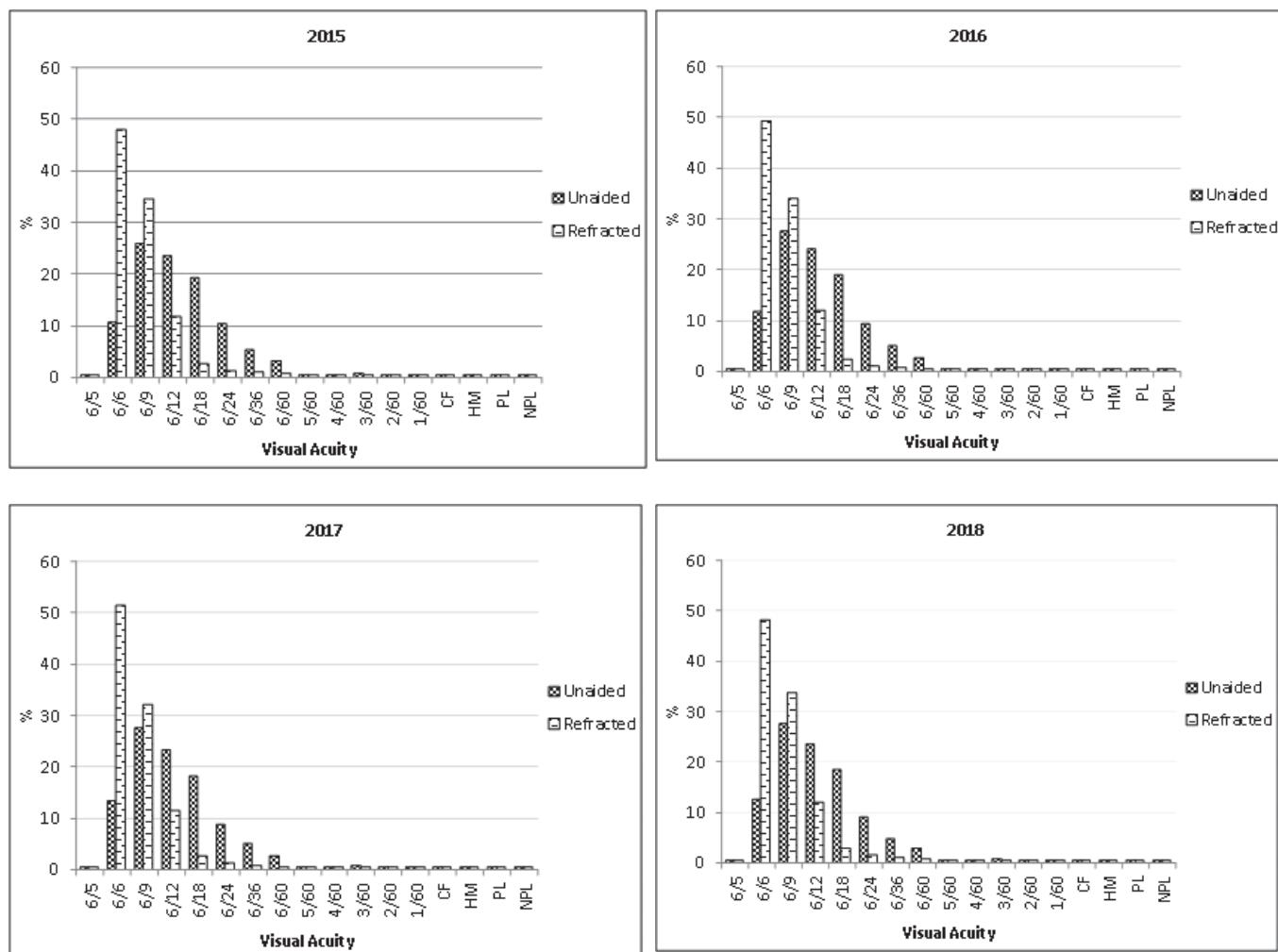


Figure 1.5.5-1: Post-operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2009–2018

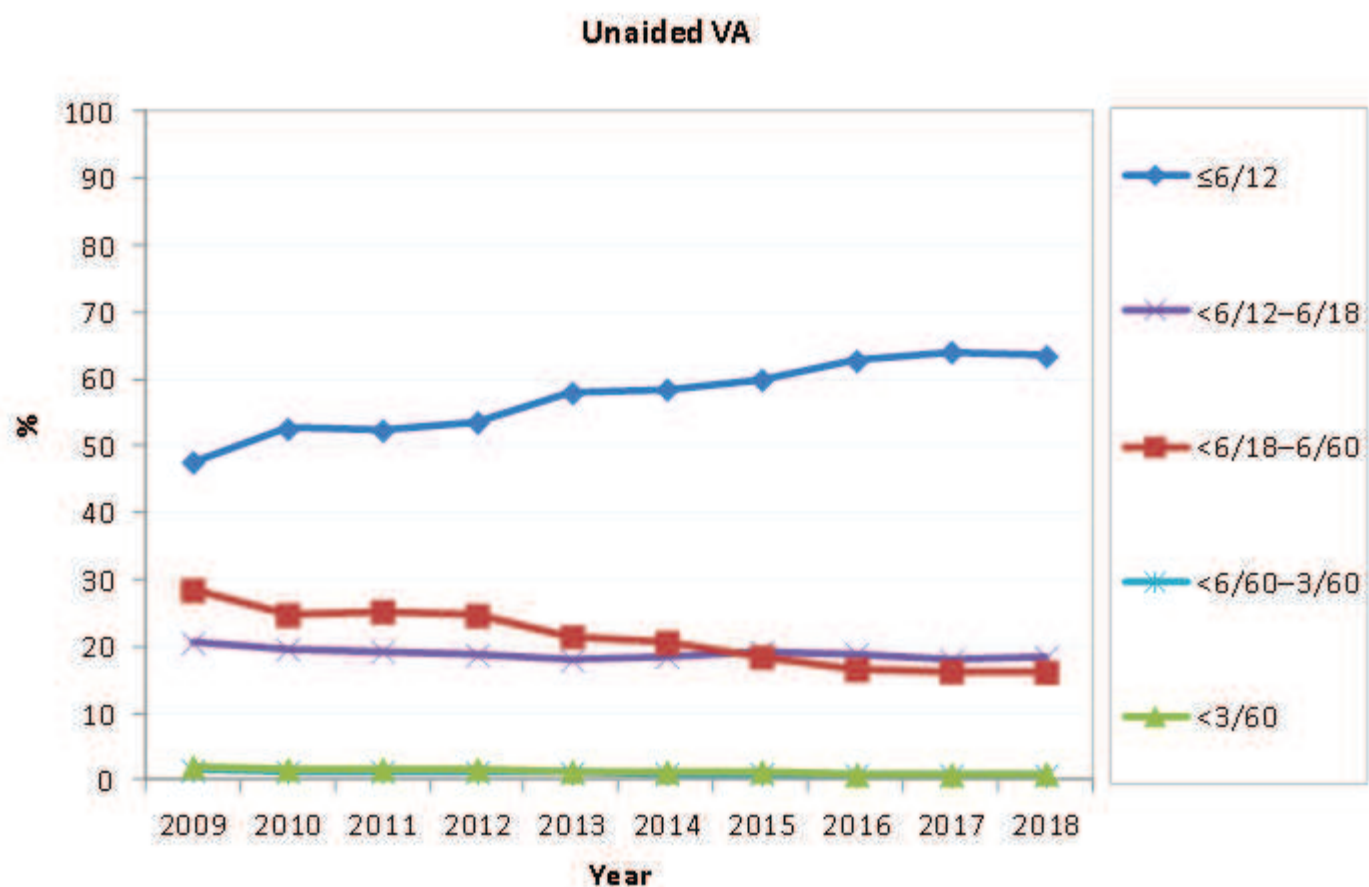


Figure 1.5.5-2: Post-operative Unaided Visual Acuity by Vision Category (No Ocular Co-morbidity), CSR 2009-2018

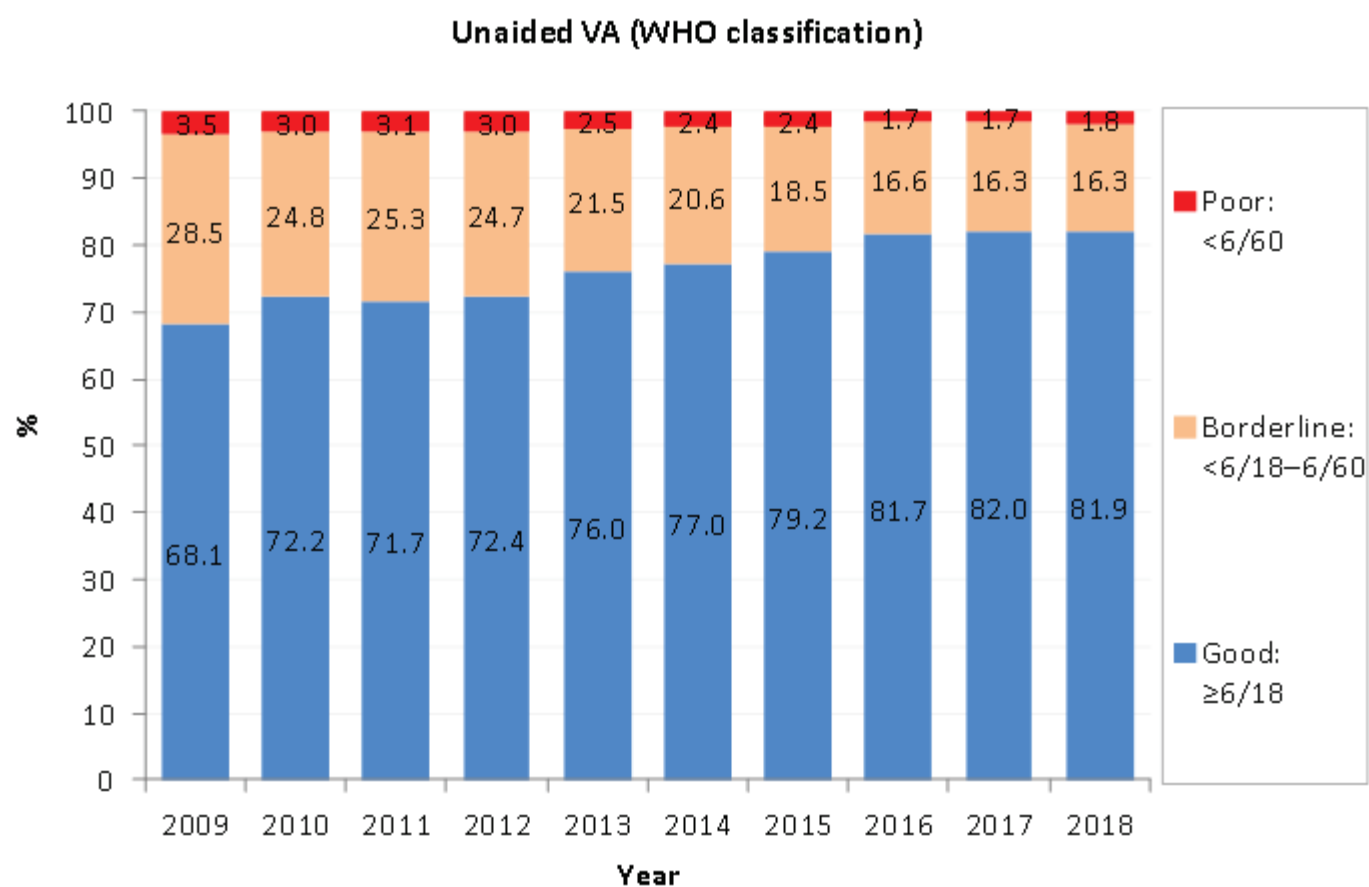


Figure 1.5.5-3: : Post-operative Unaided Visual Acuity by Vision Category (No Ocular Co-morbidity), CSR 2009-2018

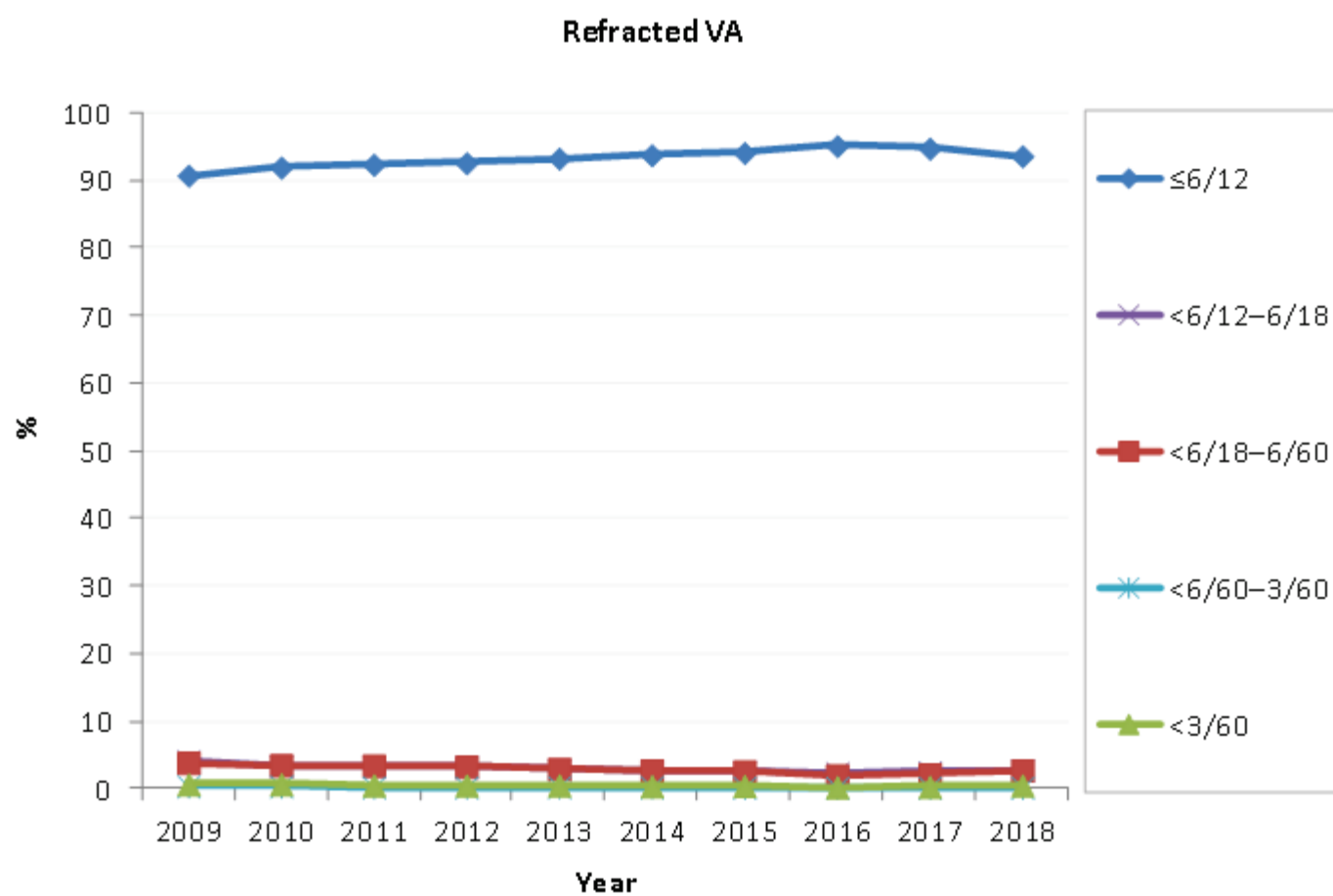


Figure 1.5.5-4: Post-operative Best Corrected Visual Acuity by Vision Category (No Ocular Co-morbidity), CSR 2009–2018

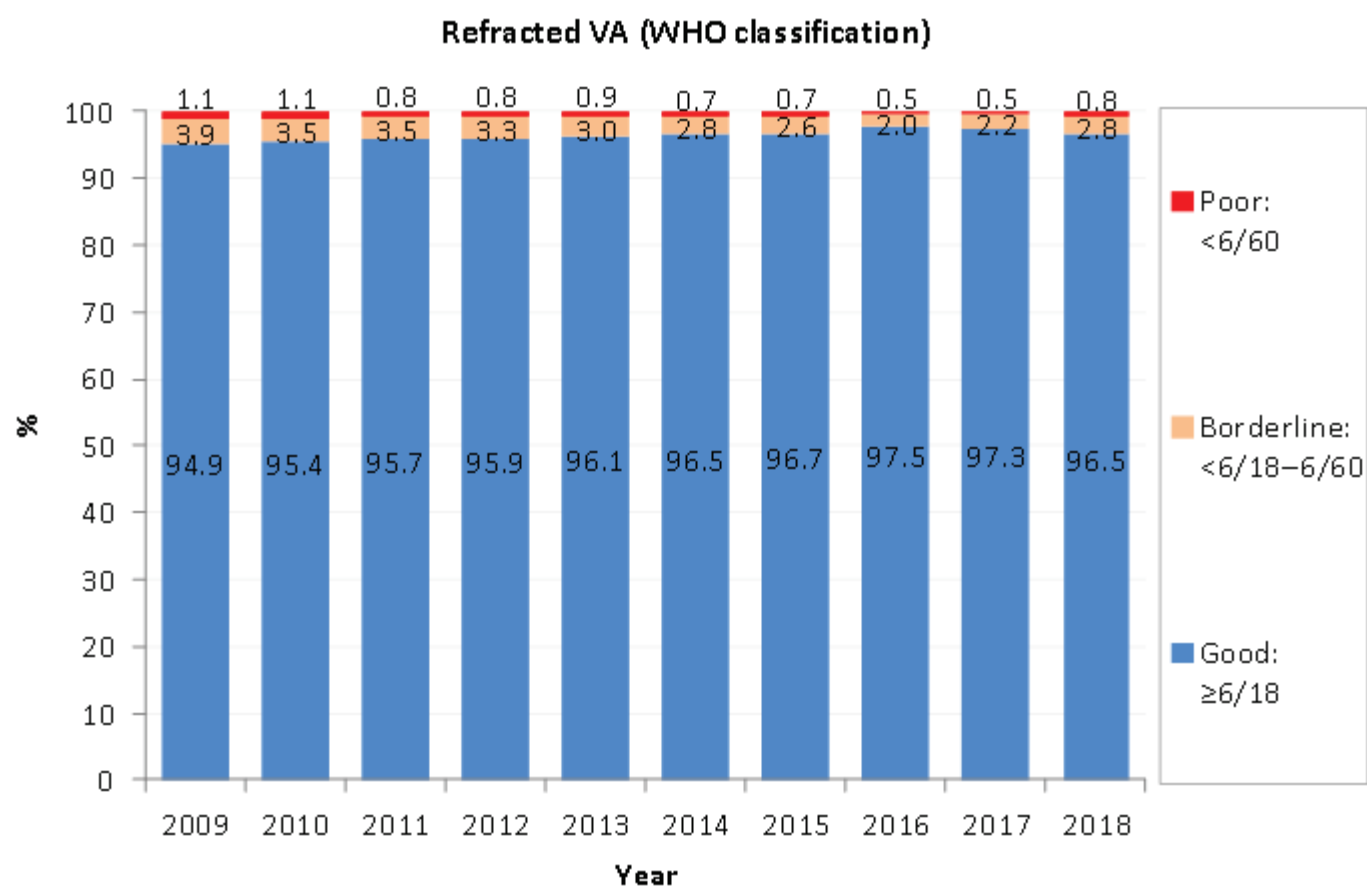


Figure 1.5.5-5: Post-operative Best Corrected Visual Acuity by Vision Category (No Ocular Co-morbidity), CSR 2009–2018

1.5.6 Post-operative Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity

Table 1.5.6-1: Post-operative Visual Acuity in Eyes without Ocular Co-morbidity by Types of Surgery, CSR 2009–2018

Year	2009						2010						2011						2012					
	Unaided			Refracted			Unaided			Refracted			Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	12618	5990	47.5	11782	10704	90.9	14142	7434	52.6	13171	12115	92.0	15846	8297	52.4	14576	13468	92.4	17078	9148	53.6	15413	14279	92.6
Phaco	9511	5038	53.0	9001	8397	93.3	11520	6589	57.2	10818	10151	93.8	13036	7454	57.2	12155	11465	94.3	14540	8439	58.0	13344	12564	94.2
ECCE	2607	816	31.3	2329	1967	84.5	2089	672	32.2	1866	1596	85.5	2238	689	30.8	1901	1628	85.6	2044	570	27.9	1633	1373	84.1
Phaco → ECCE	270	53	19.6	259	200	77.2	268	67	25.0	253	198	78.3	311	59	19.0	291	210	72.2	261	41	15.7	239	176	73.6
Lens Aspiration	160	57	35.6	128	89	69.5	192	86	44.8	168	126	75.0	200	79	39.5	175	131	74.9	163	84	51.5	141	124	87.9
ICCE	29	7	24.1	25	15	60.0	28	4	14.3	25	13	52.0	20	3	15.0	19	10	52.6	24	2	8.3	20	13	65.0

Year	2013						2014						2015						2016					
	Unaided			Refracted			Unaided			Refracted			Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	19441	11264	57.9	17915	16716	93.3	21585	12624	58.5	20425	19160	93.8	23674	14191	59.9	22544	21223	94.1	28855	18112	62.8	27617	26283	95.2
Phaco	17505	10710	61.2	16159	15275	94.5	19937	12128	60.8	18914	17924	94.8	21804	13636	62.5	20818	19793	95.1	26724	17442	65.3	25642	24649	96.1
ECCE	1403	386	27.5	1269	1053	83.0	1139	335	29.4	1051	886	84.3	1271	382	30.1	1181	1018	86.2	1453	448	30.8	1350	1149	85.1
Phaco → ECCE	306	69	22.5	281	219	77.9	301	81	26.9	283	211	74.6	353	71	20.1	323	231	71.5	372	78	21.0	353	264	74.8
Lens Aspiration	164	84	51.2	151	129	85.4	145	66	45.5	125	107	85.6	184	90	48.9	168	142	84.5	233	123	52.8	208	179	86.1
ICCE	38	8	21.1	35	28	80.0	30	8	26.7	28	16	57.1	32	5	15.6	29	19	65.5	44	9	20.5	39	25	64.1

Year	2017						2018					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	31704	20312	64.1	30421	28835	94.8	33401	21195	63.5	32529	30468	93.7
Phaco	29702	19693	66.3	28519	27310	95.8	31342	20573	65.6	30541	28921	94.7
ECCE	1681	478	28.4	1601	1296	80.9	1567	427	27.2	1510	1197	79.3
Lens Aspiration	218	121	55.5	210	173	82.4	312	154	49.4	303	234	77.2
ICCE	49	8	16.3	43	26	60.5	88	11	12.5	85	47	55.3
SICS	1	0	0.0	1	0	0.0	57	18	31.6	56	46	82.1

Number and percentage (%) are based on available information.

Table 1.5.6-2: Post-operative Visual Acuity (6/18 or Better) in Eyes without Ocular Co-morbidity by Types of Surgery, CSR 2009–2018

Year	2009						2010						2011						2012					
	Unaided			Refracted			Unaided			Refracted			Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	12599	8575	68.1	11763	11166	94.9	14132	10203	72.2	13162	12552	95.4	15835	11349	71.7	14568	13940	95.7	17067	12353	72.4	15404	14772	95.9
Phaco	9511	7034	74.0	9001	8674	96.4	11520	8847	76.8	10818	10460	96.7	13036	9933	76.2	12155	11775	96.9	14540	11180	76.9	13344	12908	96.7
ECCE	2607	1334	51.2	2329	2121	91.1	2089	1093	52.3	1866	1695	90.8	2238	1173	52.4	1901	1751	92.1	2044	950	46.5	1633	1498	91.7
Phaco → ECCE	270	100	37.0	259	231	89.2	268	116	43.3	253	220	87.0	311	122	39.2	291	237	81.4	261	93	35.6	239	199	83.3
Lens Aspiration	160	83	51.9	128	99	77.3	192	122	63.5	168	136	81.0	200	109	54.5	175	143	81.7	163	114	69.9	141	129	91.5
ICCE	29	11	37.9	25	20	80.0	28	10	35.7	25	15	60.0	20	5	25.0	19	13	68.4	24	5	20.8	20	15	75.0

Year	2013						2014						2015						2016					
	Unaided			Refracted			Unaided			Refracted			Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	19441	14769	76.0	17915	17223	96.1	21585	16624	77.0	20425	19708	96.5	23674	18738	79.2	22544	21801	96.7	28855	23566	81.7	27617	26928	97.5
Phaco	17505	13854	79.1	16159	15666	96.9	19937	15818	79.3	18914	18364	97.1	21804	17827	81.8	20818	20264	97.3	26724	22489	84.2	25642	25171	98.2
ECCE	1403	647	46.1	1269	1138	89.7	1139	559	49.1	1051	963	91.6	1271	633	49.8	1181	1079	91.4	1453	727	50.0	1350	1228	91.0
Phaco → ECCE	306	127	41.5	281	240	85.4	301	130	43.2	283	235	83.0	353	131	37.1	323	265	82.0	372	151	40.6	353	296	83.9
Lens Aspiration	164	116	70.7	151	135	89.4	145	98	67.6	125	112	89.6	184	127	69.0	168	151	89.9	233	174	74.7	208	188	90.4
ICCE	38	17	44.7	35	29	82.9	30	11	36.7	28	17	60.7	32	8	25.0	29	22	75.9	44	12	27.3	39	27	69.2

Year	2017						2018					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	31704	26000	82.0	30421	29593	97.3	33401	27357	81.9	32529	31376	96.5
Phaco	29702	24984	84.1	28519	27908	97.9	31342	26326	84.0	30541	29665	97.1
ECCE	1681	826	49.1	1601	1429	89.3	1567	741	47.3	1510	1320	87.4
Lens Aspiration	218	156	71.6	210	183	87.1	312	211	67.6	303	255	84.2
ICCE	49	12	24.5	43	33	76.7	88	28	31.8	85	58	68.2
SICS	1	0	0.0	1	1	100.0	57	34	59.6	56	49	87.5

Number and percentage (%) are based on available information.

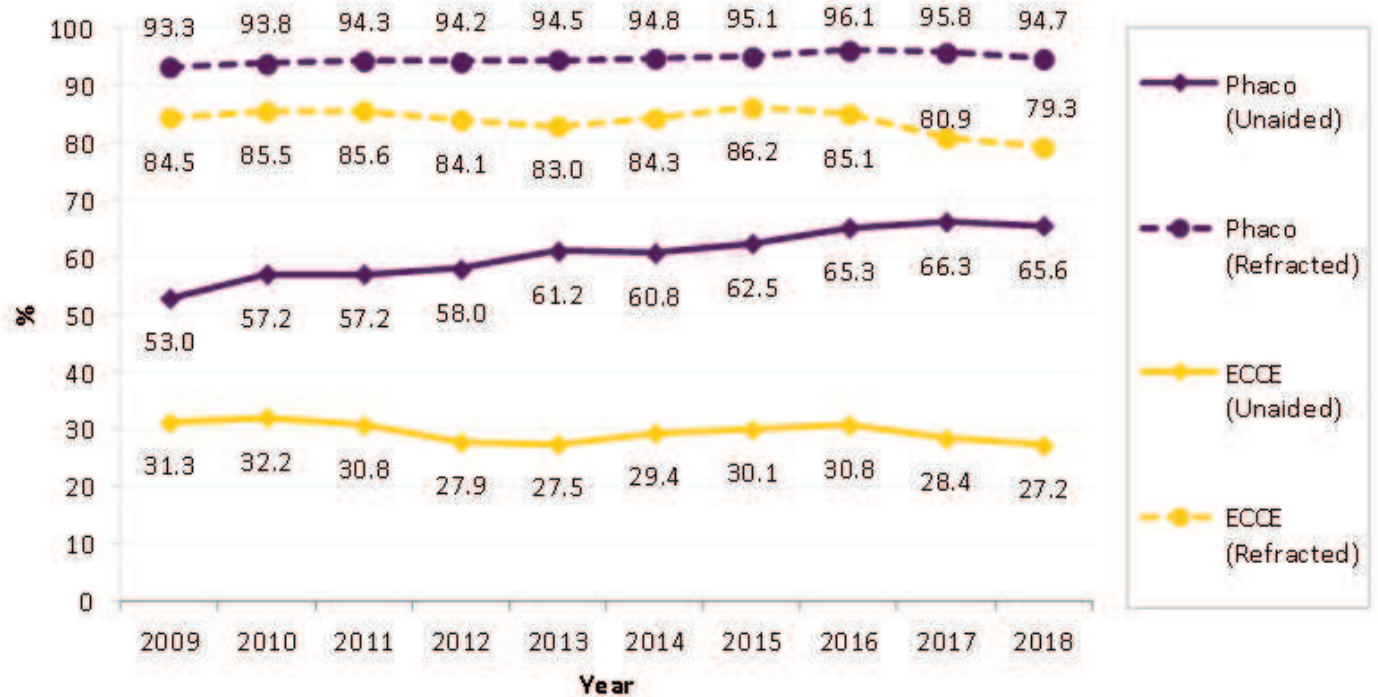


Figure 1.5.6-1: Post-operative Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity, CSR 2009–2018

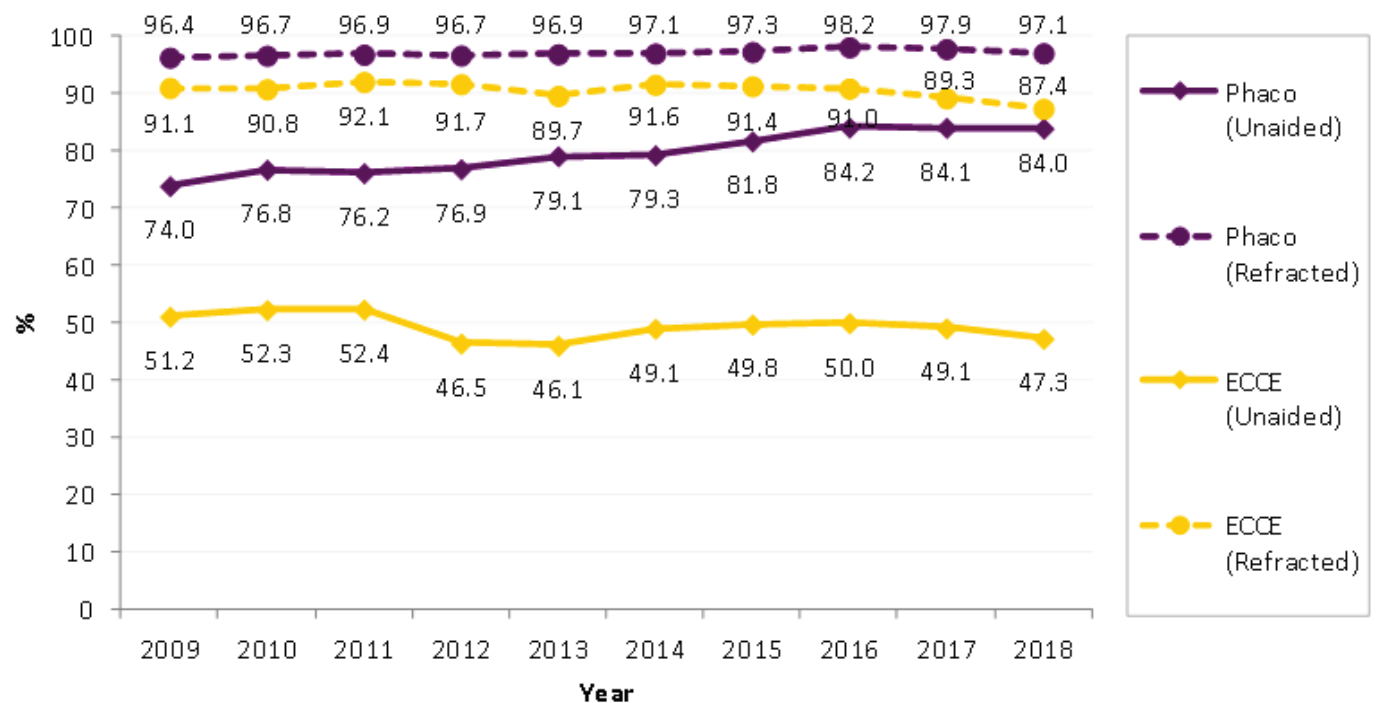


Figure 1.5.6-2: Post-operative Visual Acuity 6/18 or Better for Eyes without Ocular Co-morbidity, CSR 2009–2018

Table 1.5.6-3: Post-operative Best Corrected Visual Acuity in Eyes without Ocular Co-morbidity by Intra-operative Complications and Types of Surgery, CSR 2018

	Types of Cataract Surgery																	
	All Surgeries			Lens Aspiration			ECCE			Phaco			ICCE			SICS		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	32529	30468	93.7	303	234	77.2	1510	1197	79.3	30541	28921	94.7	85	47	55.3	56	46	82.1
No intra-op complications	1236	941	76.1	16	9	56.3	348	249	71.6	808	649	80.3	42	19	45.2	5	3	60.0
	31293	29527	94.4	287	225	78.4	1162	948	81.6	29733	28272	95.1	43	28	65.1	51	43	84.3

Number and percentage (%) are based on available information.

Table 1.5.6-4: Post-operative Best Corrected Visual Acuity (6/18 or better) in Eyes without Ocular Co-morbidity by Intra-operative Complications and Types of Surgery, CSR 2018

	Types of Cataract Surgery																	
	All Surgeries			Lens Aspiration			ECCE			Phaco			ICCE			SICS		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	32529	31376	96.5	303	255	84.2	1510	1320	87.4	30541	29665	97.1	85	58	68.2	56	49	87.5
No intra-op complications	1236	1051	85.0	16	12	75.0	348	279	80.2	808	714	88.4	42	28	66.7	5	3	60.0
	31293	30325	96.9	287	243	84.7	1162	1041	89.6	29733	28951	97.4	43	30	69.8	51	46	90.2

Number and percentage (%) are based on available information.

Table 1.5.6-5: Post-operative Best Corrected Visual Acuity in Eyes without Ocular Co-morbidity by Surgeon Status and Types of Surgery, CSR 2018

	Types of Cataract Surgery																	
	All Surgeries			Lens Aspiration			ECCE			Phaco			ICCE			SICS		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
	32529	30468	93.7	303	234	77.2	1510	1197	79.3	30541	28921	94.7	85	47	55.3	56	46	82.1
Specialist	28994	27164	93.7	292	225	77.1	1038	814	78.4	27505	26019	94.6	72	39	54.2	56	46	82.1
Gazetting Specialist	1671	1580	94.6	10	8	80.0	85	71	83.5	1567	1496	95.5	7	4	57.1	0	0	0.0
Medical Officer	1763	1625	92.2	1	1	100.0	387	312	80.6	1368	1307	95.5	6	4	66.7	0	0	0.0

Number and percentage (%) are based on available information.

Table 1.5.6-6: Post-operative Best Corrected Visual Acuity (6/18 or better) in Eyes without Ocular Co-morbidity by Surgeon Status and Types of Surgery, CSR 2018

	Types of Cataract Surgery																	
	All Surgeries			Lens Aspiration			ECCE			Phaco			ICCE			SICS		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
	32529	31376	96.5	303	255	84.2	1510	1320	87.4	30541	29665	97.1	85	58	68.2	56	49	87.5
Specialist	28994	27981	96.5	292	246	84.2	1038	910	87.7	27505	26701	97.1	72	49	68.1	56	49	87.5
Gazetting Specialist	1671	1614	96.6	10	8	80.0	85	74	87.1	1567	1525	97.3	7	5	71.4	0	0	0.0
Medical Officer	1763	1681	95.3	1	1	100.0	387	336	86.8	1368	1339	97.9	6	4	66.7	0	0	0.0

Number and percentage (%) are based on available information.

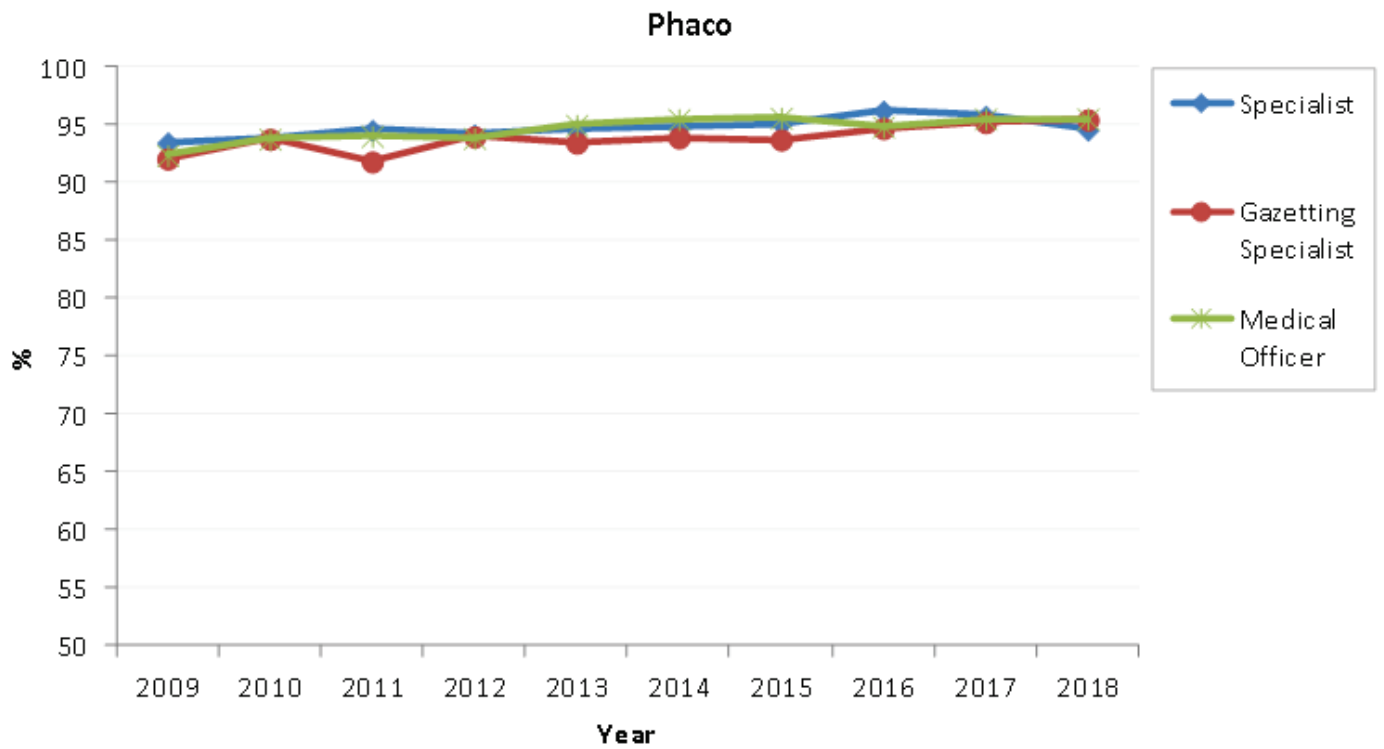


Figure 1.5.6-3: Post-operative Best Corrected Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity by Surgeon Status in Phacoemulsification, CSR 2009–2018

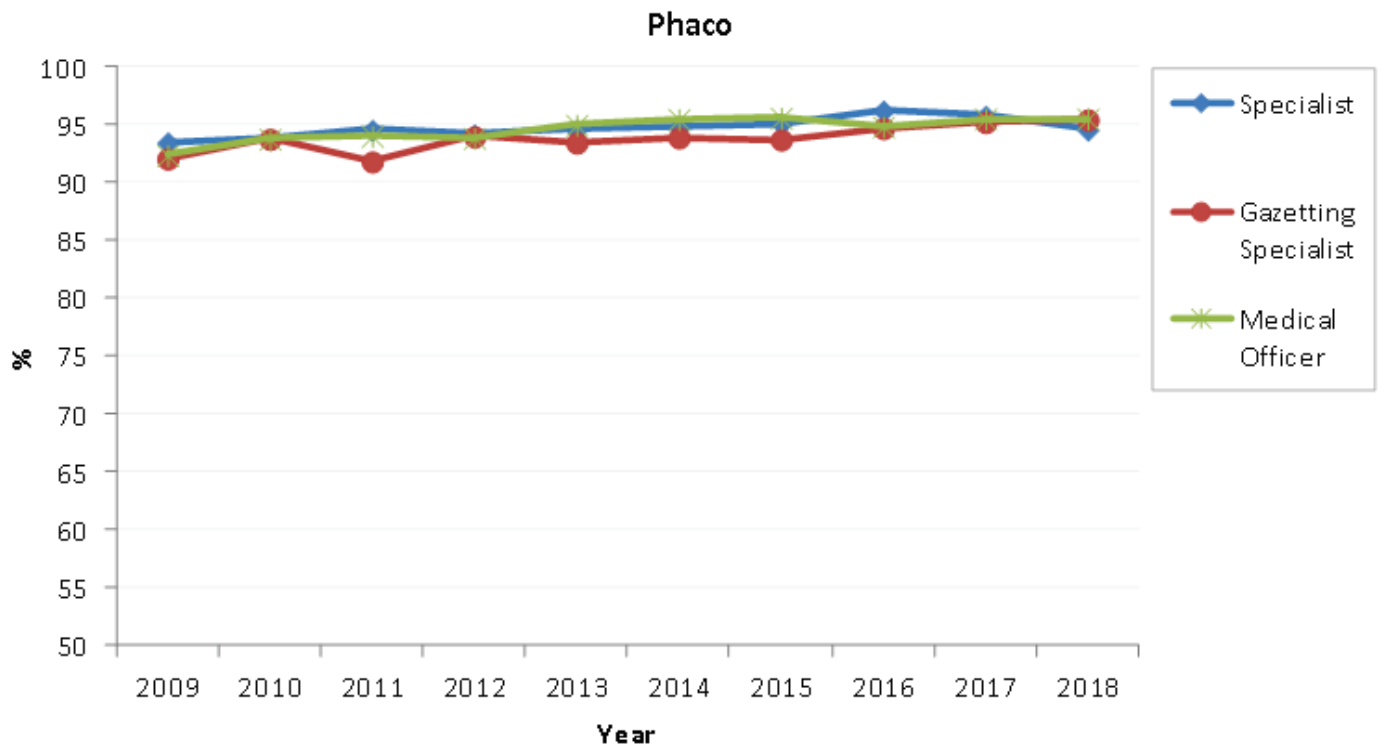


Figure 1.5.6-4: Post-operative Best Corrected Visual Acuity 6/18 or Better in Eyes without Ocular Co-morbidity by Surgeon Status in Phacoemulsification, CSR 2009–2018

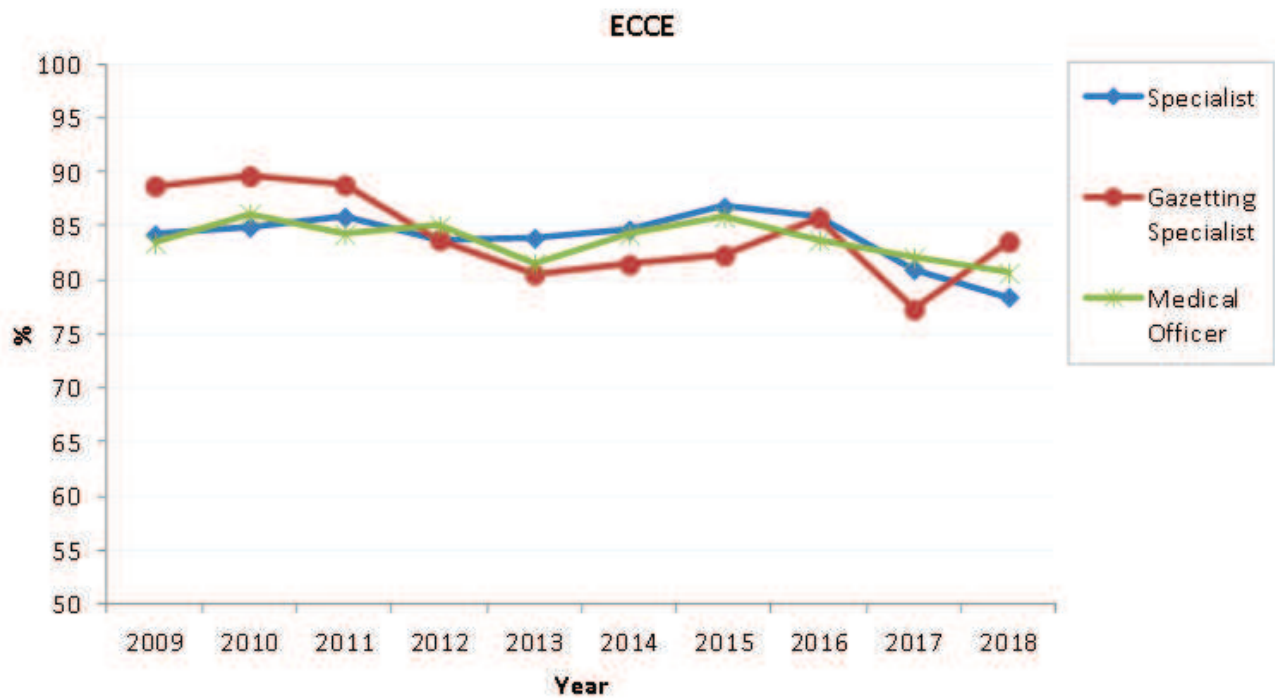


Figure 1.5.6-5: Post-operative Best Corrected Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity by Surgeon Status in ECCE, CSR 2009–2018

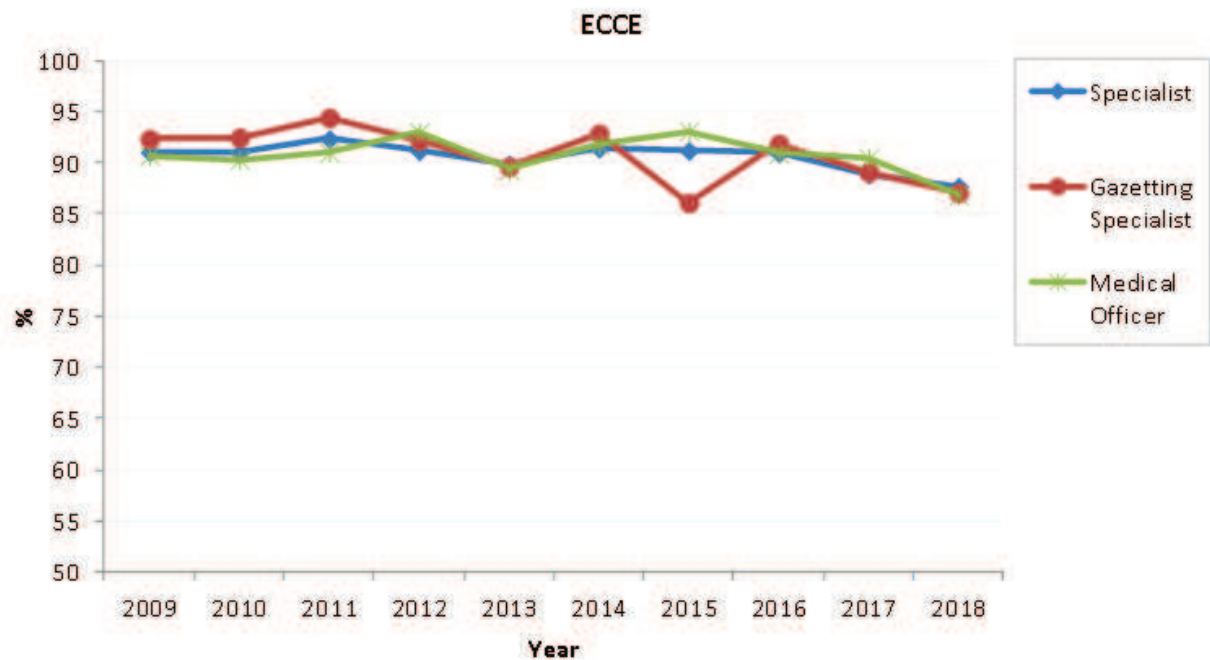


Figure 1.5.6-6: Post-operative Best Corrected Visual Acuity 6/18 or Better in Eyes without Ocular Co-morbidity by Surgeon Status in ECCE, CSR 2009–2018

Table 1.5.6-7: Post-operative Best Corrected Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity by SDP and Types of Surgery, CSR 2018

Hospital	All Surgeries			Type of Cataract Surgery														
				Lens Aspiration			ECCE			Phaco			ICCE			SICS		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
All centre	32529	30468	93.7	30541	28921	94.7	1510	1197	79.3	303	234	77.2	85	47	55.3	56	46	82.1
Alor Setar	559	512	91.6	505	475	94.1	37	22	59.5	12	12	100.0	0	0	0.0	0	0	0.0
Ampang	676	652	96.4	615	596	96.9	59	54	91.5	1	1	100.0	1	1	100.0	0	0	0.0
Batu Pahat	506	491	97.0	473	461	97.5	20	20	100.0	7	5	71.4	3	3	100.0	0	0	0.0
Bintulu	115	110	95.7	115	110	95.7	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Bukit Mertajam	760	760	100.0	746	746	100.0	9	9	100.0	4	4	100.0	1	1	100.0	0	0	0.0
Ipoh	1995	1807	90.6	1932	1771	91.7	40	23	57.5	17	12	70.6	5	1	20.0	1	0	0.0
Kangar	547	519	94.9	458	441	96.3	86	75	87.2	1	1	100.0	2	2	100.0	0	0	0.0
Kemaman	58	54	93.1	42	41	97.6	14	11	78.6	1	1	100.0	0	0	0.0	0	0	0.0
Keningau	146	139	95.2	137	130	94.9	6	6	100.0	1	1	100.0	1	1	100.0	0	0	0.0
Klang	1458	1309	89.8	1382	1261	91.2	45	32	71.1	24	13	54.2	5	2	40.0	0	0	0.0
Kluang	128	125	97.7	118	115	97.5	7	7	100.0	1	1	100.0	2	2	100.0	0	0	0.0
Kota Bharu	994	940	94.6	831	799	96.1	143	125	87.4	11	10	90.9	7	4	57.1	0	0	0.0
Kuala Krai	313	292	93.3	256	244	95.3	50	44	88.0	7	4	57.1	0	0	0.0	0	0	0.0
Kuala Lumpur	1390	1255	90.3	1314	1206	91.8	62	45	72.6	11	3	27.3	1	0	0.0	0	0	0.0
Kuala Pilah	306	288	94.1	291	277	95.2	15	11	73.3	0	0	0.0	0	0	0.0	0	0	0.0
Kuala Terengganu	736	678	92.1	658	618	93.9	53	41	77.4	22	17	77.3	3	2	66.7	0	0	0.0
Kuantan	836	765	91.5	742	692	93.3	81	63	77.8	10	8	80.0	2	2	100.0	0	0	0.0
Kulim	417	404	96.9	393	384	97.7	21	17	81.0	3	3	100.0	0	0	0.0	0	0	0.0
Likas	19	8	42.1	1434	1381	96.3	0	0	0.0	19	8	42.1	0	0	0.0	0	0	0.0
Melaka	1516	1438	94.9	0	0	0.0	65	47	72.3	12	6	50.0	4	3	75.0	0	0	0.0
Miri	573	552	96.3	549	533	97.1	21	16	76.2	1	1	100.0	1	1	100.0	1	1	100.0
Muar	684	650	95.0	645	619	96.0	31	26	83.9	5	4	80.0	3	1	33.3	0	0	0.0
Pulau Pinang	1393	1281	92.0	1361	1258	92.4	18	14	77.8	5	5	100.0	6	2	33.3	0	0	0.0
Putrajaya	341	329	96.5	310	302	97.4	22	19	86.4	7	6	85.7	1	1	100.0	0	0	0.0
Queen Elizabeth KK	648	634	97.8	610	598	98.0	33	31	93.9	2	2	100.0	3	3	100.0	0	0	0.0
Sandakan	248	229	92.3	215	203	94.4	29	23	79.3	3	2	66.7	1	1	100.0	0	0	0.0
Sarikei	292	280	95.9	286	276	96.5	6	4	66.7	0	0	0.0	0	0	0.0	0	0	0.0

Segamat	153	148	96.7	137	133	97.1	16	15	93.8	0	0	0.0	0	0	0.0	0	0	0.0
Selayang	600	540	90.0	555	510	91.9	22	15	68.2	15	13	86.7	8	2	25.0	0	0	0.0
Serdang	1134	1001	88.3	1062	958	90.2	52	27	51.9	13	11	84.6	2	1	50.0	0	0	0.0
Seremban	1002	930	92.8	956	896	93.7	27	20	74.1	7	6	85.7	2	1	50.0	8	6	75.0
Shah Alam	415	390	94.0	404	386	95.5	7	2	28.6	2	2	100.0	2	0	0.0	0	0	0.0
Sibu	331	301	90.9	326	299	91.7	5	2	40.0	0	0	0.0	0	0	0.0	0	0	0.0
Sri Manjung	513	506	98.6	503	498	99.0	5	4	80.0	4	4	100.0	1	0	0.0	0	0	0.0
Sultan Ismail	511	469	91.8	488	450	92.2	12	10	83.3	9	8	88.9	2	1	50.0	0	0	0.0
Sultanah Aminah JB	714	664	93.0	684	643	94.0	11	7	63.6	15	12	80.0	1	0	0.0	0	0	0.0
Sungai Buloh	326	311	95.4	309	297	96.1	15	13	86.7	1	1	100.0	1	0	0.0	0	0	0.0
Sungei Petani	832	765	91.9	789	734	93.0	29	20	69.0	10	10	100.0	3	0	0.0	1	1	100.0
Taiping	1460	1459	99.9	1345	1344	99.9	108	108	100.0	7	7	100.0	0	0	0.0	0	0	0.0
Tawau	264	248	93.9	234	224	95.7	25	20	80.0	4	4	100.0	1	0	0.0	0	0	0.0
Teluk Intan	720	696	96.7	676	658	97.3	41	36	87.8	3	2	66.7	0	0	0.0	0	0	0.0
Temerloh	507	463	91.3	462	430	93.1	39	28	71.8	4	3	75.0	2	2	100.0	0	0	0.0
Umum Sarawak	930	888	95.5	915	878	96.0	10	8	80.0	2	1	50.0	2	1	50.0	0	0	0.0
KK-KKM Kedah	184	171	92.9	162	153	94.4	1	0	0.0	0	0	0.0	0	0	0.0	21	18	85.7
KK-KKM Kelantan	72	63	87.5	65	58	89.2	7	5	71.4	0	0	0.0	0	0	0.0	0	0	0.0
KK-KKM Neg. Sembilan	353	327	92.6	338	316	93.5	11	7	63.6	0	0	0.0	3	3	100.0	0	0	0.0
KK-KKM Pahang	105	98	93.3	101	94	93.1	4	4	100.0	0	0	0.0	0	0	0.0	0	0	0.0
KK-KKM Sabah	278	256	92.1	262	243	92.7	5	3	60.0	2	2	100.0	1	1	100.0	8	7	87.5
KK-KKM Sarawak	437	398	91.1	414	382	92.3	7	3	42.9	0	0	0.0	0	0	0.0	16	13	81.3
KK-KKM Terengganu	121	114	94.2	112	106	94.6	8	7	87.5	0	0	0.0	1	1	100.0	0	0	0.0
KK-KKM Static	2913	2761	94.8	2824	2694	95.4	70	48	68.6	18	18	100.0	1	1	100.0	0	0	0.0

Number and percentage (%) are based on available information.

Table 1.5.6-8: Post-operative Best Corrected Visual Acuity 6/18 or Better (WHO Classification) in Eyes without Ocular Co-morbidity by SDP and Types of Surgery, CSR 2018

Hospital	All Surgeries			Type of Cataract Surgery														
				Phaco			ECCE			Lens Aspiration			ICCE			SICS		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
All centre	32529	31376	96.5	30541	29665	97.1	1510	1320	87.4	303	255	84.2	85	58	68.2	56	49	87.5
Alor Setar	559	529	94.6	505	488	96.6	37	25	67.6	12	12	100.0	0	0	0.0	0	0	0.0
Ampang	676	661	97.8	615	604	98.2	59	55	93.2	1	1	100.0	1	1	100.0	0	0	0.0
Batu Pahat	506	497	98.2	473	466	98.5	20	20	100.0	7	6	85.7	3	3	100.0	0	0	0.0
Bintulu	115	115	100.0	115	115	100.0	0	0	0.0	0	0	0.0	1	1	100.0	0	0	0.0
Bukit Mertajam	760	760	100.0	746	746	100.0	9	9	100.0	4	4	100.0	0	0	0.0	0	0	0.0
Ipoh	1995	1903	95.4	1932	1857	96.1	40	31	77.5	17	13	76.5	5	2	40.0	1	0	0.0
Kangar	547	527	96.3	458	445	97.2	86	79	91.9	1	1	100.0	2	2	100.0	0	0	0.0
Kemaman	58	56	96.6	42	41	97.6	14	13	92.9	1	1	100.0	0	0	0.0	0	0	0.0
Keningau	146	140	95.9	137	131	95.6	6	6	100.0	1	1	100.0	1	1	100.0	0	0	0.0
Klang	1458	1387	95.1	1382	1325	95.9	45	37	82.2	24	19	79.2	5	4	80.0	0	0	0.0
Kluang	128	127	99.2	118	117	99.2	7	7	100.0	1	1	100.0	2	2	100.0	0	0	0.0
Kota Bharu	994	963	96.9	831	812	97.7	143	134	93.7	11	10	90.9	7	5	71.4	0	0	0.0
Kuala Krai	313	306	97.8	256	253	98.8	50	48	96.0	7	5	71.4	0	0	0.0	0	0	0.0
Kuala Lumpur	1390	1316	94.7	1314	1258	95.7	62	52	83.9	11	4	36.4	1	1	100.0	0	0	0.0
Kuala Pilah	306	296	96.7	291	284	97.6	15	12	80.0	0	0	0.0	0	0	0.0	0	0	0.0
Kuala Terengganu	736	711	96.6	658	642	97.6	53	47	88.7	22	20	90.9	3	2	66.7	0	0	0.0
Kuantan	836	798	95.5	742	714	96.2	81	73	90.1	10	9	90.0	2	2	100.0	0	0	0.0
Kulim	417	407	97.6	393	386	98.2	21	18	85.7	3	3	100.0	0	0	0.0	0	0	0.0
Likas	19	10	52.6	0	0	0.0	0	0	0.0	19	10	52.6	0	0	0.0	0	0	0.0
Melaka	1516	1464	96.6	1434	1398	97.5	65	55	84.6	12	7	58.3	4	3	75.0	0	0	0.0
Miri	573	562	98.1	549	538	98.0	21	21	100.0	1	1	100.0	1	1	100.0	1	1	100.0
Muar	684	665	97.2	645	631	97.8	31	29	93.5	5	4	80.0	3	1	33.3	0	0	0.0
Pulau Pinang	1393	1332	95.6	1361	1305	95.9	18	15	83.3	5	5	100.0	6	5	83.3	0	0	0.0
Putrajaya	341	332	97.4	310	305	98.4	22	19	86.4	7	6	85.7	1	1	100.0	0	0	0.0
Queen Elizabeth KK	648	639	98.6	610	602	98.7	33	32	97.0	2	2	100.0	3	3	100.0	0	0	0.0
Sandakan	248	236	95.2	215	209	97.2	29	24	82.8	3	2	66.7	1	1	100.0	0	0	0.0
Sarikei	292	285	97.6	286	280	97.9	6	5	83.3	0	0	0.0	0	0	0.0	0	0	0.0

Segamat	153	150	98.0	137	135	98.5	16	15	93.8	0	0	0.0	0	0	0.0	0	0	0.0
Selayang	600	565	94.2	555	533	96.0	22	16	72.7	15	14	93.3	8	2	25.0	0	0	0.0
Serdang	1134	1073	94.6	1062	1017	95.8	52	38	73.1	13	12	92.3	2	1	50.0	0	0	0.0
Seremban	1002	970	96.8	956	932	97.5	27	22	81.5	7	6	85.7	2	1	50.0	8	7	87.5
Shah Alam	415	395	95.2	404	389	96.3	7	3	42.9	2	2	100.0	2	1	50.0	0	0	0.0
Sibu	331	314	94.9	326	312	95.7	5	2	40.0	0	0	0.0	0	0	0.0	0	0	0.0
Sri Manjung	513	510	99.4	503	502	99.8	5	4	80.0	4	4	100.0	1	0	0.0	0	0	0.0
Sultan Ismail	511	483	94.5	488	464	95.1	12	10	83.3	9	8	88.9	2	1	50.0	0	0	0.0
Sultanah Aminah JB	714	679	95.1	684	656	95.9	11	7	63.6	15	13	86.7	1	0	0.0	0	0	0.0
Sungai Buloh	326	317	97.2	309	303	98.1	15	13	86.7	1	1	100.0	1	0	0.0	0	0	0.0
Sungei Petani	832	789	94.8	789	754	95.6	29	23	79.3	10	10	100.0	3	1	33.3	1	1	100.0
Taiping	1460	1459	99.9	1345	1344	99.9	108	108	100.0	7	7	100.0	0	0	0.0	0	0	0.0
Tawau	264	255	96.6	234	227	97.0	25	24	96.0	4	4	100.0	1	0	0.0	0	0	0.0
Teluk Intan	720	700	97.2	676	661	97.8	41	37	90.2	3	2	66.7	0	0	0.0	0	0	0.0
Temerloh	507	486	95.9	462	447	96.8	39	33	84.6	4	4	100.0	2	2	100.0	0	0	0.0
Umum Sarawak	930	907	97.5	915	894	97.7	10	9	90.0	2	1	50.0	2	2	100.0	0	0	0.0
KK-KKM Kedah	184	176	95.7	162	157	96.9	1	1	100.0	0	0	0.0	0	0	0.0	21	18	85.7
KK-KKM Kelantan	72	67	93.1	65	61	93.8	7	6	85.7	0	0	0.0	0	0	0.0	0	0	0.0
KK-KKM Neg. Sembilan	353	335	94.9	338	323	95.6	11	8	72.7	0	0	0.0	3	3	100.0	0	0	0.0
KK-KKM Pahang	105	101	96.2	101	97	96.0	4	4	100.0	0	0	0.0	0	0	0.0	0	0	0.0
KK-KKM Sabah	278	268	96.4	262	253	96.6	5	4	80.0	2	2	100.0	1	1	100.0	8	8	100.0
KK-KKM Sarawak	437	409	93.6	414	391	94.4	7	4	57.1	0	0	0.0	0	0	0.0	16	14	87.5
KK-KKM Terengganu	121	117	96.7	112	109	97.3	8	7	87.5	0	0	0.0	1	1	100.0	0	0	0.0
KK-KKM Static	2913	2827	97.0	2824	2752	97.5	70	56	80.0	18	18	100.0	1	1	100.0	0	0	0.0

Number and percentage (%) are based on available information.

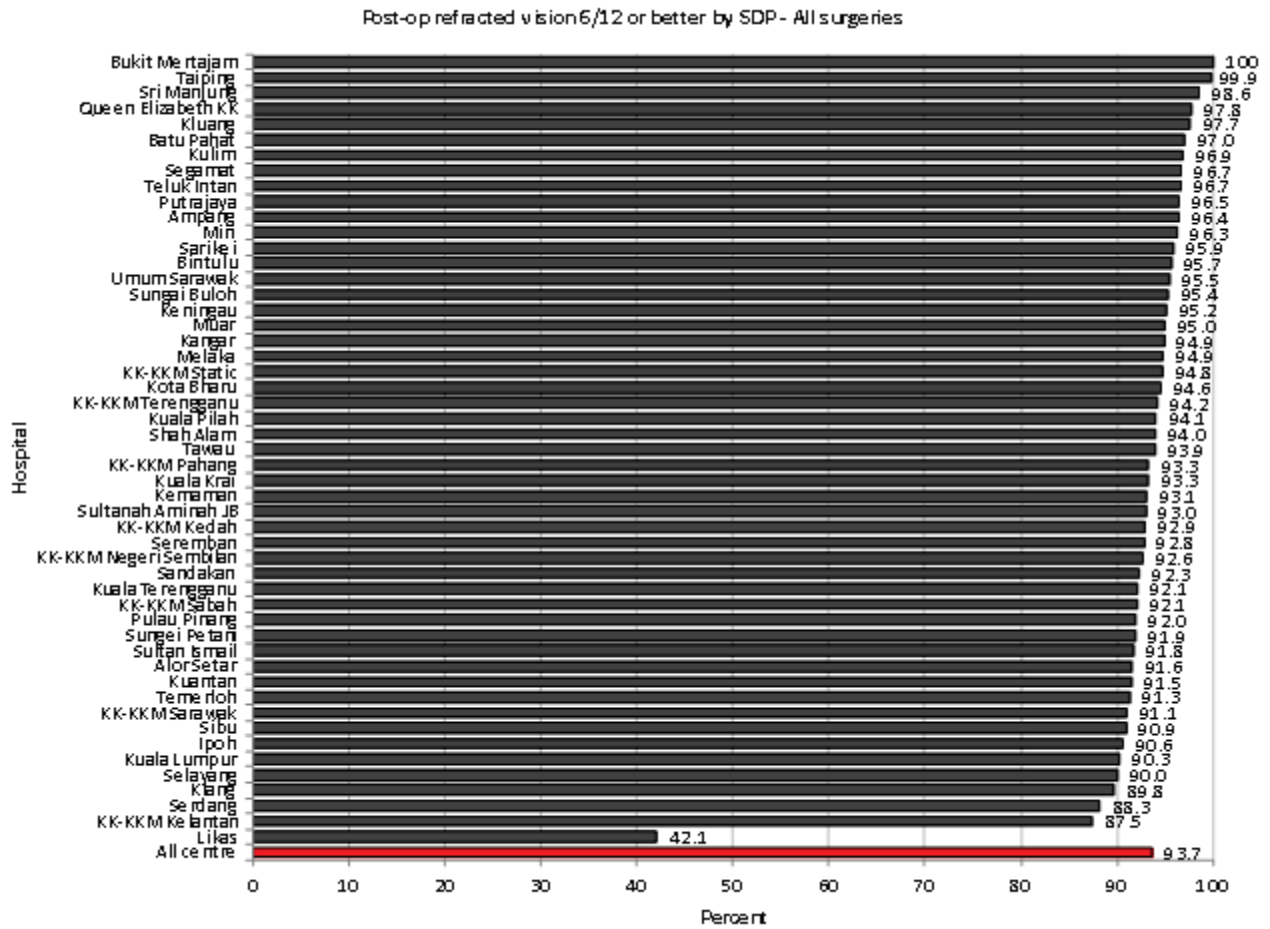


Figure 1.5.6-7: : Post-operative Best Corrected Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity by SDP (All Surgery), CSR 2018

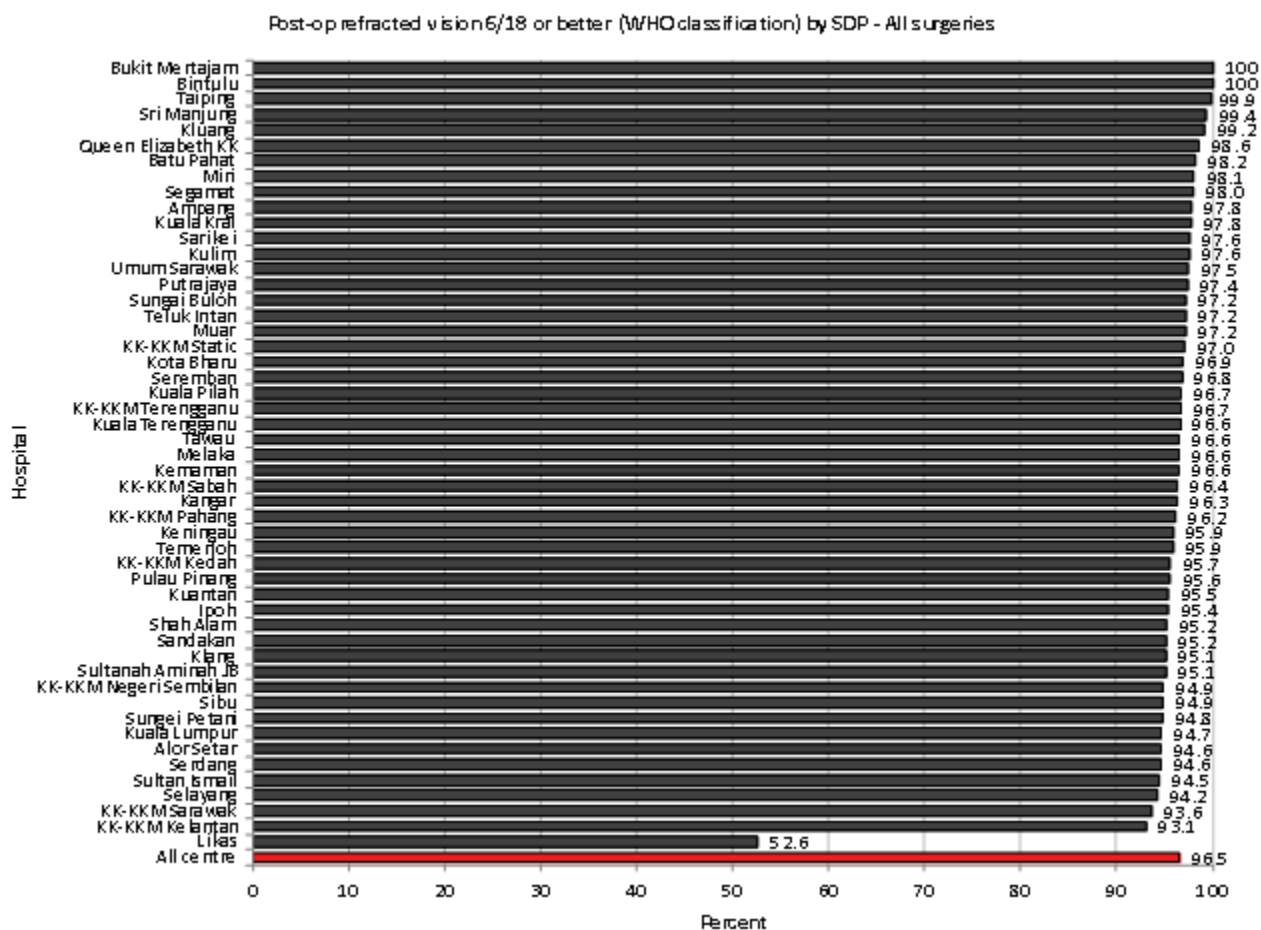


Figure 1.5.6-8: Post-operative Best Corrected Visual Acuity 6/18 or Better (WHO Classification) in Eyes without Ocular Co-morbidity by SDP (All Surgery), CSR 2018

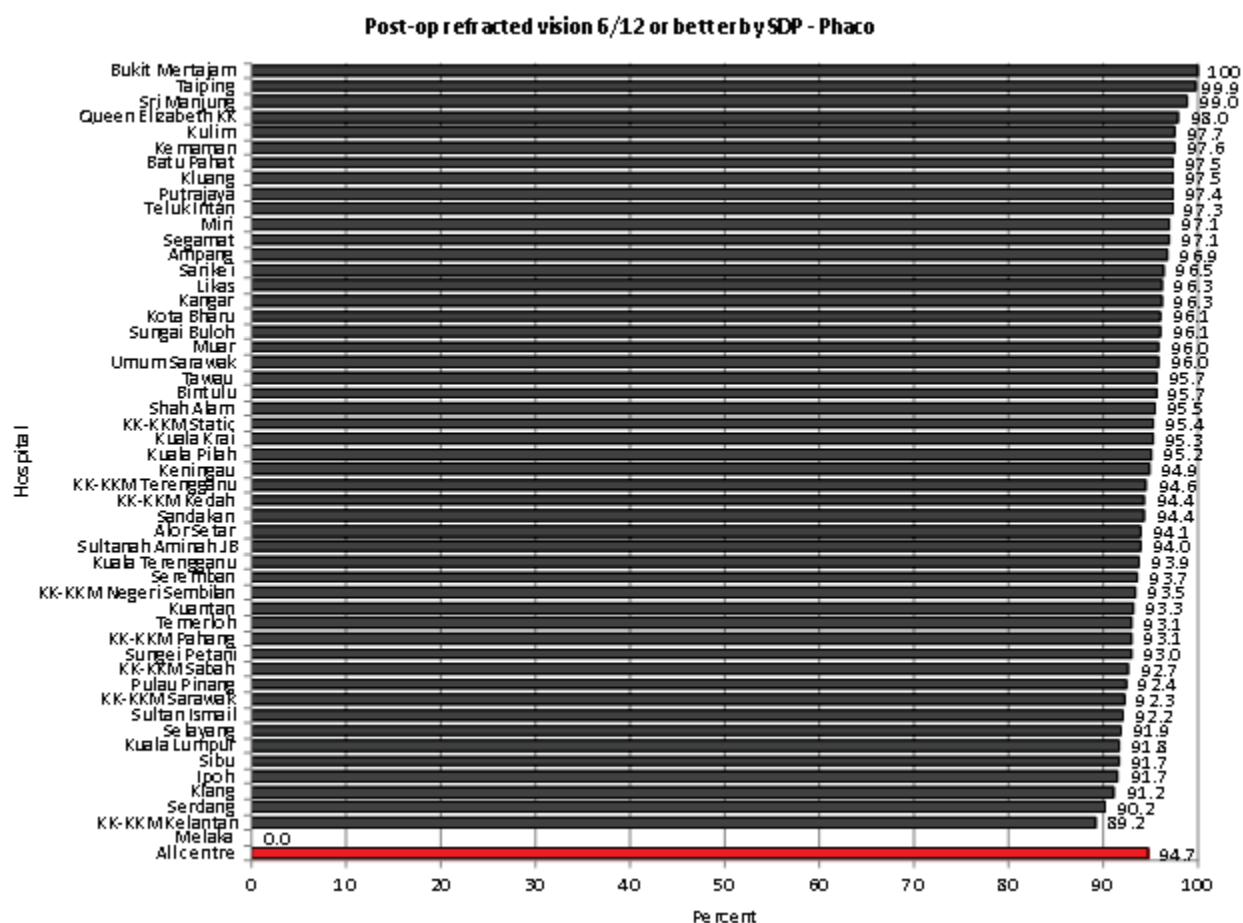


Figure 1.5.6-9: Post-operative Best Corrected Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity by SDP (Phaco), CSR 2018

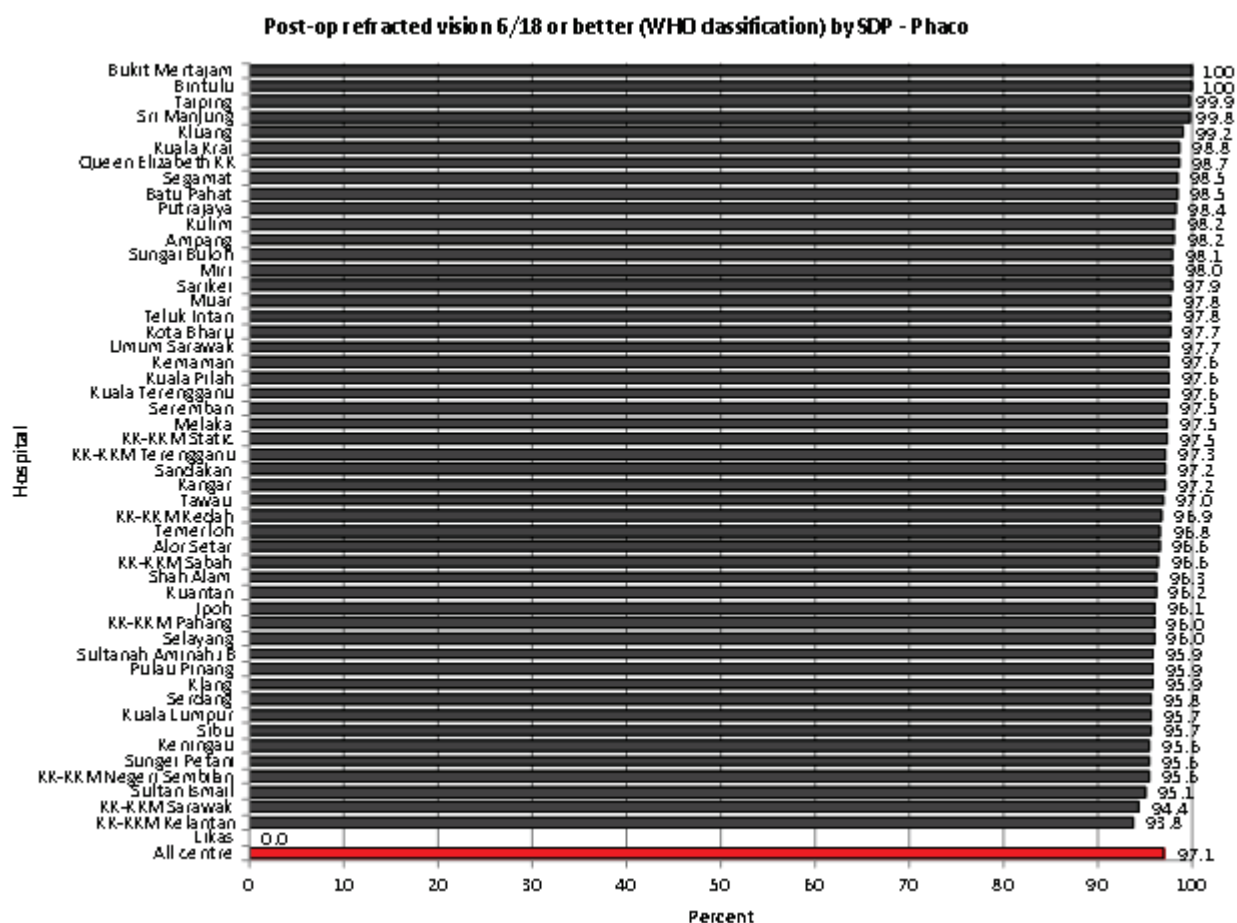


Figure 1.5.6-10: Post-operative Best Corrected Visual Acuity 6/18 or Better (WHO Classification) in Eyes without Ocular Co-morbidity by SDP (Phaco), CSR 2018

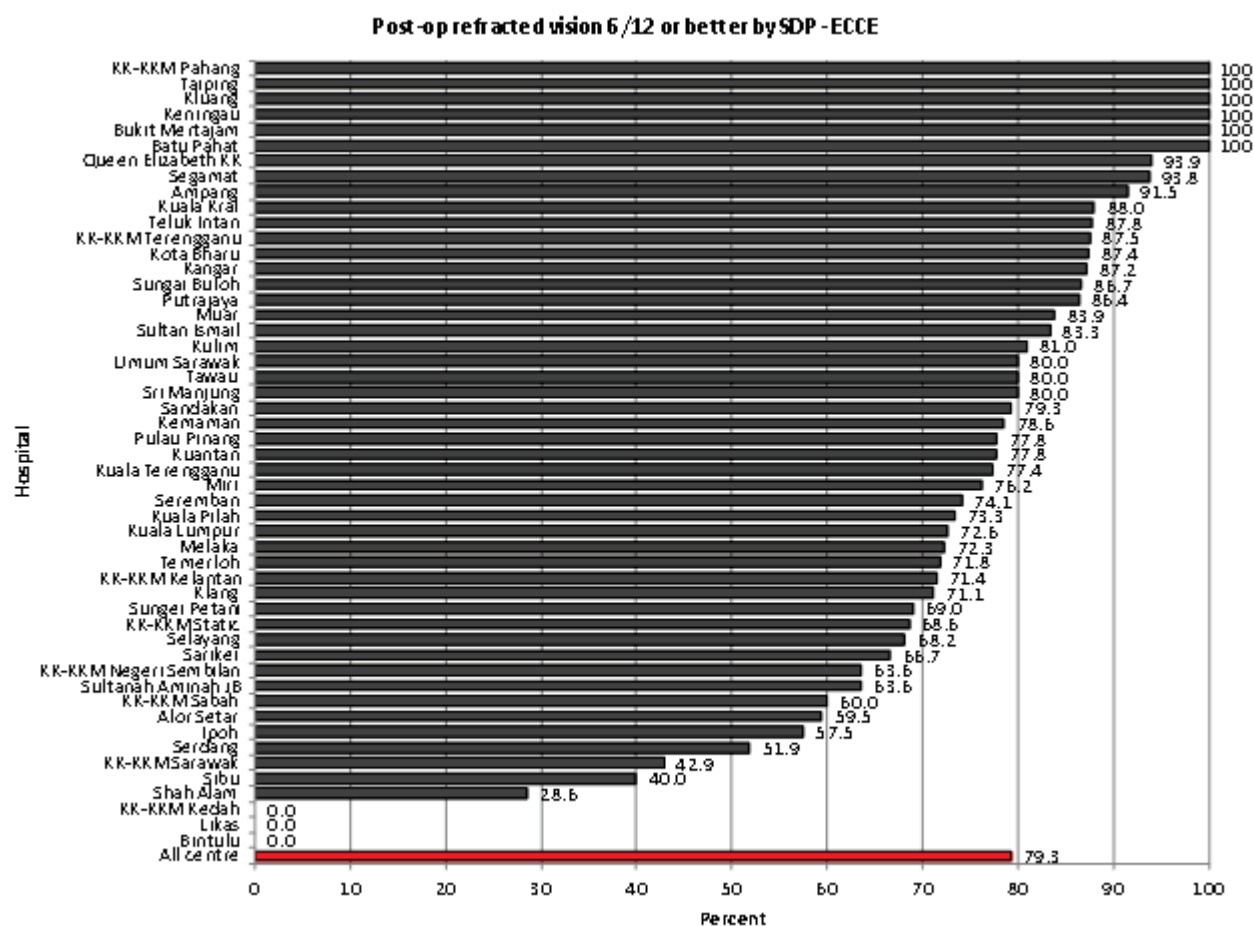


Figure 1.5.6-11: Post-operative Best Corrected Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidity by SDP (ECCE), CSR 2018

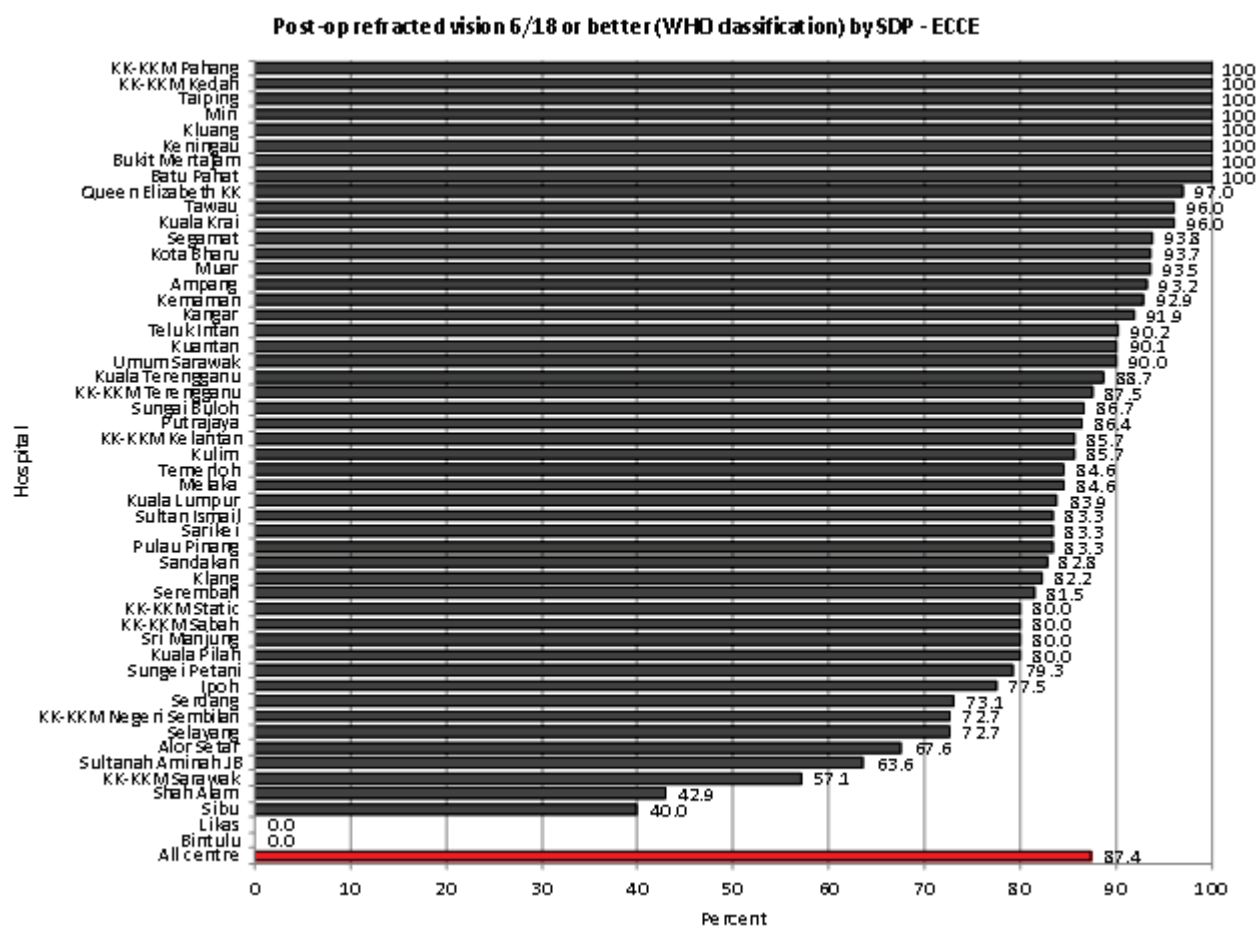


Figure 1.5.6-12: Post-operative Best Corrected Visual Acuity 6/18 or Better (WHO Classification) in Eyes without Ocular Co-morbidity by SDP (ECCE), CSR 2018

1.5.7 Reasons for No Record of Visual Acuity

Table 1.5.7-1: Reasons for No Records of Visual Acuity, CSR 2009–2018

Reasons	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All cases	1805	100.0	1659	100.0	2036	100.0	2022	100.0	2333	100.0	2247	100.0	2984	100.0	2468	100.0	3711	100.0	2523	100.0
Loss to follow-up	1261	69.9	1078	65.0	1362	66.9	1451	71.8	1697	72.7	1698	75.6	2024	67.8	1644	66.6	3214	86.6	2011	79.7
Discharged by doctor	44	2.4	38	2.3	32	1.6	22	1.1	36	1.5	21	0.9	32	1.1	37	1.5	17	0.5	16	0.6
Unable to take vision	30	1.7	33	2.0	27	1.3	33	1.6	26	1.1	15	0.7	24	0.8	14	0.6	15	0.4	18	0.7
Others	222	12.3	210	12.7	186	9.1	281	13.9	260	11.1	238	10.6	301	10.1	275	11.1	217	5.8	302	12.0

Number and percentage (%) are based on available information.

1.5.8 Factors Contributing to Post-operative Refracted Visual Acuity of Worse than 6/12

Table 1.5.8-1: Factors Contributing to Post-operative Best Corrected Visual Acuity of Worse than 6/12 (All Eyes), CSR 2009–2018

Factors	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
N (total no. of post-op refracted vision worse than 6/12)	2973		3397		3597		3694		3948		4261		4524		5199		5651		6463	
Preexisting ocular co-morbidity	1016	34.2	1364	40.2	1412	39.3	1544	41.8	1571	39.8	1715	40.2	1942	42.9	2163	41.6	2059	36.4	2185	33.8
High astigmatism	395	13.3	378	11.1	397	11.0	438	11.9	435	11.0	364	8.5	366	8.1	360	6.9	386	6.8	367	5.7
Posterior capsular opacity	136	4.6	112	3.3	111	3.1	114	3.1	91	2.3	94	2.2	107	2.4	88	1.7	105	1.9	95	1.5
Cystoid macular oedema	82	2.8	94	2.8	96	2.7	88	2.4	80	2.0	110	2.6	84	1.9	97	1.9	127	2.2	145	2.2
Endophthalmitis	6	0.2	5	0.1	2	0.1	4	0.1	2	0.1	10	0.2	8	0.2	5	0.1	7	0.1	3	0.0
Corneal decompensation	61	2.1	33	1.0	36	1.0	42	1.1	50	1.3	84	2.0	125	2.8	82	1.6	50	0.9	31	0.5
Decentered IOL	5	0.2	5	0.1	8	0.2	9	0.2	15	0.4	7	0.2	17	0.4	11	0.2	10	0.2	11	0.2
Retinal detachment	56	1.9	44	1.3	35	1.0	69	1.9	29	0.7	36	0.8	23	0.5	12	0.2	30	0.5	33	0.5
Others	794	26.7	857	25.2	927	25.8	1072	29.0	1111	28.1	1098	25.8	1083	23.9	987	19.0	1395	24.7	1474	22.8
Using WHO Classification																				
N (total no. of post-op refracted vision worse than 6/18)	1923		2266		2379		2367		2567		2786		2897		3356		3650		4211	
Preexisting ocular co-morbidity	750	39.0	1028	45.4	1062	44.6	1077	45.5	1113	43.4	1242	44.6	1353	46.7	1575	46.9	1469	40.2	1574	37.4
High astigmatism	212	11.0	202	8.9	195	8.2	242	10.2	243	9.5	215	7.7	195	6.7	207	6.2	203	5.6	203	4.8
Posterior capsular opacity	83	4.3	65	2.9	70	2.9	68	2.9	46	1.8	43	1.5	63	2.2	44	1.3	61	1.7	57	1.4
Cystoid macular oedema	59	3.1	55	2.4	65	2.7	60	2.5	43	1.7	75	2.7	53	1.8	59	1.8	73	2.0	85	2.0
Endophthalmitis	4	0.2	3	0.1	2	0.1	4	0.2	2	0.1	8	0.3	8	0.3	5	0.1	5	0.1	2	0.0
Corneal decompensation	45	2.3	26	1.1	29	1.2	32	1.4	42	1.6	54	1.9	89	3.1	52	1.5	39	1.1	20	0.5
Decentered IOL	4	0.2	3	0.1	4	0.2	6	0.3	12	0.5	5	0.2	11	0.4	8	0.2	7	0.2	8	0.2
Retinal detachment	49	2.5	41	1.8	34	1.4	63	2.7	25	1.0	27	1.0	18	0.6	11	0.3	28	0.8	29	0.7
Others	530	27.6	589	26.0	636	26.7	690	29.2	757	29.5	719	25.8	711	24.5	619	18.4	943	25.8	993	23.6

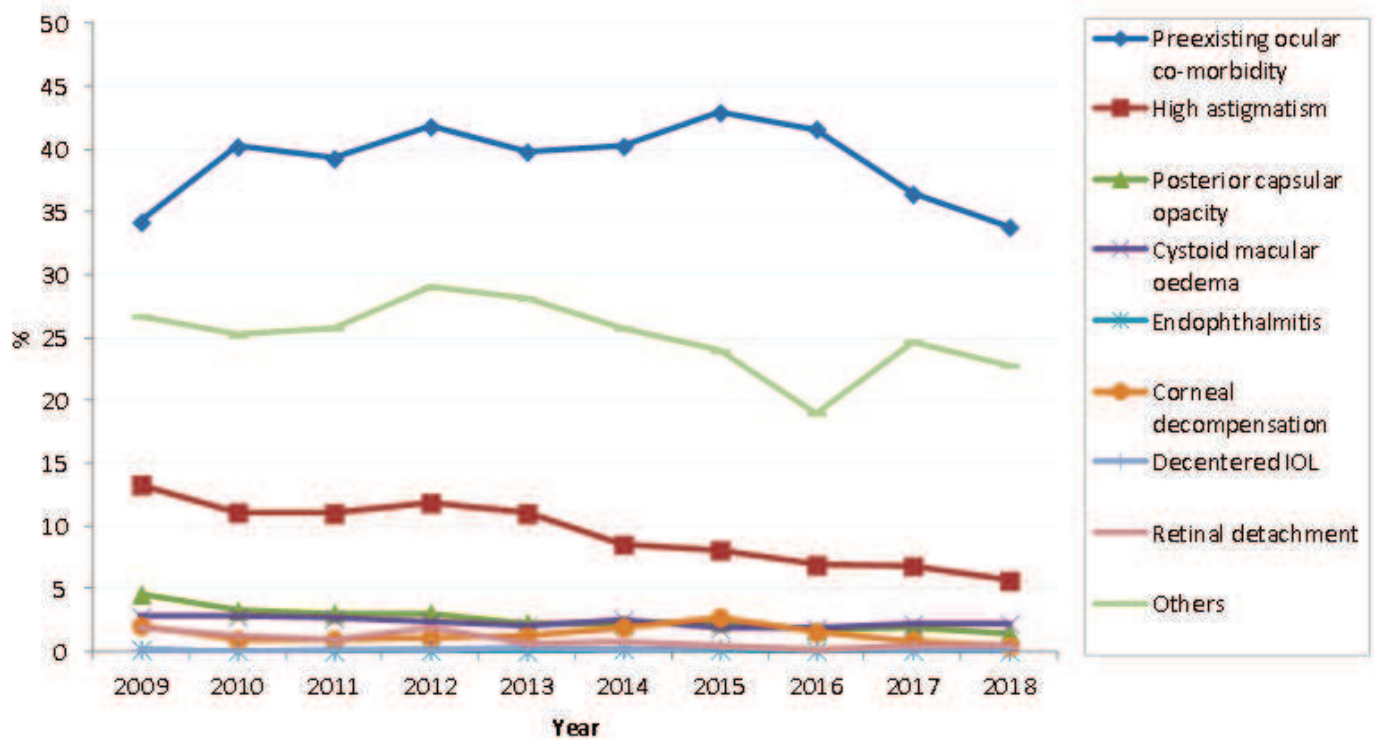


Figure 1.5.8-1: Factors Contributing to Post-operative Best Corrected Visual Acuity worse than 6/12 (All Eyes), CSR 2009–2018

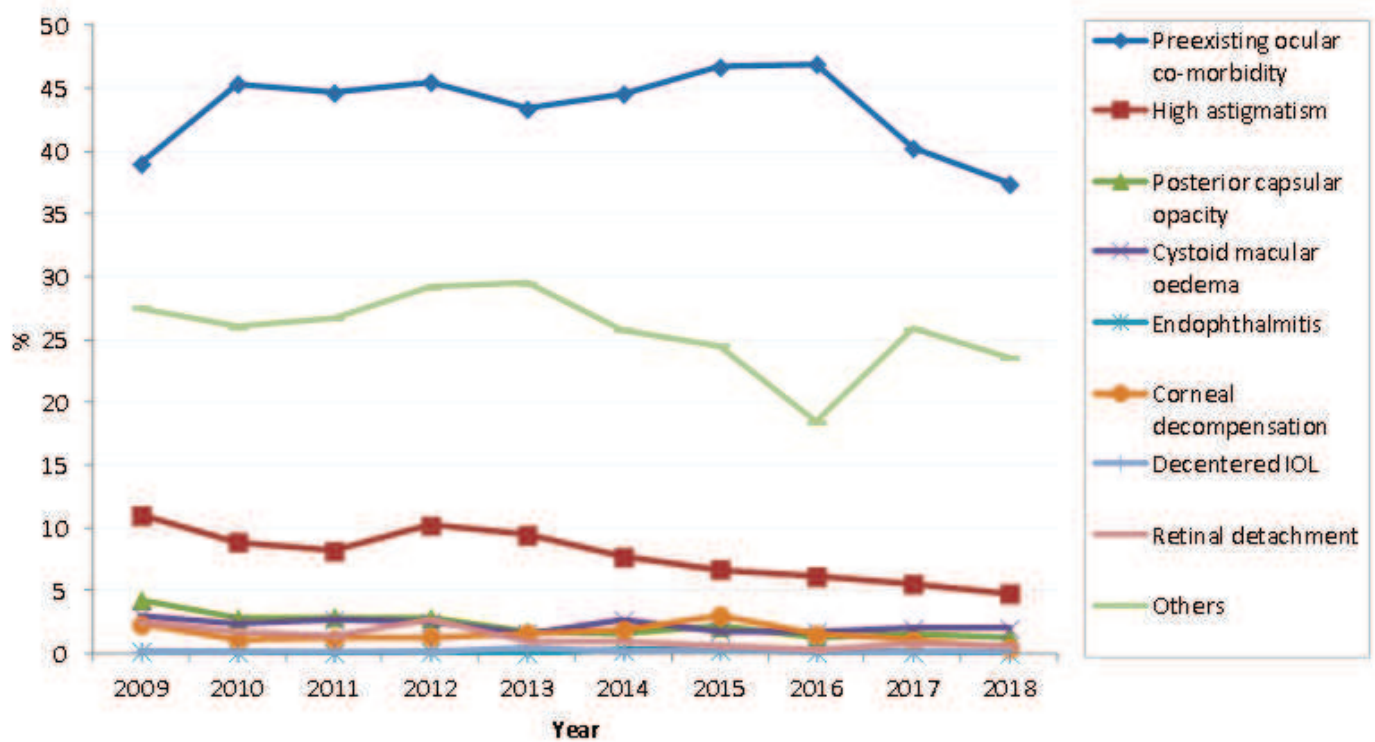


Figure 1.5.8-2: Factors Contributing to Post-operative Best Corrected Visual Acuity worse than 6/18 (All Eyes), CSR 2009–2018

Table 1.5.8-2: Factors Contributing to Post-operative Best Corrected Visual Acuity of Worse than 6/12 (Eyes without Ocular Co-morbidity), CSR 2009–2018

Factors (not detected pre-operatively)	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	% (*descending)
N (worse than 6/12)	1078		1056		1108		1134		1200		1266		1321		1334		1586		2061	
High astigmatism	178	16.5	180	17.0	175	15.8	193	17.0	167	13.9	162	12.8	178	13.5	182	13.6	191	12.0	194	9.4
Preexisting ocular co-morbidity	121	11.2	92	8.7	66	6.0	98	8.6	70	5.8	112	8.8	96	7.3	79	5.9	75	4.7	87	4.2
Cystoid macular oedema	32	3.0	42	4.0	38	3.4	38	3.4	29	2.4	45	3.6	29	2.2	41	3.1	66	4.2	60	2.9
Posterior capsular opacity	87	8.1	65	6.2	50	4.5	51	4.5	39	3.3	39	3.1	45	3.4	40	3.0	53	3.3	46	2.2
Corneal decompensation	36	3.3	21	2.0	18	1.6	18	1.6	18	1.5	36	2.8	75	5.7	48	3.6	29	1.8	13	0.6
Decentered IOL	1	0.1	0	0.0	4	0.4	5	0.4	6	0.5	1	0.1	5	0.4	5	0.4	6	0.4	5	0.2
Retinal detachment	11	1.0	6	0.6	1	0.1	6	0.5	3	0.3	3	0.2	4	0.3	2	0.1	6	0.4	5	0.2
Endophthalmitis	4	0.4	2	0.2	1	0.1	2	0.2	0	0.0	4	0.3	3	0.2	1	0.1	5	0.3	2	0.1
Others	368	34.1	389	36.8	453	40.9	506	44.6	521	43.4	501	39.6	533	40.3	429	32.2	568	35.8	688	33.4
Using WHO classification:																				
N (worse than 6/18)	599		611		628		633		692		718		743		689		828		1153	
High astigmatism	83	13.9	98	16.0	86	13.7	98	15.5	87	12.6	86	12.0	96	12.9	97	14.1	84	10.1	99	8.6
Preexisting ocular co-morbidity	84	14.0	64	10.5	41	6.5	74	11.7	55	7.9	78	10.9	67	9.0	42	6.1	39	4.7	65	5.6
Cystoid macular oedema	19	3.2	24	3.9	21	3.3	27	4.3	14	2.0	31	4.3	19	2.6	19	2.8	32	3.9	34	2.9
Posterior capsular opacity	54	9.0	39	6.4	32	5.1	23	3.6	20	2.9	15	2.1	23	3.1	16	2.3	27	3.3	27	2.3
Corneal decompensation	24	4.0	18	2.9	13	2.1	13	2.1	14	2.0	19	2.6	51	6.9	29	4.2	21	2.5	8	0.7
Retinal detachment	8	1.3	6	1.0	1	0.2	4	0.6	2	0.3	3	0.4	4	0.5	2	0.3	5	0.6	5	0.4
Decentered IOL	1	0.2	0	0.0	1	0.2	3	0.5	4	0.6	1	0.1	4	0.5	3	0.4	4	0.5	3	0.3
Endophthalmitis	3	0.5	1	0.2	1	0.2	2	0.3	0	0.0	2	0.3	3	0.4	1	0.1	4	0.5	1	0.1
Others	226	37.7	257	42.1	293	46.7	300	47.4	316	45.7	308	42.9	320	43.1	245	35.6	345	41.7	428	37.1

1.5.9 Actual or Residual Refractive Power (Spherical Equivalent)

Targeted refractive power is the refractive power aimed for a patient by the surgeon, while the actual or residual refractive power or spherical equivalent (SE) is the post-operative refraction result of the same eye. Myopic shift is the shift of the refractive status (actual refraction) post-operatively towards a more negative value as compared to the targeted refraction pre-operatively. It could be the result from a more anteriorly placed IOL in the bag or surgically induced astigmatism. It could also be due to the indentation of eyeball during biometry, resulting in shorter axial length.

Table 1.5.9-1: Distribution of Target and Actual Refractive Power in ECCE and Phaco, CSR 2009–2018

Year	Target Refraction									
	All Patient									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
N	20279	24528	25887	26061	28693	32260	36706	43840	48153	50278
Mean	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5
SD	+0.4	+0.4	+0.3	+0.4	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3
Median	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5
Min	-9.9	-9.1	-9.1	-8.0	-8.5	-8.1	-9.9	-9.9	-9.9	-9.5
Max	+5.9	+6.0	+4.8	+9.0	+9.0	+6.0	+6.1	+6.2	+8.6	+6.2

Year	Actual Refraction									
	ECCE									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
N	4014	3853	3714	3153	2809	2429	2477	2355	2624	2420
Mean	-1.1	-1.0	-1.0	-0.9	-0.9	-0.9	-0.8	-0.8	-0.8	-0.7
SD	+1.3	+1.4	+1.3	+1.4	+1.4	+1.2	+1.3	+1.4	+1.6	+1.6
Median	-1.0	-1.0	-1.0	-1.0	-0.9	-0.9	-0.9	-0.9	-0.9	-0.8
Min	-10.0	-9.2	-7.3	-8.5	-10.0	-6.7	-8.3	-8.3	-8.9	-7.5
Max	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0

Note: Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis

Year	Actual Refraction									
	Phaco									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
N	12891	15485	17197	17931	22173	25325	27467	31587	36418	42304
Mean	-0.8	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5
SD	+1.0	+0.9	+0.9	+0.9	+0.8	+0.8	+0.8	+0.8	+0.8	+0.8
Median	-0.7	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Min	-9.0	-10.0	-10.0	-9.9	-9.7	-10.0	-9.8	-9.0	-9.5	-10.0
Max	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0

Note: Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis

Year	Actual - Target Refraction									
	All Patient									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
N	14670	17697	18813	17964	20457	23180	25888	30744	35424	41210
Mean	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1
SD	+1.1	+1.1	+1.0	+1.0	+0.9	+0.9	+0.9	+0.9	+0.8	+0.9
Median	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
Min	-8.8	-9.8	-9.2	-9.9	-9.7	-9.4	-8.0	-8.6	-9.4	-9.5
Max	+10.7	+10.7	+10.7	+10.6	+10.7	+10.6	+11.3	+10.6	+10.8	+10.7

Note: Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis.

Number and percentage (%) are based on available information.

Table 1.5.9-2: Distribution of Targeted and Actual Refractive Power in ECCE and Phaco by Diopter, CSR 2009–2018

Year	Target Refraction																			
	All Patients																			
	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Dioptre (D)	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
-10.0-<(-9.5)	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	2	0.0	1	0.0	0	0.0
-9.5-<(-9.0)	1	0.0	2	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0	2	0.0	2	0.0	2	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0	2	0.0	0	0.0	1	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	2	0.0	1	0.0	1	0.0	1	0.0
-8.0-<(-7.5)	1	0.0	1	0.0	0	0.0	1	0.0	0	0.0	1	0.0	1	0.0	0	0.0	1	0.0	0	0.0
-7.5-<(-7.0)	1	0.0	1	0.0	0	0.0	2	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0	3	0.0
-7.0-<(-6.5)	0	0.0	1	0.0	1	0.0	1	0.0	1	0.0	1	0.0	0	0.0	1	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	7	0.0	4	0.0	10	0.0	10	0.0	9	0.0	10	0.0	4	0.0	7	0.0	11	0.0	6	0.0
-5.0-<(-4.5)	7	0.0	3	0.0	3	0.0	5	0.0	5	0.0	1	0.0	4	0.0	4	0.0	9	0.0	5	0.0
-4.5-<(-4.0)	5	0.0	10	0.0	3	0.0	5	0.0	3	0.0	4	0.0	3	0.0	6	0.0	7	0.0	3	0.0
-4.0-<(-3.5)	11	0.1	5	0.0	11	0.0	5	0.0	1	0.0	5	0.0	5	0.0	3	0.0	3	0.0	5	0.0
-3.5-<(-3.0)	11	0.1	15	0.1	12	0.0	6	0.0	8	0.0	5	0.0	10	0.0	5	0.0	8	0.0	6	0.0
-3.0-<(-2.5)	18	0.1	29	0.1	15	0.1	15	0.1	15	0.1	9	0.0	13	0.0	20	0.0	17	0.0	23	0.0
-2.5-<(-2.0)	29	0.1	33	0.1	26	0.1	38	0.1	35	0.1	27	0.1	31	0.1	33	0.1	47	0.1	55	0.1
-2.0-<(-1.5)	58	0.3	46	0.2	54	0.2	67	0.3	55	0.2	52	0.2	61	0.2	65	0.1	126	0.3	117	0.2
-1.5-<(-1.0)	260	1.3	292	1.2	201	0.8	226	0.9	174	0.6	209	0.6	236	0.6	237	0.5	418	0.9	417	0.8
-1.0-<(-0.5)	7972	39.3	7590	30.9	7507	29.0	7190	27.6	6241	21.8	6840	21.2	8908	24.3	12309	28.1	15800	32.8	17521	34.8
-0.5-<0.0	10604	52.3	15220	62.1	16915	65.3	17421	66.8	21135	73.7	24210	75.0	26887	73.2	30773	70.2	31269	64.9	31623	62.9
0.0-<0.5	977	4.8	921	3.8	849	3.3	631	2.4	705	2.5	793	2.5	463	1.3	309	0.7	280	0.6	332	0.7
0.5-<1.0	182	0.9	238	1.0	234	0.9	216	0.8	187	0.7	73	0.2	36	0.1	32	0.1	53	0.1	75	0.1
1.0-<1.5	17	0.1	23	0.1	20	0.1	32	0.1	8	0.0	4	0.0	13	0.0	15	0.0	14	0.0	12	0.0
1.5-<2.0	22	0.1	19	0.1	9	0.0	52	0.2	28	0.1	5	0.0	8	0.0	3	0.0	16	0.0	12	0.0
2.0-<2.5	85	0.4	69	0.3	12	0.0	123	0.5	69	0.2	6	0.0	3	0.0	3	0.0	33	0.1	14	0.0
2.5-<3.0	4	0.0	3	0.0	2	0.0	10	0.0	11	0.0	2	0.0	2	0.0	0	0.0	10	0.0	15	0.0
3.0-<3.5	2	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	1	0.0	0	0.0	10	0.0	7	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	4	0.0	3	0.0	4	0.0	10	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	2	0.0	2	0.0	3	0.0	4	0.0
4.5-<5.0	1	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0
5.0-<5.5	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.0	0	0.0	1	0.0	2	0.0
5.5-<6.0	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0	3	0.0
6.0-<6.5	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0	2	0.0	1	0.0	3	0.0	3	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.0-<8.5	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
9.0-<9.5	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Number and percentage (%) are based on available information.

Year	Actual Refraction - ECCE																			
	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Dioptre (D)	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
-10.0-<(-9.5)	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	1	0.0	0	0.0	2	0.1	0	0.0	0	0.0	1	0.0	3	0.1	0	0.0	0	0.0
-8.0-<(-7.5)	3	0.1	1	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0	0	0.0	1	0.0	0	0.0
-7.5-<(-7.0)	1	0.0	0	0.0	1	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	0.0
-7.0-<(-6.5)	1	0.0	1	0.0	3	0.1	5	0.2	0	0.0	1	0.0	1	0.0	0	0.0	1	0.0	0	0.0
-6.5-<(-5.0)	10	0.2	10	0.3	16	0.4	4	0.1	2	0.1	6	0.2	7	0.3	3	0.1	12	0.5	3	0.1
-5.0-<(-4.5)	12	0.3	15	0.4	8	0.2	11	0.3	8	0.3	4	0.2	4	0.2	4	0.2	6	0.2	2	0.1
-4.5-<(-4.0)	16	0.4	16	0.4	20	0.5	20	0.6	5	0.2	8	0.3	1	0.0	9	0.4	10	0.4	9	0.4
-4.0-<(-3.5)	52	1.3	42	1.1	30	0.8	26	0.8	27	1.0	21	0.9	9	0.4	14	0.6	11	0.4	7	0.3
-3.5-<(-3.0)	75	1.9	71	1.8	63	1.7	51	1.6	45	1.6	29	1.2	39	1.6	20	0.8	39	1.5	34	1.4
-3.0-<(-2.5)	184	4.6	137	3.6	131	3.5	128	4.1	93	3.3	75	3.1	64	2.6	74	3.1	77	2.9	57	2.4
-2.5-<(-2.0)	323	8.0	256	6.6	236	6.4	204	6.5	164	5.8	152	6.3	136	5.5	132	5.6	143	5.4	149	6.2
-2.0-<(-1.5)	515	12.8	464	12.0	464	12.5	377	12.0	303	10.8	260	10.7	257	10.4	256	10.9	271	10.3	259	10.7
-1.5-<(-1.0)	723	18.0	721	18.7	665	17.9	530	16.8	492	17.5	424	17.5	445	18.0	420	17.8	478	18.2	401	16.6
-1.0-<(-0.5)	771	19.2	817	21.2	776	20.9	667	21.2	636	22.6	547	22.5	525	21.2	525	22.3	526	20.0	500	20.7
-0.5-<0.0	657	16.4	616	16.0	640	17.2	544	17.3	485	17.3	443	18.2	499	20.1	425	18.0	482	18.4	400	16.5
0.0-<0.5	391	9.7	375	9.7	372	10.0	297	9.4	296	10.5	264	10.9	268	10.8	275	11.7	332	12.7	343	14.2
0.5-<1.0	147	3.7	157	4.1	146	3.9	144	4.6	136	4.8	110	4.5	114	4.6	99	4.2	101	3.8	104	4.3
1.0-<1.5	54	1.3	77	2.0	66	1.8	65	2.1	46	1.6	39	1.6	41	1.7	39	1.7	51	1.9	49	2.0
1.5-<2.0	31	0.8	26	0.7	30	0.8	33	1.0	21	0.7	20	0.8	25	1.0	16	0.7	14	0.5	30	1.2
2.0-<2.5	18	0.4	13	0.3	17	0.5	9	0.3	10	0.4	9	0.4	12	0.5	11	0.5	12	0.5	20	0.8
2.5-<3.0	5	0.1	6	0.2	3	0.1	6	0.2	4	0.1	2	0.1	6	0.2	4	0.2	9	0.3	4	0.2
3.0-<3.5	1	0.0	5	0.1	4	0.1	4	0.1	3	0.1	2	0.1	1	0.0	2	0.1	2	0.1	4	0.2
3.5-<4.0	2	0.0	1	0.0	0	0.0	3	0.1	2	0.1	2	0.1	2	0.1	2	0.1	2	0.1	3	0.1
4.0-<4.5	0	0.0	2	0.1	0	0.0	3	0.1	3	0.1	2	0.1	1	0.0	1	0.0	0	0.0	1	0.0
4.5-<5.0	1	0.0	1	0.0	1	0.0	2	0.1	0	0.0	0	0.0	2	0.1	0	0.0	1	0.0	0	0.0
5.0-<5.5	1	0.0	1	0.0	1	0.0	0	0.0	2	0.1	2	0.1	2	0.1	0	0.0	2	0.1	0	0.0
5.5-<6.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	0.0	0	0.0	0	0.0	2	0.1	2	0.1
6.0-<6.5	0	0.0	0	0.0	2	0.1	1	0.0	2	0.1	0	0.0	0	0.0	0	0.0	1	0.0	2	0.1
6.5-<7.0	0	0.0	2	0.1	2	0.1	1	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	1	0.0
7.0-<7.5	1	0.0	0	0.0	0	0.0	3	0.1	0	0.0	0	0.0	1	0.0	1	0.0	2	0.1	1	0.0
7.5-<8.0	2	0.0	1	0.0	1	0.0	1	0.0	1	0.0	0	0.0	1	0.0	2	0.1	2	0.1	2	0.1
8.0-<8.5	1	0.0	1	0.0	2	0.1	1	0.0	1	0.0	0	0.0	1	0.0	1	0.0	9	0.3	4	0.2
8.5-<9.0	0	0.0	1	0.0	3	0.1	0	0.0	1	0.0	2	0.1	5	0.2	2	0.1	2	0.1	5	0.2
9.0-<9.5	3	0.1	4	0.1	5	0.1	3	0.1	3	0.1	2	0.1	0	0.0	3	0.1	4	0.2	7	0.3
9.5-<10.0	10	0.2	11	0.3	6	0.2	7	0.2	13	0.5	2	0.1	5	0.2	11	0.5	16	0.6	16	0.7

Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis.

Number and percentage (%) are based on available information.

Years	Actual Refraction - Phaco																			
	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Dioptre (D)	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
-10.0-<(-9.5)	0	0.0	2	0.0	1	0.0	1	0.0	1	0.0	4	0.0	1	0.0	0	0.0	0	0.0	1	0.0
-9.5-<(-9.0)	0	0.0	1	0.0	2	0.0	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0
-9.0-<(-8.5)	2	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	2	0.0	3	0.0	4	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	1	0.0	1	0.0	2	0.0	2	0.0	1	0.0	0	0.0	1	0.0	4	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	1	0.0	2	0.0	4	0.0	1	0.0	2	0.0	3	0.0	1	0.0	2	0.0
-7.5-<(-7.0)	0	0.0	3	0.0	1	0.0	2	0.0	1	0.0	3	0.0	1	0.0	4	0.0	4	0.0	2	0.0
-7.0-<(-6.5)	3	0.0	3	0.0	2	0.0	2	0.0	2	0.0	2	0.0	1	0.0	3	0.0	3	0.0	4	0.0
-6.5-<(-6.0)	24	0.2	22	0.1	11	0.1	21	0.1	27	0.1	21	0.1	17	0.1	16	0.1	20	0.1	21	0.0
-6.0-<(-5.5)	14	0.1	13	0.1	11	0.1	13	0.1	11	0.0	8	0.0	6	0.0	9	0.0	19	0.1	15	0.0
-5.5-<(-5.0)	14	0.1	17	0.1	19	0.1	21	0.1	15	0.1	16	0.1	18	0.1	13	0.0	18	0.0	15	0.0
-5.0-<(-4.5)	44	0.3	41	0.3	35	0.2	37	0.2	31	0.1	35	0.1	29	0.1	37	0.1	35	0.1	28	0.1
-4.5-<(-4.0)	80	0.6	81	0.5	74	0.4	74	0.4	69	0.3	74	0.3	50	0.2	69	0.2	57	0.2	68	0.2
-4.0-<(-3.5)	212	1.6	190	1.2	163	0.9	164	0.9	169	0.8	172	0.7	160	0.6	149	0.5	173	0.5	160	0.4
-3.5-<(-3.0)	448	3.5	436	2.8	450	2.6	451	2.5	383	1.7	451	1.8	372	1.4	403	1.3	438	1.2	481	1.1
-3.0-<(-2.5)	1067	8.3	1067	6.9	1138	6.6	1100	6.1	1079	4.9	1187	4.7	1211	4.4	1271	4.0	1358	3.7	1484	3.5
-2.5-<(-2.0)	2115	16.4	2390	15.4	2701	15.7	2700	15.1	2993	13.5	3280	13.0	3474	12.6	3801	12.0	4227	11.6	4823	11.4
-2.0-<(-1.5)	3232	25.1	3870	25.0	4461	25.9	4716	26.3	5735	25.9	6776	26.8	7640	27.8	8683	27.5	9727	26.7	11208	26.5
-1.5-<(-1.0)	3143	24.4	3941	25.5	4570	26.6	4753	26.5	6610	29.8	7865	31.1	8768	31.9	10415	33.0	11889	32.6	13649	32.3
-1.0-<(-0.5)	1680	13.0	2177	14.1	2350	13.7	2562	14.3	3403	15.3	3761	14.9	3988	14.5	4698	14.9	6124	16.8	7463	17.6
-0.5-<0.0	513	4.0	772	5.0	762	4.4	844	4.7	1081	4.9	1130	4.5	1158	4.2	1364	4.3	1553	4.3	1984	4.7
0.0-<0.5	168	1.3	265	1.7	249	1.4	277	1.5	317	1.4	320	1.3	338	1.2	368	1.2	474	1.3	500	1.2
0.5-<1.0	66	0.5	99	0.6	90	0.5	85	0.5	123	0.6	98	0.4	97	0.4	118	0.4	146	0.4	176	0.4
1.0-<1.5	21	0.2	38	0.2	42	0.2	44	0.2	44	0.2	47	0.2	40	0.1	63	0.2	60	0.2	63	0.1
1.5-<2.0	10	0.1	14	0.1	17	0.1	17	0.1	18	0.1	19	0.1	18	0.1	30	0.1	23	0.1	39	0.1
2.0-<2.5	8	0.1	10	0.1	13	0.1	11	0.1	11	0.0	9	0.0	17	0.1	10	0.0	12	0.0	19	0.0
2.5-<3.0	4	0.0	5	0.0	4	0.0	7	0.0	4	0.0	8	0.0	12	0.0	7	0.0	7	0.0	15	0.0
3.0-<3.5	3	0.0	5	0.0	2	0.0	6	0.0	11	0.0	7	0.0	10	0.0	12	0.0	12	0.0	7	0.0
3.5-<4.0	2	0.0	2	0.0	4	0.0	1	0.0	6	0.0	3	0.0	6	0.0	7	0.0	4	0.0	12	0.0
4.0-<4.5	2	0.0	4	0.0	4	0.0	1	0.0	3	0.0	2	0.0	9	0.0	2	0.0	4	0.0	5	0.0
4.5-<5.0	1	0.0	1	0.0	2	0.0	1	0.0	1	0.0	2	0.0	1	0.0	3	0.0	5	0.0	5	0.0
5.0-<5.5	2	0.0	3	0.0	1	0.0	2	0.0	1	0.0	2	0.0	3	0.0	3	0.0	2	0.0	6	0.0
5.5-<6.0	2	0.0	2	0.0	1	0.0	1	0.0	4	0.0	2	0.0	0	0.0	1	0.0	3	0.0	1	0.0
6.0-<6.5	0	0.0	2	0.0	2	0.0	2	0.0	4	0.0	0	0.0	0	0.0	2	0.0	1	0.0	1	0.0
6.5-<7.0	0	0.0	0	0.0	1	0.0	2	0.0	3	0.0	0	0.0	5	0.0	1	0.0	2	0.0	2	0.0
7.0-<7.5	1	0.0	1	0.0	0	0.0	0	0.0	2	0.0	3	0.0	2	0.0	4	0.0	1	0.0	5	0.0
7.5-<8.0	2	0.0	1	0.0	1	0.0	1	0.0	1	0.0	4	0.0	2	0.0	3	0.0	2	0.0	8	0.0
8.0-<8.5	2	0.0	0	0.0	6	0.0	1	0.0	2	0.0	5	0.0	3	0.0	5	0.0	2	0.0	5	0.0
8.5-<9.0	6	0.0	7	0.0	5	0.0	6	0.0	1	0.0	5	0.0	7	0.0	8	0.0	7	0.0	18	0.0
9.0-<9.5																				
9.5-<10.0																				

Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis.

Number and percentage (%) are based on available information.

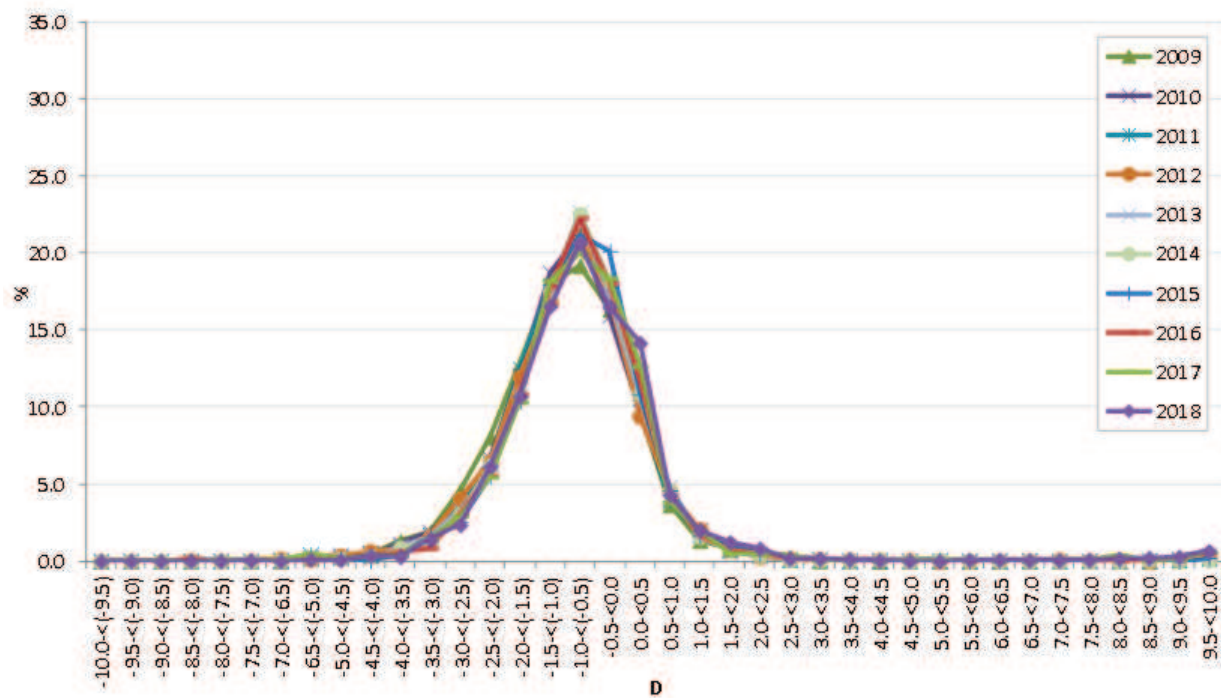


Figure 1.5.9-1: Percentage Distribution of Actual Refractive Power (ECCE), CSR 2009–2018

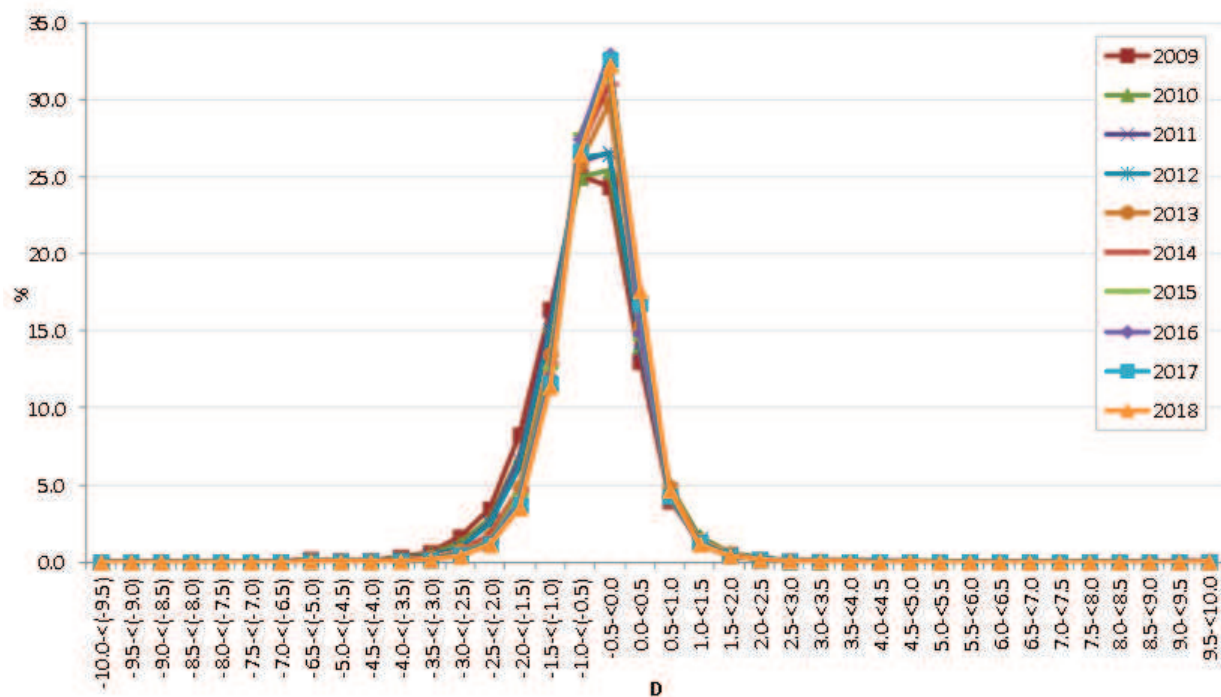


Figure 1.5.9-2: Percentage Distribution of Actual Refractive Power (Phaco), CSR 2009–2018

Table 1.5.9-3: Difference between Targeted and Actual Refractive Power by Diopter in Phaco, CSR

	Target Refraction - Phaco																			
Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Power (D)	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
N	14976	100	18938	100	20321	100	21328	100	24306	100	28256	100	32235	100	39425	100	44118	100	46418	100
-5.0-<(-4.5)	7	0.0	2	0.0	2	0.0	5	0.0	4	0.0	1	0.0	3	0.0	3	0.0	8	0.0	4	0.0
-4.5-<(-4.0)	5	0.0	9	0.0	2	0.0	4	0.0	3	0.0	4	0.0	3	0.0	2	0.0	7	0.0	3	0.0
-4.0-<(-3.5)	7	0.0	5	0.0	8	0.0	5	0.0	1	0.0	4	0.0	4	0.0	2	0.0	3	0.0	5	0.0
-3.5-<(-3.0)	9	0.1	12	0.1	10	0.0	4	0.0	8	0.0	3	0.0	8	0.0	4	0.0	6	0.0	4	0.0
-3.0-<(-2.5)	14	0.1	23	0.1	12	0.1	13	0.1	14	0.1	8	0.0	12	0.0	14	0.0	14	0.0	21	0.0
-2.5-<(-2.0)	19	0.1	27	0.1	19	0.1	30	0.1	30	0.1	23	0.1	28	0.1	31	0.1	44	0.1	49	0.1
-2.0-<(-1.5)	44	0.3	32	0.2	38	0.2	49	0.2	43	0.2	44	0.2	49	0.2	58	0.1	108	0.2	100	0.2
-1.5-<(-1.0)	184	1.2	195	1.0	158	0.8	164	0.8	149	0.6	180	0.6	206	0.6	211	0.5	371	0.8	368	0.8
-1.0-<(-0.5)	5602	37.4	5672	30.0	5567	27.4	5709	26.8	5031	20.7	5642	20.0	7432	23.1	10663	27.0	14146	32.1	15925	34.3
-0.5-<0.0	8201	54.8	12144	64.1	13864	68.2	14653	68.7	18302	75.3	21641	76.6	24058	74.6	28146	71.4	29075	65.9	29579	63.7
0.0-<0.5	663	4.4	601	3.2	470	2.3	345	1.6	461	1.9	635	2.2	381	1.2	245	0.6	225	0.5	268	0.6
0.5-<1.0	129	0.9	147	0.8	143	0.7	160	0.8	144	0.6	52	0.2	28	0.1	24	0.1	46	0.1	58	0.1
1.0-<1.5	9	0.1	9	0.0	7	0.0	16	0.1	5	0.0	3	0.0	8	0.0	6	0.0	8	0.0	5	0.0
1.5-<2.0	11	0.1	7	0.0	1	0.0	43	0.2	23	0.1	2	0.0	3	0.0	0	0.0	9	0.0	4	0.0
2.0-<2.5	63	0.4	42	0.2	10	0.0	106	0.5	65	0.3	3	0.0	1	0.0	2	0.0	22	0.0	3	0.0
2.5-<3.0	2	0.0	1	0.0	2	0.0	6	0.0	10	0.0	0	0.0	1	0.0	0	0.0	8	0.0	12	0.0
3.0-<3.5	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0

Number and percentage (%) are based on available information.

	Actual Refraction - Phaco																			
Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Power (D)	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
N	12891	100	15485	100	17197	100	17931	100	22173	100	25325	100	27467	100	31587	100	36418	100	42304	100
-5.0-<(-4.5)	14	0.1	13	0.1	11	0.1	13	0.1	11	0.0	8	0.0	6	0.0	9	0.0	19	0.1	15	0.0
-4.5-<(-4.0)	14	0.1	17	0.1	19	0.1	21	0.1	15	0.1	16	0.1	18	0.1	13	0.0	18	0.0	15	0.0
-4.0-<(-3.5)	44	0.3	41	0.3	35	0.2	37	0.2	31	0.1	35	0.1	29	0.1	37	0.1	35	0.1	28	0.1
-3.5-<(-3.0)	80	0.6	81	0.5	74	0.4	74	0.4	69	0.3	74	0.3	50	0.2	69	0.2	57	0.2	68	0.2
-3.0-<(-2.5)	212	1.6	190	1.2	163	0.9	164	0.9	169	0.8	172	0.7	160	0.6	149	0.5	173	0.5	160	0.4
-2.5-<(-2.0)	448	3.5	436	2.8	450	2.6	451	2.5	383	1.7	451	1.8	372	1.4	403	1.3	438	1.2	481	1.1
-2.0-<(-1.5)	1067	8.3	1067	6.9	1138	6.6	1100	6.1	1079	4.9	1187	4.7	1211	4.4	1271	4.0	1358	3.7	1484	3.5
-1.5-<(-1.0)	2115	16.4	2390	15.4	2701	15.7	2700	15.1	2993	13.5	3280	13.0	3474	12.6	3801	12.0	4227	11.6	4823	11.4
-1.0-<(-0.5)	3232	25.1	3870	25.0	4461	25.9	4716	26.3	5735	25.9	6776	26.8	7640	27.8	8683	27.5	9727	26.7	11208	26.5
-0.5-<0.0	3143	24.4	3941	25.5	4570	26.6	4753	26.5	6610	29.8	7865	31.1	8768	31.9	10415	33.0	11889	32.6	13649	32.3
0.0-<0.5	1680	13.0	2177	14.1	2350	13.7	2562	14.3	3403	15.3	3761	14.9	3988	14.5	4698	14.9	6124	16.8	7463	17.6
0.5-<1.0	513	4.0	772	5.0	762	4.4	844	4.7	1081	4.9	1130	4.5	1158	4.2	1364	4.3	1553	4.3	1984	4.7
1.0-<1.5	168	1.3	265	1.7	249	1.4	277	1.5	317	1.4	320	1.3	338	1.2	368	1.2	474	1.3	500	1.2
1.5-<2.0	66	0.5	99	0.6	90	0.5	85	0.5	123	0.6	98	0.4	97	0.4	118	0.4	146	0.4	176	0.4
2.0-<2.5	21	0.2	38	0.2	42	0.2	44	0.2	44	0.2	47	0.2	40	0.1	63	0.2	60	0.2	63	0.1
2.5-<3.0	10	0.1	14	0.1	17	0.1	17	0.1	18	0.1	19	0.1	18	0.1	30	0.1	23	0.1	39	0.1

3.0-<3.5	8	0.1	10	0.1	13	0.1	11	0.1	11	0.0	9	0.0	17	0.1	10	0.0	12	0.0	19	0.0
3.5-<4.0	4	0.0	5	0.0	4	0.0	7	0.0	4	0.0	8	0.0	12	0.0	7	0.0	7	0.0	15	0.0
4.0-<4.5	3	0.0	5	0.0	2	0.0	6	0.0	11	0.0	7	0.0	10	0.0	12	0.0	12	0.0	7	0.0
4.5-<5.0	2	0.0	2	0.0	4	0.0	1	0.0	6	0.0	3	0.0	6	0.0	7	0.0	4	0.0	12	0.0
5.0-<5.5	2	0.0	4	0.0	4	0.0	1	0.0	3	0.0	2	0.0	9	0.0	2	0.0	4	0.0	5	0.0

Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis.

Number and percentage (%) are based on available information.

	Difference between Target and Actual Refraction - Phaco																			
Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Power (D)	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
N	10842	100	13653	100	14906	100	14738	100	17438	100	20484	100	22948	100	27791	100	32626	100	38368	100
-5.0-<(-4.5)	5	0.0	5	0.0	7	0.0	8	0.1	8	0.0	5	0.0	5	0.0	4	0.0	8	0.0	9	0.0
-4.5-<(-4.0)	8	0.1	7	0.1	10	0.1	9	0.1	12	0.1	10	0.0	6	0.0	5	0.0	11	0.0	9	0.0
-4.0-<(-3.5)	24	0.2	28	0.2	14	0.1	18	0.1	10	0.1	16	0.1	15	0.1	16	0.1	20	0.1	16	0.0
-3.5-<(-3.0)	52	0.5	37	0.3	32	0.2	38	0.3	37	0.2	35	0.2	24	0.1	37	0.1	36	0.1	26	0.1
-3.0-<(-2.5)	95	0.9	110	0.8	81	0.5	100	0.7	92	0.5	84	0.4	66	0.3	69	0.2	76	0.2	76	0.2
-2.5-<(-2.0)	243	2.2	198	1.5	192	1.3	204	1.4	184	1.1	223	1.1	167	0.7	163	0.6	182	0.6	205	0.5
-2.0-<(-1.5)	475	4.4	520	3.8	532	3.6	533	3.6	473	2.7	568	2.8	472	2.1	516	1.9	515	1.6	523	1.4
-1.5-<(-1.0)	1149	10.6	1294	9.5	1391	9.3	1300	8.8	1366	7.8	1534	7.5	1511	6.6	1541	5.5	1705	5.2	1914	5.0
-1.0-<(-0.5)	2151	19.8	2685	19.7	3081	20.7	3005	20.4	3424	19.6	3847	18.8	4269	18.6	4768	17.2	4950	15.2	5733	14.9
-0.5-<0.0	2877	26.5	3712	27.2	4411	29.6	4269	29.0	5382	30.9	6538	31.9	7435	32.4	8948	32.2	10297	31.6	11898	31.0
0.0-<0.5	2246	20.7	3054	22.4	3276	22.0	3258	22.1	4129	23.7	4974	24.3	5819	25.4	7625	27.4	9376	28.7	11402	29.7
0.5-<1.0	977	9.0	1312	9.6	1250	8.4	1341	9.1	1545	8.9	1813	8.9	2239	9.8	2898	10.4	3945	12.1	4684	12.2
1.0-<1.5	310	2.9	398	2.9	399	2.7	401	2.7	484	2.8	506	2.5	581	2.5	793	2.9	961	2.9	1225	3.2
1.5-<2.0	125	1.2	156	1.1	99	0.7	144	1.0	167	1.0	168	0.8	184	0.8	196	0.7	324	1.0	329	0.9
2.0-<2.5	43	0.4	56	0.4	61	0.4	45	0.3	46	0.3	58	0.3	51	0.2	77	0.3	87	0.3	129	0.3
2.5-<3.0	14	0.1	20	0.1	19	0.1	19	0.1	22	0.1	29	0.1	27	0.1	43	0.2	44	0.1	55	0.1
3.0-<3.5	5	0.0	10	0.1	12	0.1	10	0.1	6	0.0	12	0.1	15	0.1	27	0.1	17	0.1	26	0.1
3.5-<4.0	8	0.1	10	0.1	4	0.0	6	0.0	7	0.0	6	0.0	8	0.0	5	0.0	13	0.0	15	0.0
4.0-<4.5	3	0.0	4	0.0	3	0.0	2	0.0	4	0.0	6	0.0	7	0.0	6	0.0	6	0.0	7	0.0
4.5-<5.0	2	0.0	3	0.0	0	0.0	2	0.0	7	0.0	6	0.0	7	0.0	9	0.0	12	0.0	13	0.0
5.0-<5.5	1	0.0	2	0.0	1	0.0	0	0.0	2	0.0	3	0.0	8	0.0	7	0.0	1	0.0	6	0.0

$$SE = Sp + \left(\frac{Q_1}{2}\right)SE = Sp + \left(\frac{Q_1}{2}\right)$$

NOTE: Formula of

Number and percentage (%) are based on available information.

Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis.

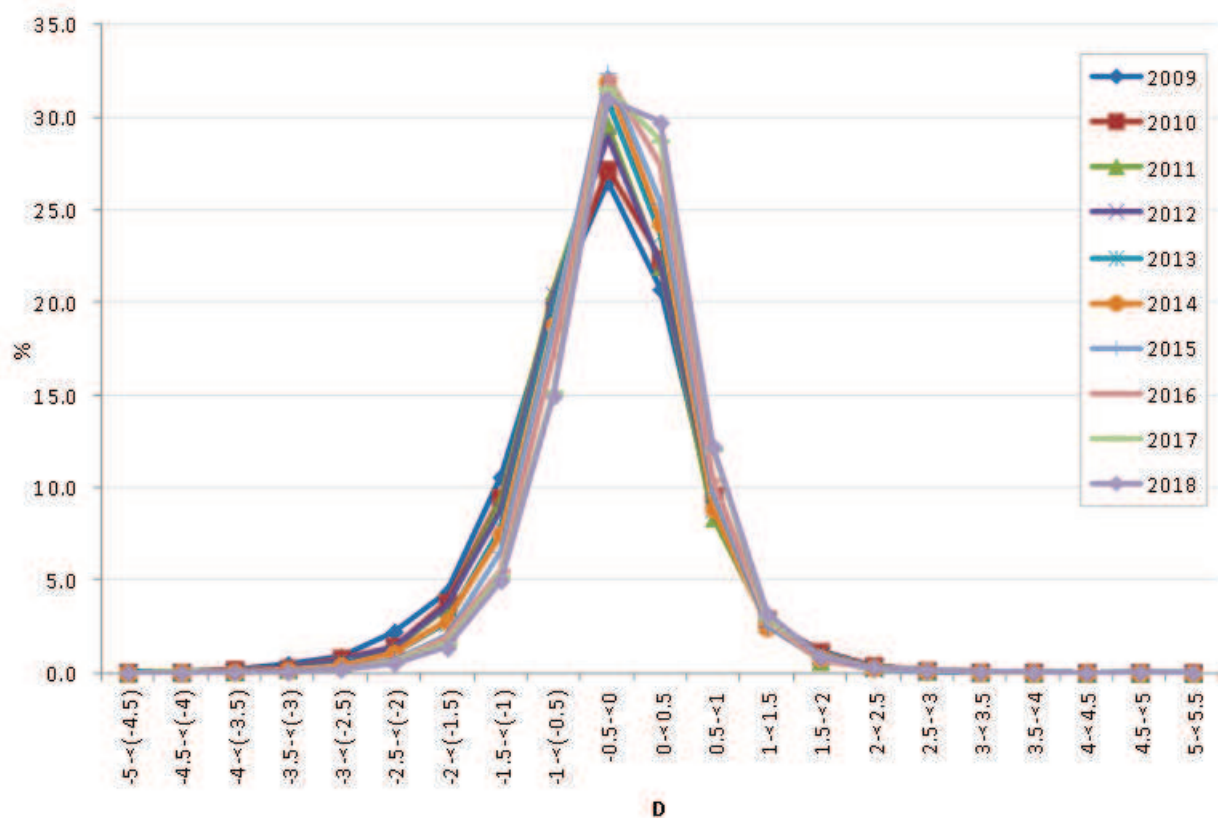


Figure 1.5.9-3: Difference in Targeted and Actual Refractive Power (Phaco), CSR 2009–2018

Table 1.5.9-4: Difference between Targeted and Actual Refractive Power within $\pm 1.0D$ by SDP in Phaco and ECCE, CSR 2018

Hospital	All			By Phacoemulsification			By ECCE		
	No. of patient with available difference	Difference between Target and Actual Refraction within ±1.0D		No. of patient with available difference	Difference between Target and Actual Refraction within ±1.0D		No. of patient with available difference	Difference between Target and Actual Refraction within ±1.0D	
		N	n		%	N		n	%
All centre	41210	35611	86.4	38368	33717	87.9	2173	1438	66.2
Alor Setar	1091	895	82.0	1005	848	84.4	64	33	51.6
Ampang	873	729	83.5	792	664	83.8	75	59	78.7
Batu Pahat	636	533	83.8	586	500	85.3	27	19	70.4
Bintulu	122	105	86.1	122	105	86.1	0	0	0.0
Bukit Mertajam	1220	1106	90.7	1185	1086	91.6	24	13	54.2
Ipoh	3125	2715	86.9	2981	2618	87.8	116	77	66.4
Kangar	713	627	87.9	597	532	89.1	106	88	83.0
Kemaman	71	52	73.2	49	39	79.6	16	10	62.5
Keningau	155	125	80.6	144	121	84.0	9	3	33.3
Klang	239	202	84.5	218	189	86.7	17	10	58.8
Kluang	167	140	83.8	153	133	86.9	11	7	63.6

Kota Bharu	973	824	84.7	796	695	87.3	157	115	73.2
Kuala Krai	337	284	84.3	268	244	91.0	63	36	57.1
Kuala Lumpur	1843	1541	83.6	1745	1485	85.1	71	39	54.9
Kuala Pilah	473	388	82.0	446	377	84.5	20	7	35.0
Kuala Terengganu	1185	994	83.9	1049	907	86.5	93	56	60.2
Kuantan	889	757	85.2	768	681	88.7	104	65	62.5
Kulim	582	526	90.4	536	492	91.8	43	31	72.1
Likas	14	9	64.3	0	0	0.0	0	0	0.0
Melaka	2199	2030	92.3	2063	1936	93.8	105	74	70.5
Miri	981	912	93.0	932	876	94.0	41	31	75.6
Muar	1001	834	83.3	942	799	84.8	47	28	59.6
Pulau Pinang	1914	1611	84.2	1854	1582	85.3	32	15	46.9
Putrajaya	521	456	87.5	461	415	90.0	49	34	69.4
Queen Elizabeth KK	701	587	83.7	639	542	84.8	55	39	70.9
Sandakan	325	259	79.7	273	227	83.2	48	31	64.6
Sarikei	464	417	89.9	452	410	90.7	9	5	55.6
Segamat	2	1	50.0	2	1	50.0	0	0	0.0
Selayang	1021	889	87.1	959	846	88.2	33	21	63.6
Serdang	1296	1061	81.9	1220	1012	83.0	53	34	64.2
Seremban	1636	1334	81.5	1505	1255	83.4	92	53	57.6
Shah Alam	61	56	91.8	58	54	93.1	3	2	66.7
Sibu	647	540	83.5	625	528	84.5	15	8	53.3
Sri Manjung	818	728	89.0	801	718	89.6	9	6	66.7
Sultan Ismail	781	617	79.0	725	586	80.8	27	12	44.4
Sultanah Aminah JB	1031	889	86.2	974	848	87.1	19	11	57.9
Sungai Buloh	202	167	82.7	183	155	84.7	14	8	57.1
Sungei Petani	1203	1077	89.5	1148	1039	90.5	39	27	69.2
Taiping	1759	1605	91.2	1606	1485	92.5	141	111	78.7
Tawau	301	262	87.0	264	234	88.6	29	21	72.4
Teluk Intan	1063	971	91.3	975	905	92.8	78	58	74.4
Temerloh	682	582	85.3	627	542	86.4	47	36	76.6
Umum Sarawak	1114	955	85.7	1096	946	86.3	11	6	54.5
KK-KKM Kedah	202	178	88.1	175	155	88.6	8	5	62.5
KK-KKM Kelantan	96	73	76.0	78	62	79.5	18	11	61.1
KK-KKM Neg. Sembilan	408	346	84.8	390	334	85.6	12	7	58.3
KK-KKM Pahang	73	52	71.2	68	49	72.1	5	3	60.0
KK-KKM Sabah	333	274	82.3	309	260	84.1	13	7	53.8
KK-KKM Sarawak	467	398	85.2	437	379	86.7	11	6	54.5
KK-KKM Terengganu	145	124	85.5	133	115	86.5	10	7	70.0
KK-KKM Static	3055	2774	90.8	2954	2706	91.6	84	53	63.1

$$SE = Sp + \left(\frac{QV}{2}\right)SE = Sp + \left(\frac{QV}{2}\right)$$

NOTE: Formula of Actual Refraction,

Result is based on available info of target and actual refraction.

Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis.

Table 1.5.9-5: Post-operative Visual Acuity and Week of Outcome Notification, CSR 2018

Post op week	Unaided VA*									
	6/12 and better		<6/12-6/18		<6/18-6/60		<6/60-3/60		<3/60	
	n	%	n	%	n	%	n	%	n	%
1 week	493	1.7	240	2.6	338	3.4	41	4.8	104	5.9
2–4 weeks	1413	5.0	591	6.4	712	7.2	83	9.8	209	11.8
5–12 weeks	24970	88.5	7928	86.0	8217	82.8	661	77.8	1279	72.4
13–20 weeks	713	2.5	252	2.7	346	3.5	29	3.4	61	3.5
21–30 weeks	122	0.4	52	0.6	55	0.6	5	0.6	8	0.5
31–60 weeks	39	0.1	20	0.2	20	0.2	4	0.5	5	0.3
>60 weeks	2	0.0	2	0.0	1	0.0	0	0.0	0	0.0
(Missing)	478	1.7	131	1.4	229	2.3	27	3.2	101	5.7
Total	28230		9216		9918		850		1767	

*Missing of unaided VA = 5706 cases.

Post op week	Refracted VA*									
	6/12 and better		<6/12-6/18		<6/18-6/60		<6/60-3/60		<3/60	
	n	%	n	%	n	%	n	%	n	%
1 week	399	1.0	59	2.6	76	2.7	9	2.4	44	4.1
2–4 weeks	2165	5.2	164	7.3	254	9.2	46	12.4	112	10.5
5–12 weeks	37241	89.2	1890	83.9	2217	80.0	291	78.2	803	75.2
13–20 weeks	1147	2.7	76	3.4	105	3.8	12	3.2	34	3.2
21–30 weeks	204	0.5	12	0.5	16	0.6	3	0.8	5	0.5
31–60 weeks	69	0.2	4	0.2	9	0.3	2	0.5	3	0.3
>60 weeks	4	0.0	0	0.0	1	0.0	0	0.0	0	0.0
(Missing)	538	1.3	47	2.1	93	3.4	9	2.4	67	6.3
Total	41767		2252		2771		372		1068	

*Missing of refracted VA = 7457 cases.

Table 1.5.9-6: Post-operative Visual Acuity (WHO classification) and Week of Outcome Notification, CSR 2018

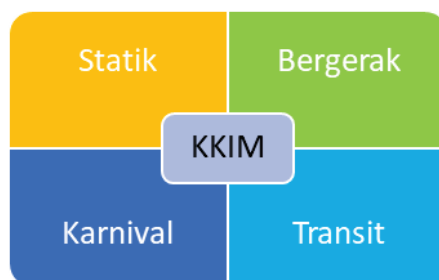
Post op week	Unaided VA*						Refracted VA**					
	Good (≤6/18)		Borderline (<6/18–6/60)		Poor (<6/60)		Good (≤6/18)		Borderline (<6/18–6/60)		Poor (<6/60)	
	n	%	n	%	n	%	n	%	n	%	n	%
1 week	733	2.0	338	3.4	145	5.5	458	1.0	76	2.7	53	3.7
2–4 weeks	2004	5.4	712	7.2	292	11.2	2329	5.3	254	9.2	158	11.0
5–12 weeks	32898	87.9	8217	82.8	1940	74.1	39131	88.9	2217	80.0	1094	76.0
13–20 weeks	965	2.6	346	3.5	90	3.4	1223	2.8	105	3.8	46	3.2
21–30 weeks	174	0.5	55	0.6	13	0.5	216	0.5	16	0.6	8	0.6
31–60 weeks	59	0.2	20	0.2	9	0.3	73	0.2	9	0.3	5	0.3
>60 weeks	4	0.0	1	0.0	0	0.0	4	0.0	1	0.0	0	0.0
(Missing)	609	1.6	229	2.3	128	4.9	585	1.3	93	3.4	76	5.3
Total	37446		9918		2617		44019		2771		1440	

*Missing of unaided VA = 5706 cases.

**Missing of refracted VA = 7457 cases.

CHAPTER 2: KLINIK KATARAK - KKM

Klinik Katarak-KKM (KK-KKM) is the outreach arm of the MOH Cataract Surgical Services. The services include KK-KKM mobile, transit and static and carnival. All these services are categorised under each state and named after the hospital where the surgery is performed. KK-KKM Static is specifically Pusat Pembedahan Katarak Majlis Agama Islam Wilayah Persekutuan-Hospital Selayang (PPKM-HS) and KK-KKM Kedah (Hospital Jitra). They are reported separately. For this report, calculation and analysis were done for KK-KKM mobile, transit and carnival.



Note:

KK-KKM Mobile = Surgery at hospitals without Ophthalmologists with involvement of a mobile unit to transport surgical equipment

KK-KKM Transit = Surgery at hospitals without Ophthalmologists without involvement of a mobile unit to transport surgical equipment

KK-KKM Carnival = Surgery at hospitals with Ophthalmologists (mass surgery during weekends)

2.1 Stock and Flow

2.1.1 Stock and Flow

Table 2.1.1-1: Stock and Flow, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of SDP	6		18		25		24		34		34	
Total no. of cataract surgery registered to CSR	140		1055		1704		2159		2993		2692	
Cataract surgery with visual outcome records	n	%	n	%	n	%	n	%	n	%	n	%
	98	70.0	863	81.8	1455	85.4	1765	81.8	2496	83.4	1981	73.6

Excluding KK-KKM Static

2.2 Characteristics of Patients

2.2.1 Demography

Table 2.2.1-1: Age Distribution, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Total number of cataract surgery	140		1055		1704		2159		2993		2692	
Age												
Mean (years)	67.4		68.6		68.4		67.5		67.6		67.2	
Median (years)	69		69		69		68		68		68	
Minimum (years)	47		34		33		25		24		12	
Maximum (years)	89		95		97		98		98		94	
% Distribution												
Age group, years	n	%	n	%	n	%	n	%	n	%	n	%
0-4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5-9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10-14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
15-19	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20-24	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0
25-29	0	0.0	0	0.0	0	0.0	1	0.1	2	0.1	3	0.1
30-34	0	0.0	1	0.1	2	0.1	3	0.1	3	0.1	2	0.1
35-39	0	0.0	1	0.1	1	0.1	2	0.1	10	0.3	7	0.3
40-44	0	0.0	10	1.0	6	0.4	13	0.6	26	0.9	20	0.7
45-49	5	3.6	19	1.8	23	1.4	40	1.9	44	1.5	41	1.5
50-54	10	7.1	31	2.9	54	3.2	106	4.9	161	5.4	138	5.1
55-59	10	7.1	92	8.7	166	9.7	214	9.9	290	9.7	279	10.4
60-64	22	15.7	164	15.6	308	18.1	379	17.6	486	16.2	475	17.6
65-69	28	20.0	241	22.8	350	20.5	503	23.3	663	22.2	615	22.9
70-74	35	25.0	217	20.6	371	21.8	455	21.1	622	20.8	532	19.8
75-79	22	15.7	159	15.1	255	15.0	258	12.0	442	14.8	381	14.2
≥80	8	5.7	120	11.4	168	9.9	185	8.6	242	8.1	198	7.4
Missing	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Gender												

Male	59	42.1	495	46.9	832	48.8	1073	49.7	1522	50.9	1309	48.6
Female	81	57.9	560	53.1	872	51.2	1086	50.3	1471	49.2	1383	51.4
Missing	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

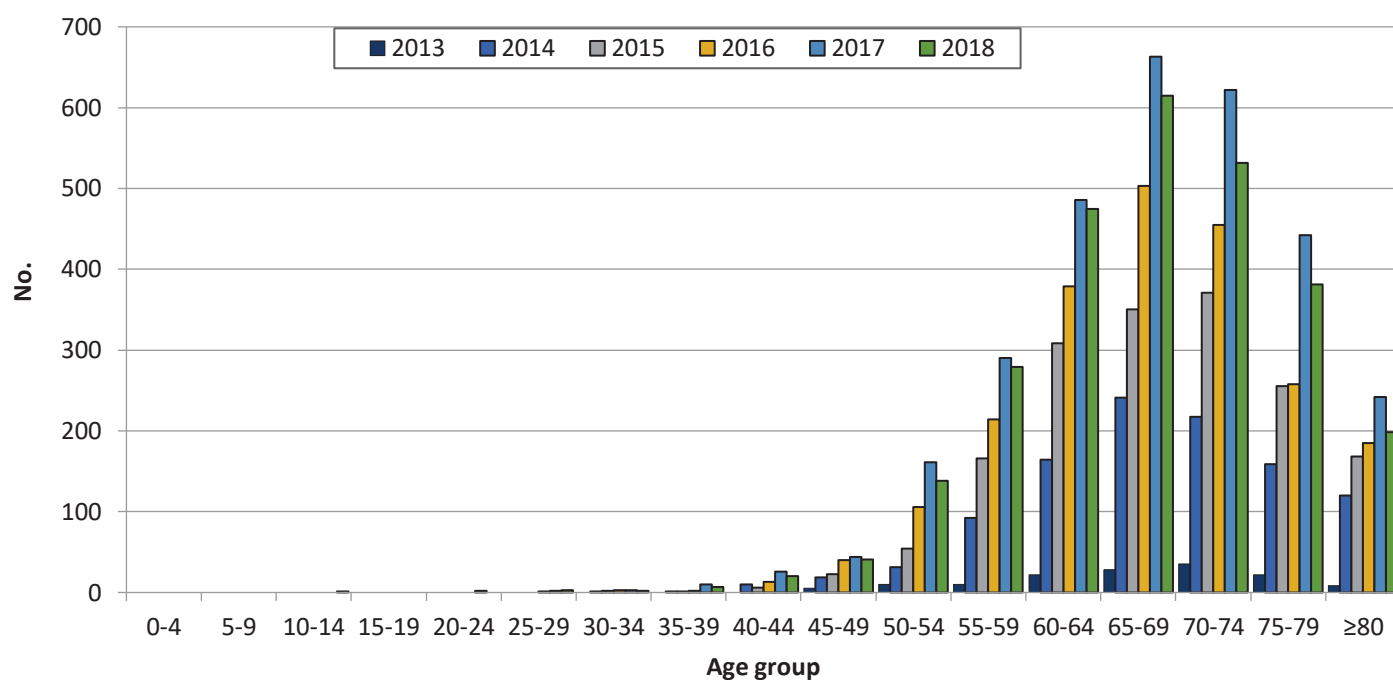


Figure 2.2.1-1: Age Distribution, CSR 2013-2018

2.2.2 Systemic Co-Morbidity

Table 2.2.2-1: Distribution of Systemic Co-morbidity, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	140		1055		1704		2159		2993		2692	
Percentage of patients with any systemic co-morbidity	65.7		57.3		65.6		72.0		73.9		78.8	
Percentage of patients with specific systemic co-morbidity												
	n	%	n	%	n	%	n	%	n	%	n	%
Hypertension	7	51.	50	47.	98	57.	133	78.	184	61.	181	67.
	2	4	0	4	0	5	9	6	9	8	5	4
Diabetes Mellitus	4	32.	25	24.	51	29.	781	45.	119	39.	116	43.
	5	1	9	5	0	9	8	3	9	2	2	
Ischaemic Heart Disease	2	1.4	11	1.0	43	2.5	79	4.6	129	4.3	144	5.3
COAD/Asthma	2	1.4	24	2.3	31	1.8	53	3.1	89	3.0	91	3.4
Renal Failure	0	0.0	6	0.6	16	0.9	32	1.9	65	2.2	61	2.3

Cerebrovascular accident	1	0.7	3	0.3	7	0.4	16	0.9	24	0.8	30	1.1
Others	1				11		14.		438	14.	485	18.
	2	8.6	55	5.2	2	6.6	250	7	6		0	

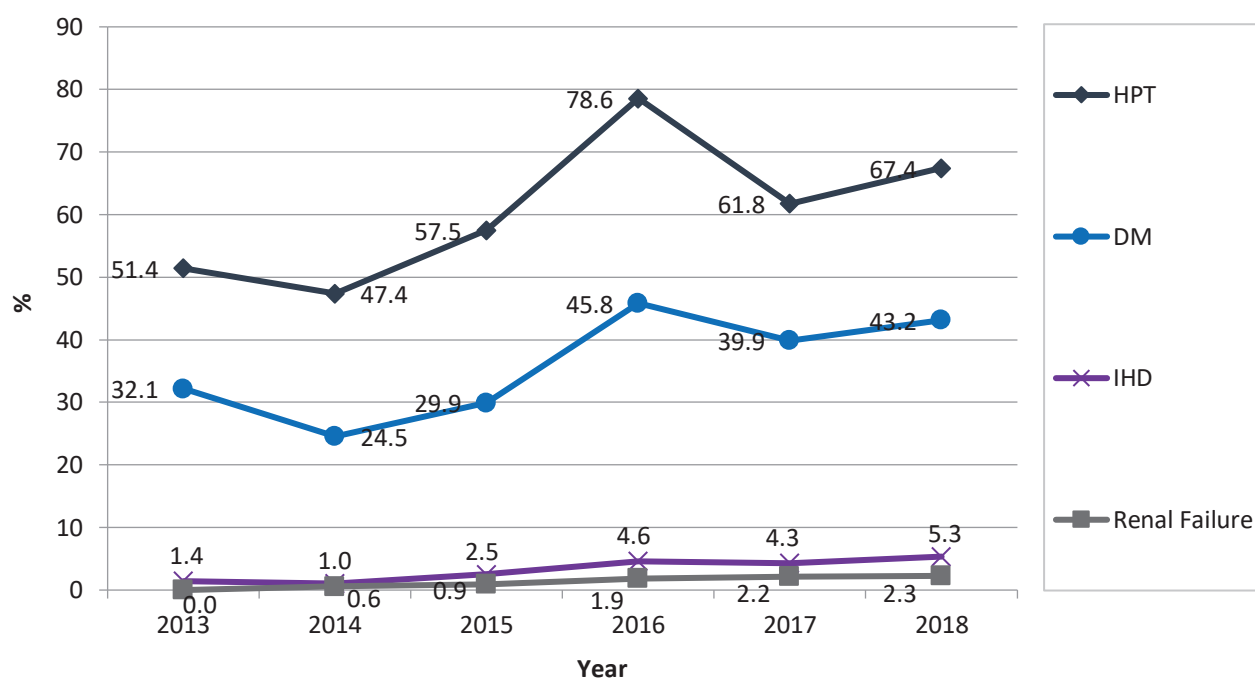


Figure 2.2.2-1: Percentage of Patients with Specific Systemic Co-morbidity, CSR 2013-2018

2.2.3 Causes of Cataract

Table 2.2.3-1: Causes of Cataract, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
Primary cataract	139	99.3	1043	98.9	1693	99.4	2148	99.5	2883	96.3	2633	97.8
Secondary cataract	1	0.7	3	0.3	2	0.1	5	0.2	17	0.6	12	0.4
Missing value	0	0.0	9	0.9	9	0.5	6	0.3	93	3.1	47	1.7
Primary Cataract (N)	139		1043		1693		2148		2883		2633	
	n	%	n	%	n	%	n	%	n	%	n	%
Senile/age related	136	97.8	1039	99.6	1672	98.8	2135	99.4	2851	98.9	2594	98.5
Development	0	0.0	0	0.0	0	0.0	4	0.2	5	0.2	4	0.2
Congenital	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	3	2.2	4	0.4	21	1.2	9	0.4	27	0.9	35	1.3
Secondary Cataract (N)	1		3		2		5		17		12	

	n	%	n	%	n	%	n	%	n	%	n	%
Trauma	1	100.0	3	100.0	2	100.0	3	60.0	8	47.1	8	66.7
Drug induced	0	0.0	0	0.0	0	0.0	0	0.0	2	11.8	2	16.7
Surgery induced	0	0.0	0	0.0	0	0.0	1	20.0	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	1	20.0	7	41.2	2	16.7

2.2.4 First or Second Eye Surgery

Table 2.2.4-1: First or Second Eye Surgery, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
First eye surgery	13	94.	85	80.	13	76.	154	71.	207	69.	179	66.
	2	3	0	6	05	6	7	7	1	2	7	8
Fellow eye surgery	8	5.7	20	19.	39	23.	611	28.	922	30.	892	33.
			5	4	9	4		3		8		1
Missing	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	3	0.1
Patients who had second surgery in the same year	2	1.4	58	5.5	11	6.5	151	7.0	241	8.1	212	7.9
					1							
Period of time between first and fellow eye surgery (months)												
N	8		205		396		610		883		737	
Mean	36.7		75.9		48.1		48.4		43.1		22.1	
SD	21.8		68.6		64.1		65.2		61.7		37.6	
Median	43.0		50.1		12.0		13.0		13.5		10.8	
Patients who had cataract surgery before	620		205		399		611		922		892	
	n	%	n	%	n	%	n	%	n	%	n	%
Eyes with intra-operative complications during surgery in the first eye	0	0.0	2	1.0	4	1.0	15	2.5	25	2.7	20	2.2

2.2.5 Past Ocular Surgery of the Operated Eye

Table 2.2.5-1: Past Ocular Surgery of the Operated Eye, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients	104		1055		1704		2159		2993		2692	
No. of eyes with past ocular surgery record (N)	129		1042		1649		2122		2842		2517	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients with no past ocular surgery	12	100.	103	99.	163	99.	210	99.	279	98.	247	98.
	9	0	7	5	4	1	5	2	6	4	7	4
Pterygium excision	0	0.0	3	0.3	13	0.8	11	0.5	37	1.3	27	1.1
Vitreoretinal surgery	0	0.0	1	0.1	1	0.1	3	0.1	0	0.0	4	0.2
Filtering surgery	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0
Penetrating keratoplasty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	0	0.0	1	0.1	1	0.1	2	0.1	9	0.3	10	0.4

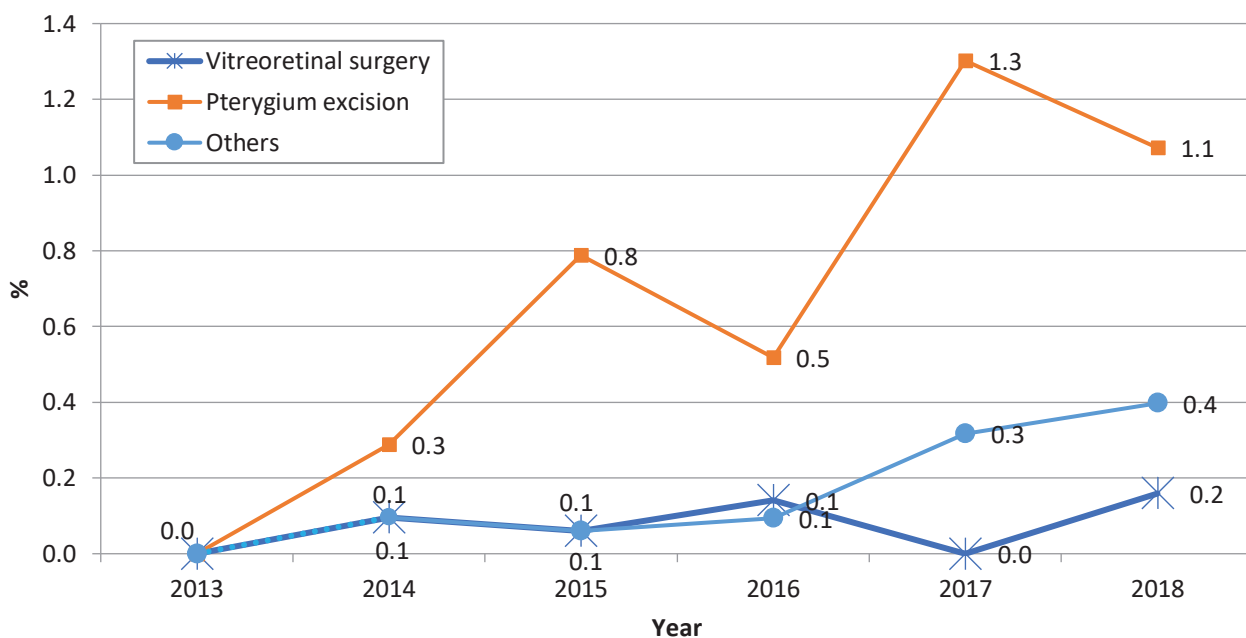


Figure 2.2.5-1: Distribution of Past Ocular Surgery of the Operated Eye, CSR 2013-2018

2.2.6 Pre-existing Ocular Co-morbidity

Table 2.2.6-1: Distribution of Pre-existing Ocular Co-morbidity, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients with any ocular co-morbidity	47	33.6	256	24.3	239	14.0	417	19.3	612	20.4	615	22.8
Patients with specific ocular co-morbidity												
Anterior segment												
1. Glaucoma	2	1.4	9	0.9	32	1.9	54	2.5	73	2.4	97	3.6
2. Pterygium involving the cornea	4	2.9	17	1.6	5	0.3	24	1.1	55	1.8	48	1.8
3. Pseudoexfoliation	1	0.7	3	0.3	4	0.2	11	0.5	15	0.5	18	0.7
4. Corneal opacity	0	0.0	2	0.2	5	0.3	14	0.6	8	0.3	20	0.7
5. Chronic uveitis	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1	0	0.0
Len related complication												
1. Phacomorphic	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	4	0.1
2. Subluxated/Disclosed	0	0.0	0	0.0	0	0.0	0	0.0	5	0.2	2	0.1
3. Phacolytic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Posterior segment												
1. Diabetic Retinopathy: Non Proliferative	1	0.7	9	0.9	45	2.6	97	4.5	134	4.5	126	4.7
2. Diabetic Retinopathy: Proliferative	0	0.0	0	0.0	7	0.4	22	1.0	38	1.3	26	1.0

3. Diabetic Retinopathy: CSME*	0	0.0	1	0.1	10	0.6	22	1.0	33	1.1	22	0.8
4. Diabetic Retinopathy: Vitreous haemorrhage	0	0.0	0	0.0	0	0.0	0	0.0	5	0.2	5	0.2
5. ARMD	3	2.1	4	0.4	8	0.5	21	1.0	24	0.8	26	1.0
6. Other macular disease (includes hole or scar)	0	0.0	2	0.2	5	0.3	10	0.5	15	0.5	17	0.6
7. Optic nerve disease, any type	0	0.0	0	0.0	5	0.3	7	0.3	3	0.1	10	0.4
8. Retinal detachment	0	0.0	0	0.0	0	0.0	3	0.1	4	0.1	3	0.1
9. Cannot be assessed	3 4	24.3	204	19.3	121	7.1	136	6.3	187	6.2	184	6.8
Miscellaneous												
1. Significant previous eye trauma	0	0.0	1	0.1	0	0.0	1	0.0	1	0.0	3	0.1
2. Amblyopia	0	0.0	1	0.1	1	0.1	0	0.0	1	0.0	0	0.0
3. Pre-existing non glaucoma field defect	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4. Others	8	5.7	11	1.0	29	1.7	44	2.0	96	3.2	78	2.9

*CSME=Clinically Significant Macular Oedema

Number or percentage may be more than total or 100% as patients might have more than one ocular co-morbidity

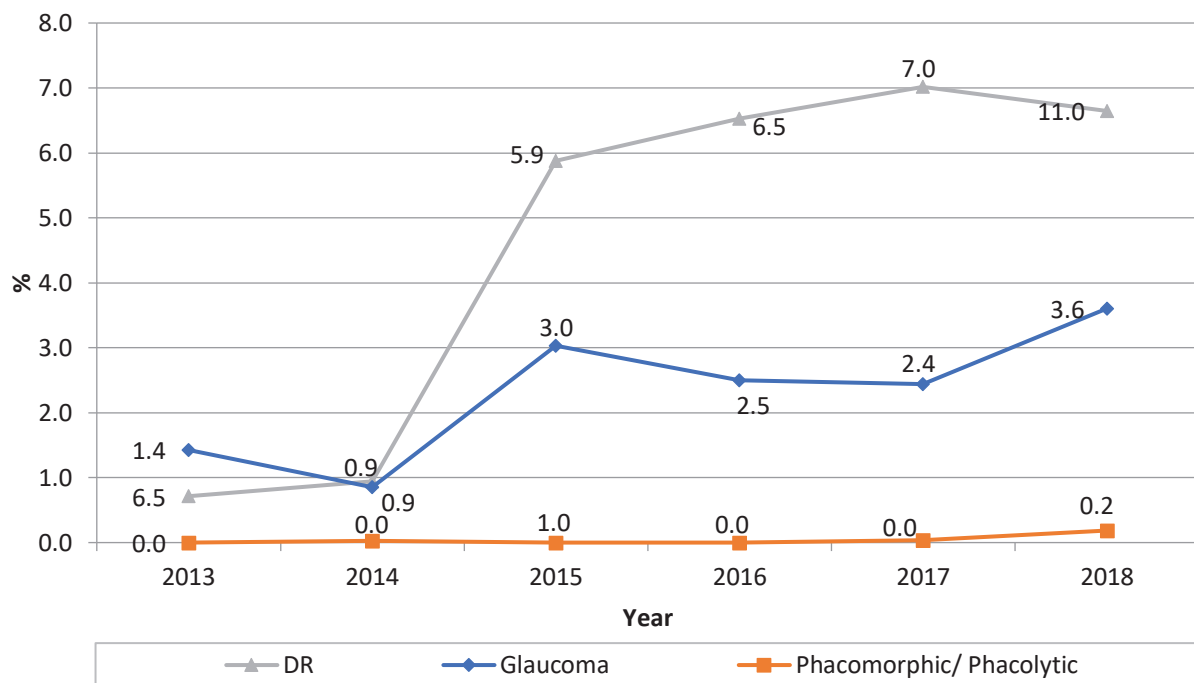


Figure 2.2.6-1: Distribution of Eyes with Specific Ocular Co-morbidity, CSR 2013-2018

2.2.7 Pre-operative Vision

Table 2.2.7-1: Distribution of Pre-Operative Vision, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients with unaided VA	136	97.1	1048	99.3	1669	97.9	2146	99.4	2951	98.6	2686	99.8
Patients with pinhole VA	78	55.7	313	29.7	482	28.3	1691	78.3	2712	90.6	2636	97.9
Patients with unaided VA and no ocular comorbid	90	64.3	795	75.4	1433	84.1	1729	80.1	2342	78.2	2073	77.0
Patients with no refraction	108	77.1	992	94.0	1410	82.7	1570	72.7	2094	70.0	478	17.8
Unaided	3	2.2	16	1.5	39	2.3	58	2.7	83	2.8	85	3.2
6/12 and better Pinhole	5	6.4	39	12.5	80	16.6	203	12.0	356	13.1	315	11.9
Unaided and no ocular comorbid	2	2.2	16	2.0	33	2.3	40	2.3	68	2.9	66	3.2
Unaided	1	0.7	42	4.0	106	6.4	115	5.4	191	6.5	180	6.7
<6/12 - 6/18 Pinhole	6	7.7	45	14.4	110	22.8	247	14.6	359	13.2	337	12.8
Unaided and no ocular comorbid	1	1.1	39	4.9	92	6.4	94	5.4	155	6.6	142	6.8
Unaided	46	33.8	325	31.0	589	35.3	818	38.1	1115	37.8	975	36.3
<6/18 - 6/60 Pinhole	34	43.6	139	44.4	193	40.0	549	32.5	839	30.9	750	28.5
Unaided and no ocular comorbid	39	43.3	281	35.3	541	37.8	691	40.0	929	39.7	784	37.8
Unaided	5	3.7	45	4.3	112	6.7	138	6.4	202	6.8	199	7.4
<6/60 - 3/60 Pinhole	3	3.8	10	3.2	21	4.4	71	4.2	126	4.6	132	5.0
Unaided and no ocular comorbid	2	2.2	30	3.8	99	6.9	97	5.6	162	6.9	162	7.8
Unaided	81	59.6	620	59.2	823	49.3	1017	47.4	1360	46.1	1247	46.4
<3/60 Pinhole	30	38.5	80	25.6	78	16.2	621	36.7	1032	38.1	1102	41.8
Unaided and no ocular comorbid	46	51.1	429	54.0	668	46.6	807	46.7	1028	43.9	919	44.3
Unaided VA for patient with no refraction												
n	108		992		1410		1570		2094		478	
6/12 and better	2	1.9	14	1.4	23	1.6	26	1.7	39	1.9	7	1.5
<6/12 - 6/18	0	0.0	35	3.5	75	5.3	56	3.6	101	4.8	17	3.6
<6/18 - 6/60	30	27.8	303	30.5	462	32.8	556	35.4	709	33.9	143	29.9
<6/60 - 3/60	3	2.8	44	4.4	99	7.0	86	5.5	131	6.3	37	7.7
<3/60	73	67.6	596	60.1	751	53.3	846	53.9	1114	53.2	268	56.1

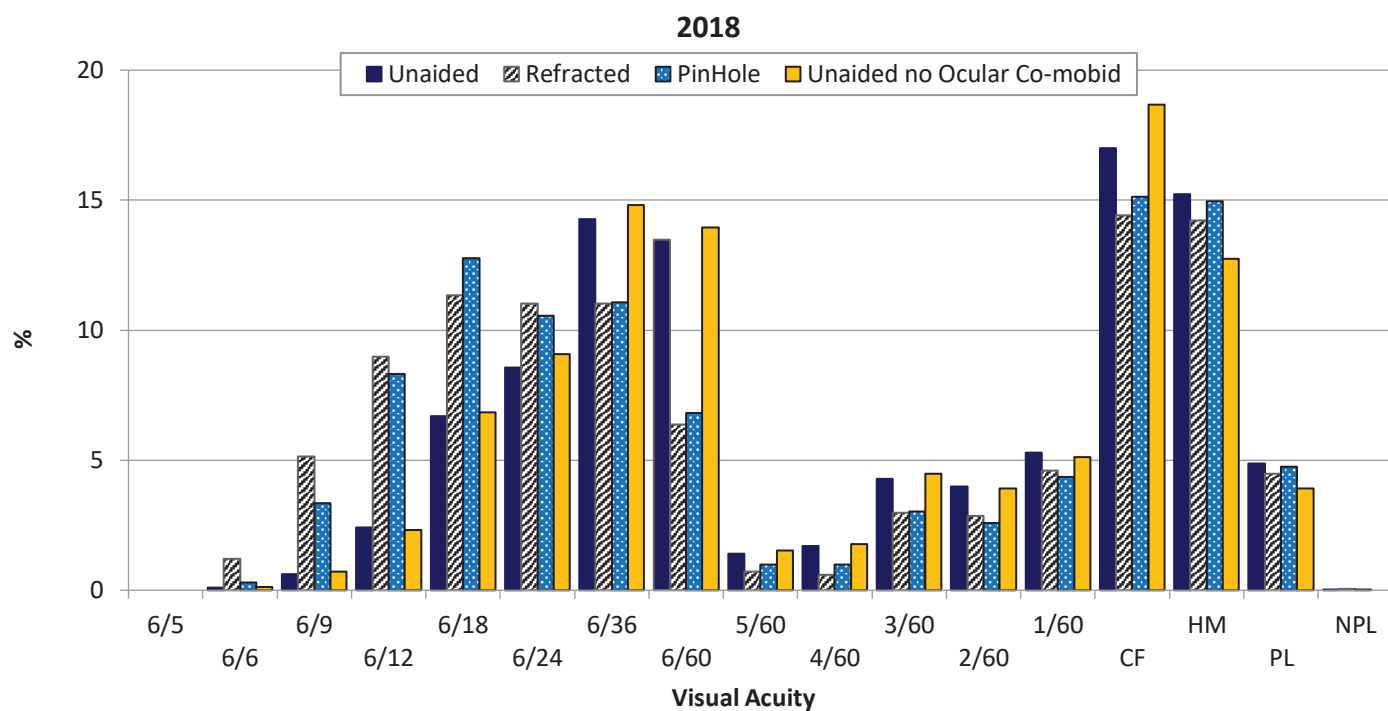


Figure 2.2.7-1: Distribution of Pre-Operative Vision, CSR 2018

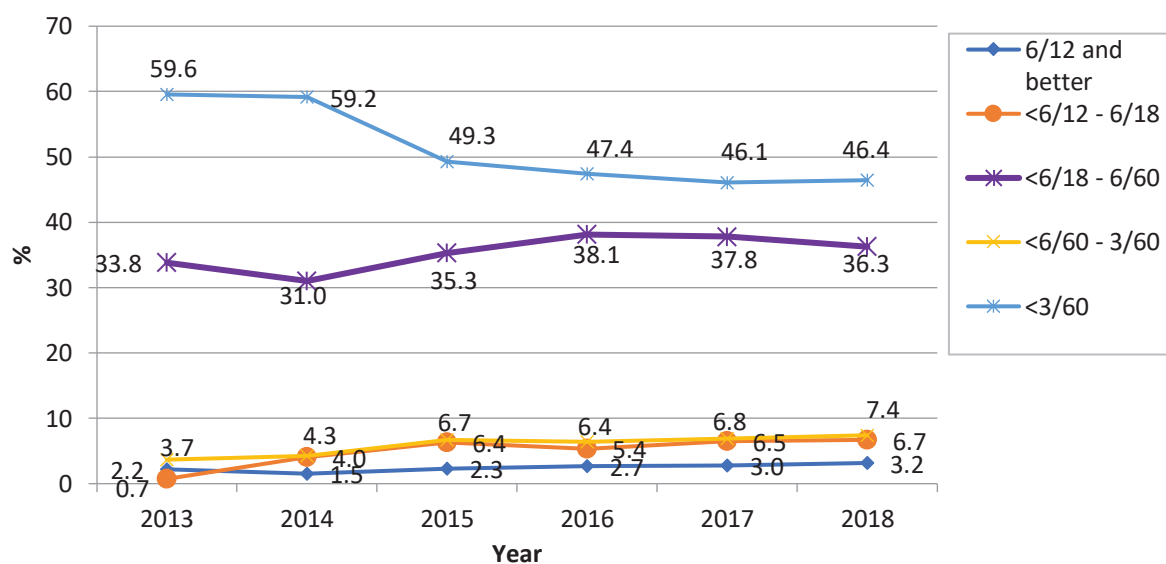


Figure 2.2.7-2: Distribution of Pre-Operative Vision (Unaided/presenting), CSR 2013-2018

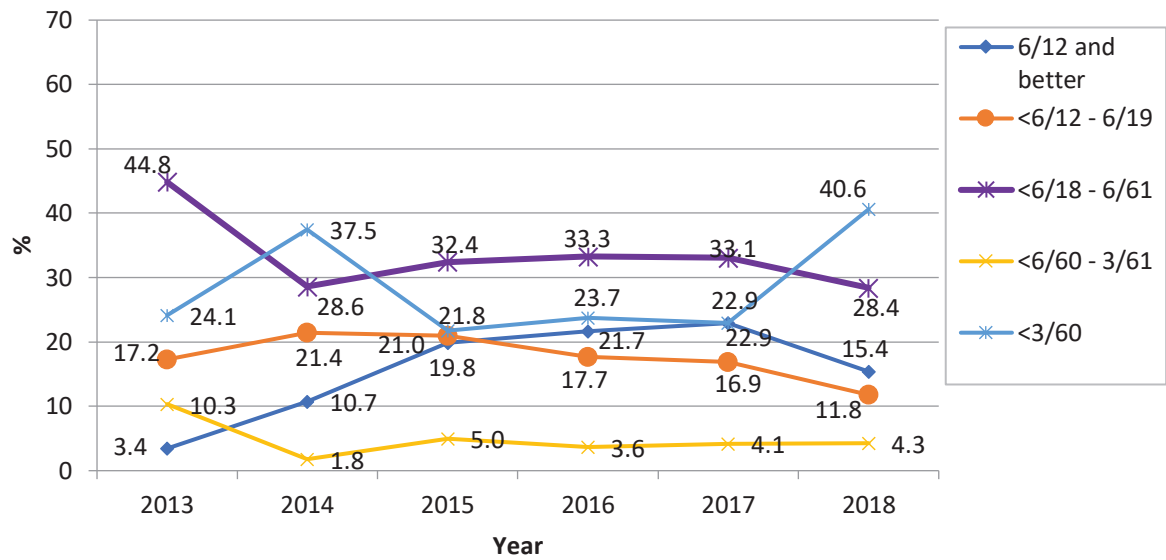


Figure 2.2.7-3: Distribution of Pre-Operative Vision (Refracted), CSR 2013-2018

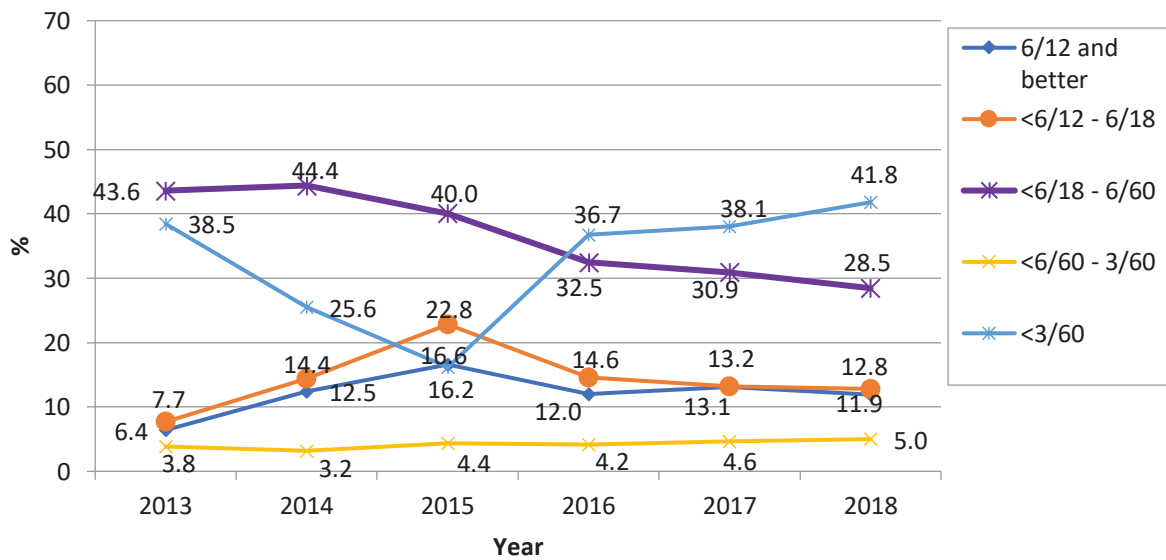


Figure 2.2.7-4: Distribution of Pre-Operative Vision (Pin Hole), CSR 2013-2018

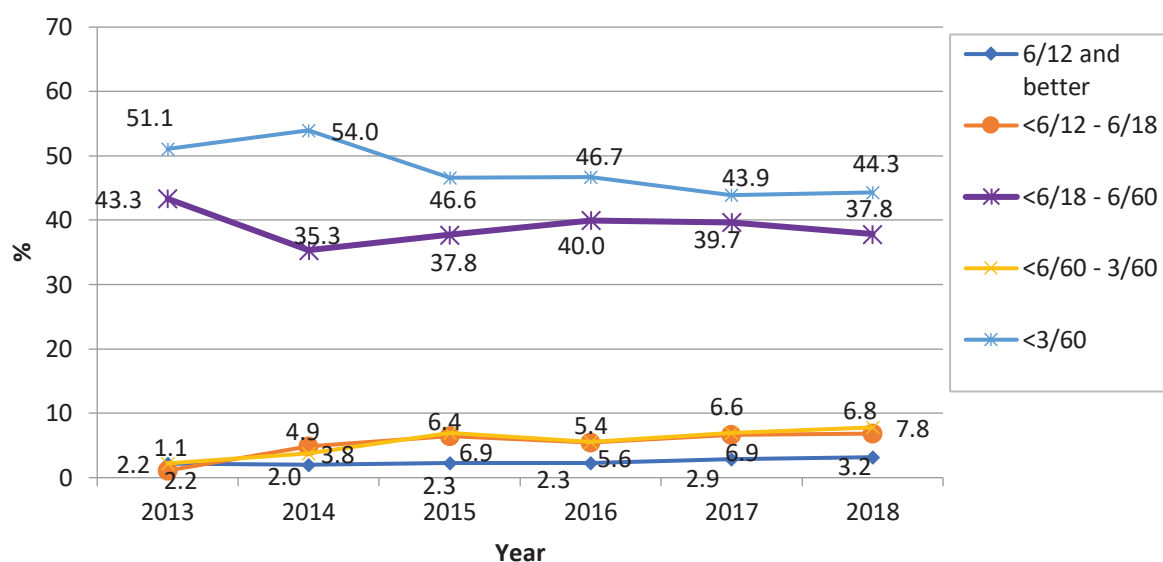


Figure 2.2.7-5: Distribution of Pre-Operative Vision (Unaided/presenting) without Ocular Co-morbidity, CSR 2013-2018

2.2.8 Target Refractive Power

Table 2.2.8-1: Distribution of Target Refractive Power, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Operated eye (N)	139	894	1598	2090	2751	2548
Mean	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4
SD	0.2	0.2	0.2	0.2	0.3	0.3
Median	-0.3	-0.2	-0.3	-0.4	-0.4	-0.5
Minimum	-0.8	-1.6	-2.1	-3.2	-2.3	-2.0
Maximum	0.0	0.5	1.3	0.7	2.8	3.0

Table 2.2.8-2: Distribution of Target Refractive Power, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Target refractive power (Dioptres)	Operated eye N=139	Operated eye N=894	Operated eye N=1598	Operated eye N=2090	Operated eye N=2751	Operated eye N=2548
	n	%	n	%	n	%
-10-< (-9.5)	0	0.0	0	0.0	0	0.0
-9.5-< (-9)	0	0.0	0	0.0	0	0.0
-9-< (-8.5)	0	0.0	0	0.0	0	0.0
-8.5-< (-8)	0	0.0	0	0.0	0	0.0
-8-< (-7.5)	0	0.0	0	0.0	0	0.0
-7.5-< (-7)	0	0.0	0	0.0	0	0.0
-7-< (-6.5)	0	0.0	0	0.0	0	0.0
-6.5-< (-5)	0	0.0	0	0.0	0	0.0

-5-< (-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.5-< (-4)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4-< (-3.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3.5-< (-3)	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
-3-< (-2.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-2.5-< (-2)	0	0.0	0	0.0	1	0.1	0	0.0	1	0.0	0	0.0
-2-< (-1.5)	0	0.0	1	0.1	1	0.1	3	0.1	0	0.0	4	0.2
-1.5-< (-1)	0	0.0	0	0.0	2	0.1	4	0.2	8	0.3	10	0.4
-1-< (-0.5)	18	13.0	67	7.5	130	8.1	404	19.3	792	28.8	986	38.7
-0.5-<0	120	86.3	822	92.0	1454	91.0	1666	79.7	1903	69.2	1527	59.9
0-<0.5	1	0.7	3	0.3	5	0.3	8	0.4	8	0.3	6	0.2
0.5-<1	0	0.0	1	0.1	2	0.1	4	0.2	4	0.2	0	0.0
1-<1.5	0	0.0	0	0.0	3	0.2	0	0.0	2	0.1	1	0.0
1.5-<2	0	0.0	0	0.0	0	0.0	0	0.0	5	0.2	1	0.0
2-<2.5	0	0.0	0	0.0	0	0.0	0	0.0	20	0.7	2	0.1
2.5-<3	0	0.0	0	0.0	0	0.0	0	0.0	8	0.3	10	0.4
3-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
3.5-<4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9-<9.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Values outside the +10D and -10D were excluded from analysis as they would skew the mean.

2.3 Cataract Surgical Practices

2.3.1 Number of Cataract Surgery Registered to CSR by State

Table 2.3.1-1: Number of Cataract Surgery Registered to CSR by State, CSR 2013-2018

State	2013	2014	2015	2016	2017	2018
Negeri Sembilan	-	-	4	220	444	720
Sabah	-	-	131	275	480	590
Sarawak	76	831	1131	917	885	572
Kedah	-	-	209	339	352	279
Kelantan	-	186	2	62	138	195
Pahang	64	-	187	119	294	169
Terengganu	-	38	40	50	277	167
Johor	-	-	-	93	33	-
Pulau Pinang	-	-	-	84	90	-

2.3.2 Surgeon Status

Table 2.3.2-1: Surgeon Status, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
Specialist	135	96.43	1016	96.3	1670	98.0	2106	97.5	2819	94.2	2615	97.1
Gazetting Specialist	5	3.57	35	3.32	26	1.5	46	2.1	113	3.8	38	1.4
Medical Officer	0	0	4	0.38	8	0.5	7	0.3	61	2.0	39	1.4
Missing/NA	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0

2.3.3 Duration of Surgery

Table 2.3.3-1: Duration of Surgery by Types of Cataract Surgery in minutes, CSR 2013-2018

Year	2013*		2014*		2015*		2016*		2017*		2018*	
	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR
All eyes	25	(19-35)	20	(17-30)	20	(17-30)	21	(18-29)	23	(18-30)	22	(18-30)
Phaco	22	(18-30)	20	(16-25)	20	(17-26)	21	(18-27)	22	(18-29)	21	(18-28)
ECCE	55	(42-70)	35	(30-47)	45	(35-60)	35	(30-45)	43	(35-60)	43	(32-55)
Phaco → ECCE	50	(38-52)	41	(35-58)	50	(39-66)	46.5	(39-56)	-	-	-	-
ICCE	50	-	32	-	49.5	(46.5-62.5)	40	(38-60)	45	(30-60)	50.5	(40-55)
Lens Aspiration	-	-	-	-	-	-	55	-	18.5	(17-20)	25	(16-25)
SICS	-	-	-	-	-	-	-	-	-	-	37.5	(31-45)

*Data entered with extreme values i.e. more than 3 hours and less than 15 minutes were not analyzed as it would skew the data

2.3.4 Distribution of Cataract Surgery Performed Under Day Care Setting

Table 2.3.4-1: Distribution of Cataract Surgery Performed Under Day Care Setting, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Number of SDPs	2		4		7		9		9		7	
Total number of cataract surgery registered to CSR	140		1055		1704		2159		2993		2692	
Number of surgery excluding children and combined surgery	137		1051		1692		2151		2995		2666	
	n	%	n	%	n	%	n	%	n	%	n	%
Number and % of day care surgery excluding children and combined surgery	76	55.5	1000	95.1	1536	90.8	1912	88.9	2622	87.5	2448	91.8

2.3.5 Distribution of Types of Cataract Surgery

Table 2.3.5-1: Distribution of Types of Cataract Surgery, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
Phacoemulsification	121	86.4	934	88.5	1608	94.4	2055	95.2	2789	93.2	2466	91.6
ECCE	12	8.6	100	9.5	57	3.3	54	2.5	183	6.1	136	5.1
SICS	-	-	-	-	-	-	-	-	-	-	59	2.2
ICCE	1	0.7	1	0.1	4	0.2	3	0.1	9	0.3	20	0.7
Lens Aspiration	0	0.0	0	0.0	0	0.0	1	0.0	4	0.1	6	0.2
Phaco converted to ECCE	6	4.3	18	1.7	35	2.1	45	2.1	-	-	-	-

Table 2.3.5-2: Distribution of Types of Cataract Surgery by SDP, CSR 2013-2018

Type of Cataract Surgery									
2013	All Surgeries		Phaco		ECCE		Lens Aspiration		Phaco Converted to ECCE
	N	%	n	%	n	%	n	%	n
All Centres	140	100.0	121	86.4	12	8.6	0	0.0	6
KK-KKM Pahang	64	100.0	47	73.4	11	17.2	0	0.0	5
KK-KKM Sarawak	76	100.0	74	97.4	1	1.3	0	0.0	1

Type of Cataract Surgery									
2014	All Surgeries		Phaco		ECCE		Lens Aspiration		Phaco Converted to ECCE
	N	%	n	%	n	%	n	%	n
All Centres	1055	100.0	934	88.5	100	9.5	0	0.0	18
KK-KKM Terengganu	38	100.0	28	84.2	10	15.8	0	0.0	0
KK-KKM Kelantan	186	100.0	94	50.5	82	44.1	0	0.0	9
KK-KKM Sarawak	831	100.0	812	97.2	8	1.4	0	0.0	9

Type of Cataract Surgery									
2015	All Surgeries		Phaco		ECCE		Lens Aspiration		Phaco Converted to ECCE
	N	%	n	%	n	%	n	%	n
All Centres	1704	100.0	1608	94.4	57	3.3	0	0.0	35
KK-KKM Kedah	209	100.0	209	100.0	0	0.0	0	0.0	0
KK-KKM Kelantan	2	100.0	2	100.0	0	0.0	0	0.0	0
KK-KKM Neg. Sembilan	4	100.0	3	75.0	0	0.0	0	0.0	1
KK-KKM Pahang	187	100.0	161	86.1	17	9.1	0	0.0	8
KK-KKM Sabah	131	100.0	107	81.7	18	13.7	0	0.0	6
KK-KKM Sarawak	1,131	100.0	1,096	96.9	13	1.1	0	0.0	19
KK-KKM Terengganu	40	100.0	30	75.0	9	22.5	0	0.0	1

Type of Cataract Surgery												
2016	All Surgeries		Phaco		ECCE		Lens Aspiration		Phaco Converted to ECCE		ICCE	
	N	%	n	%	n	%	n	%	n	%	n	%
All Centres	2159	100.0	2055	95.2	54	2.5	1	0.0	45	2.1	3	0.1
KK-KKM Johor	93	100.0	90	96.8	1	1.1	0	0.0	2	2.2	0	0.0
KK-KKM Kedah	339	100.0	332	97.9	2	0.6	0	0.0	5	1.5	0	0.0
KK-KKM Kelantan	62	100.0	34	54.8	26	41.9	0	0.0	2	3.2	0	0.0
KK-KKM Neg. Sembilan	220	100.0	206	93.6	1	0.5	1	0.5	11	5.0	1	0.5
KK-KKM Pahang	119	100.0	108	90.8	8	6.7	0	0.0	3	2.5	0	0.0
KK-KKM Pulau Pinang	84	100.0	80	95.2	2	2.4	0	0.0	2	2.4	0	0.0
KK-KKM Sabah	275	100.0	262	95.3	7	2.5	0	0.0	5	1.8	1	0.4
KK-KKM Sarawak	917	100.0	898	97.9	4	0.4	0	0.0	13	1.4	1	0.1
KK-KKM Terengganu	50	100.0	45	90.0	3	6.0	0	0.0	2	4.0	0	0.0

Type of Cataract Surgery												
2017	All Surgeries		Phaco		ECCE		Lens Aspiration		Phaco Converted to ECCE		ICCE	
	N	%	n	%	n	%	n	%	n	%	n	%
All Centres	2993	100.0	2789	93.2	183	6.1	4	0.1	-	-	9	0.3
KK-KKM Johor	33	100.0	33	100.0	0	0.0	0	0.0	-	-	0	0.0
KK-KKM Pulau Pinang	90	100.0	88	97.8	1	1.1	0	0.0	-	-	0	0.0
KK-KKM Sarawak	885	100.0	865	97.7	16	1.8	0	0.0	-	-	3	0.3
KK-KKM Sabah	480	100.0	450	93.8	24	5.0	2	0.4	-	-	2	0.4
KK-KKM Neg. Sembilan	444	100.0	416	93.7	19	4.3	2	0.5	-	-	3	0.7
KK-KKM Pahang	294	100.0	274	93.2	20	6.8	0	0.0	-	-	0	0.0
KK-KKM Terengganu	277	100.0	247	89.2	30	10.8	0	0.0	-	-	0	0.0
KK-KKM Kedah	352	100.0	311	88.4	41	11.6	0	0.0	-	-	0	0.0
KK-KKM Kelantan	138	100.0	105	76.1	32	23.2	0	0.0	-	-	1	0.7

Type of Cataract Surgery												
2018	All Surgeries		Phaco		ECCE		Lens Aspiration		Phaco Converted to ECCE		ICCE	
	N	%	n	%	n	%	n	%	n	%	n	%
All Centres	2692	100.0	2466	91.6	136	5.1	6	0.2	-	-	20	0.7
KK-KKM Neg. Sembilan	720	100.0	673	93.5	28	3.9	1	0.1	-	-	11	1.5
KK-KKM Sarawak	572	100.0	535	93.5	16	2.8	0	0.0	-	-	1	0.2
KK-KKM Sabah	590	100.0	543	92.0	24	4.1	4	0.7	-	-	6	1.0
KK-KKM Pahang	169	100.0	155	91.7	14	8.3	0	0.0	-	-	0	0.0
KK-KKM Terengganu	167	100.0	153	91.6	12	7.2	1	0.6	-	-	1	0.6
KK-KKM Kedah	279	100.0	245	87.8	10	3.6	0	0.0	-	-	0	0.0
KK-KKM Kelantan	195	100.0	162	83.1	32	16.4	0	0.0	-	-	1	0.5

Table 2.3.5-3: Distribution of Phacoemulsification by SDP, CSR 2013-2018

Years	2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	121	86.4	934	94.2	1608	94.4	2055	95.2	2789	93.2	2466	91.6
KK-KKM Neg. Sembilan	-	-	-	-	3	75.0	206	93.6	416	93.7	673	93.5
KK-KKM Sarawak	74	97.4	812	97.2	1096	96.9	898	97.9	865	97.7	535	93.5
KK-KKM Sabah	-	-	-	-	107	81.7	262	95.3	450	93.8	543	92.0
KK-KKM Pahang	47	73.4	-	-	161	86.1	108	90.8	274	93.2	155	91.7
KK-KKM Terengganu	-	-	28	84.2	30	75.0	45	90.0	247	89.2	153	91.6
KK-KKM Kedah	-	-	-	-	209	100.0	332	97.9	311	88.4	245	87.8
KK-KKM Kelantan	-	-	94	50.5	2	100.0	34	54.8	105	76.1	162	83.1
KK-KKM Johor	-	-	-	-	-	-	90	96.8	33	100.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	80	95.2	88	97.8	-	-

Table 2.3.5-4: Distribution of ECCE by SDP, CSR 2013-2018

Years	2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%
All Centres	12	8.6	100	3.6	57	3.3	54	2.5	183	6.1	136	5.1
KK-KKM Kelantan	-	-	82	44.1	0	0.0	26	41.9	32	23.2	32	16.4
KK-KKM Pahang	11	17.2	-	-	17	9.1	8	6.7	20	6.8	14	8.3
KK-KKM Terengganu	-	-	10	15.8	9	22.5	3	6.0	30	10.8	12	7.2
KK-KKM Sabah	-	-	-	-	18	13.7	7	2.5	24	5.0	24	4.1
KK-KKM Neg. Sembilan	-	-	-	-	0	0.0	1	0.5	19	4.3	28	3.9
KK-KKM Kedah	-	-	-	-	0	0.0	2	0.6	41	11.6	10	3.6
KK-KKM Sarawak	1	1.3	8	1.4	13	1.1	4	0.4	16	1.8	16	2.8
KK-KKM Johor	-	-	-	-	-	-	1	1.1	0	0.0	-	-
KK-KKM Pulau Pinang	-	-	-	-	-	-	2	2.4	1	1.1	-	-

2.3.6 Anaesthesia in Cataract Surgery

Table 2.3.6-1: Types of Anaesthesia, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
General Anesthesia	0	0.0	4	0.4	4	0.2	4	0.2	14	0.5	26	1.0
Local Anesthesia	139	99.3	1042	98.8	1689	99.1	2149	99.5	2904	97.0	2614	97.1
Type of local anaesthesia												
Topical	90	64.7	879	84.4	1549	91.7	1903	88.6	2610	89.9	2408	92.1
Combined local anaesthesia	13	9.4	6	0.6	99	5.9	181	8.4	596	20.5	1232	47.1
Intracameral	3	2.2	5	0.5	38	2.2	148	6.9	585	20.1	1221	46.7
Subtenon	52	37.4	153	14.7	150	8.9	254	11.8	294	10.1	280	10.7
Peribulbar	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	2	0.1
Subconjunctival	0	0.0	2	0.2	0	0.0	19	0.9	8	0.3	3	0.1
Retrobulbar	3	2.2	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0
Facial block	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Types of sedation for patients under local anaesthesia												
No sedation	39	28.1	582	55.9	924	54.7	1194	55.6	1627	56.0	1188	45.4
Oral sedation alone	9	6.5	0	0.0	1	0.1	34	1.6	2	0.1	2	0.1
Intravenous alone	1	0.7	0	0.0	1	0.1	1	0.0	4	0.1	1	0.0
Intravenous plus oral	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Intramuscular alone	17	12.2	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0

Table 2.3.6-2: Types of Anaesthesia in Patients 50 years and above, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	135		1024		1672		2100		2906		2618	
	n	%	n	%	n	%	n	%	n	%	n	%
General Anesthesia	0	0.0	4	0.4	4	0.2	4	0.2	9	0.3	23	0.9
Local Anesthesia	134	99.3	1011	98.7	1658	99.2	2090	99.5	2826	97.2	2547	97.3
Type of local anaesthesia												
Topical	89	66.4	855	84.6	1520	91.7	1852	88.6	2537	89.8	2346	92.1
Combined local anaesthesia	13	9.7	6	0.6	97	5.9	178	8.5	583	20.6	1198	47.0
Intracameral	3	2.2	5	0.5	36	2.2	142	6.8	571	20.2	1190	46.7
Subtenon	49	36.6	148	14.6	148	8.9	249	11.9	292	10.3	269	10.6
Peribulbar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
Subconjunctival	0	0.0	2	0.2	0	0.0	19	0.9	7	0.2	3	0.1
Retrobulbar	2	1.5	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0
Facial block	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Types of sedation for patients under local anaesthesia												
No sedation	38	28.4	566	56.0	905	54.6	1162	55.6	1589	56.2	1156	45.4
Oral sedation alone	9	6.7	0	0.0	1	0.1	32	1.5	2	0.1	2	0.1
Intravenous alone	1	0.7	0	0.0	1	0.1	1	0.0	4	0.1	1	0.0
Intravenous plus oral	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Intramuscular alone	16	11.9	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0

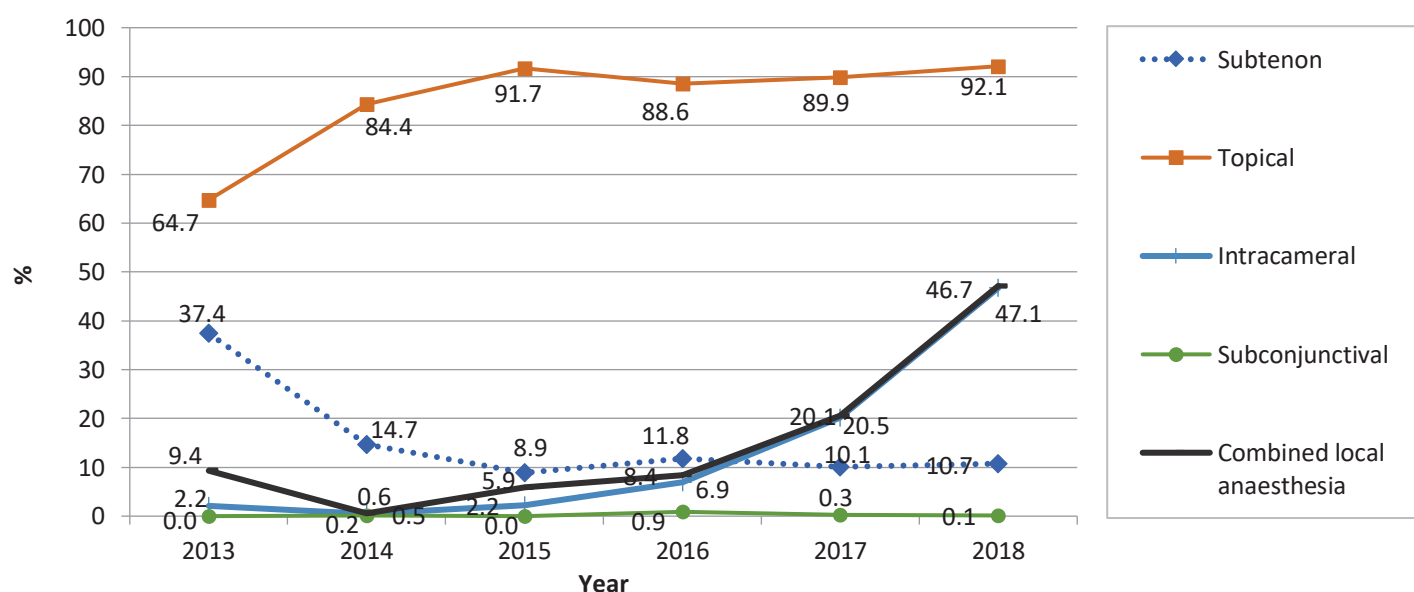


Table 2.3.6-3: Types of Anaesthesia, CSR 2013-2018

2.3.7 Intraocular Lens Implantation

Table 2.3.7-1: Intraocular Lens Implantation, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
With IOL	139	99.3	1026	97.3	1678	98.5	2133	98.8	2947	98.5	2644	98.2
Without IOL	1	0.7	29	2.7	26	1.5	26	1.2	46	1.5	48	1.8
Not Available	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
IOL Placement												
No of IOL	139		1026		1678		2133		2947		2644	
PCIOL	131	94.2	974	94.9	1628	97.0	2092	98.1	2826	95.9	2552	96.5
ACIOL	4	2.9	4	0.4	23	1.4	21	1.0	44	1.5	47	1.8
Scleral Fixated IOL	0	0.0	0	0.0	0	0.0	0	0.0	6	0.2	6	0.2
Others	0	0.0	3	0.3	0	0.0	3	0.1	13	0.4	10	0.4
Not Available /missing	4	2.9	45	4.4	27	1.6	17	0.8	58	2.0	29	1.1
Materials of IOL												
No of IOL	139		1026		1678		2133		2947		2644	
1. Acrylic	123	88.5	987	96.2	1598	95.2	2078	97.4	2706	91.8	2417	91.4
2. PMMA	16	11.5	23	2.2	63	3.8	41	1.9	129	4.4	177	6.7
3. Silicone	0	0.0	1	0.1	1	0.1	1	0.0	30	1.0	0	0.0
4. Others	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	2	0.1
Not Available/missing	0	0.0	15	1.5	16	1.0	13	0.6	81	2.7	48	1.8
Types of IOL												
No of IOL	139		1026		1678		2133		2947		2644	
1. Foldable	121	87.1	1008	98.2	1623	96.7	2092	98.1	2884	97.9	2561	96.9
2. Non-foldable	18	12.9	14	1.4	50	3.0	38	1.8	61	2.1	82	3.1
Not Available/missing	0	0.0	4	0.4	5	0.3	3	0.1	2	0.1	1	0.0

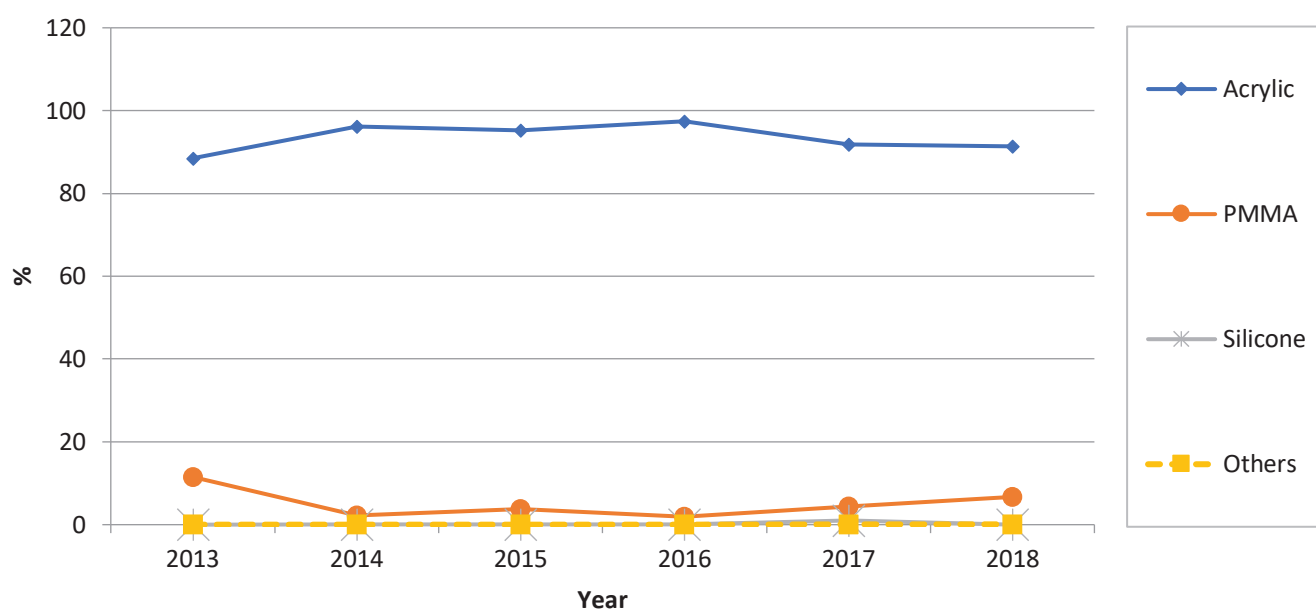


Table 2.3.7-2: Intraocular Lens Implantation, CSR 2013-2018

Table 2.3.7-3: Distribution of IOL Placement, CSR 2013-2018

Cataract Surgery With IOL																					
	2013						2014						2015								
	N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL		N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL		N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL	
		n	%	n	%	n	%		n	%	n	%	n	%		n	%	n	%	n	%
All Centres	139	131	94.2	4	2.9	0	0.0	1026	974	94.9	4	0.4	0	0.0	1678	1628	97.0	23	1.4	0	0.0
KK-KKM Johor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Kedah	-	-	-	-	-	-	-	-	-	-	-	-	-	209	206	98.6	1	0.5	0	0.0	
KK-KKM Kelantan	-	-	-	-	-	-	-	185	174	94.1	4	2.2	0	0.0	2	2	100.0	0	0.0	0	0.0
KK-KKM Neg. Sembilan	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	100.0	0	0.0	0	0.0	
KK-KKM Pahang	64	58	90.6	3	4.7	0	0.0	-	-	-	-	-	-	184	175	95.1	6	3.3	0	0.0	
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KK-KKM Sabah	-	-	-	-	-	-	-	-	-	-	-	-	-	129	115	89.1	3	2.3	0	0.0	
KK-KKM Sarawak	75	73	97.3	1	1.3	0	0.0	805	766	95.2	0	0.0	0	0.0	1110	1089	98.1	12	1.1	0	0.0
KK-KKM Terengganu	-	-	-	-	-	-	-	36	34	94.4	0	0.0	0	0.0	40	37	92.5	1	2.5	0	0.0

Cataract Surgery With IOL																					
	2016						2017						2018								
	N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL		N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL		N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL	
		n	%	n	%	n	%		n	%	n	%	n	%		n	%	n	%	n	%
All Centres	2133	2092	98.1	21	1.0	0	0.0	2947	2826	95.9	44	1.5	6	0.2	2644	2552	96.5	47	1.8	6	0.2
KK-KKM Johor	93	92	98.9	1	1.1	0	0.0	33	28	84.8	0	0.0	0	0.0	-	-	-	-	-	-	-
KK-KKM Kedah	334	332	99.4	2	0.6	0	0.0	347	341	98.3	5	1.4	0	0.0	273	267	97.8	0	0.0	0	0.0
KK-KKM Kelantan	61	60	98.4	1	1.6	0	0.0	136	127	93.4	2	1.5	0	0.0	194	187	96.4	5	2.6	0	0.0

KK-KKM Neg. Sembilan	217	207	95.4	4	1.8	0	0.0	437	397	90.8	10	2.3	5	1.1	702	670	95.4	17	2.4	5	0.7
KK-KKM Pahang	119	110	92.4	5	4.2	0	0.0	291	278	95.5	6	2.1	0	0.0	167	160	95.8	4	2.4	0	0.0
KK-KKM Pulau Pinang	83	83	100.0	0	0.0	0	0.0	88	86	97.7	2	2.3	0	0.0	-	-	-	-	-	-	-
KK-KKM Sabah	274	268	97.8	2	0.7	0	0.0	467	436	93.4	11	2.4	1	0.2	580	556	95.9	14	2.4	0	0.0
KK-KKM Sarawak	903	895	99.1	6	0.7	0	0.0	873	867	99.3	3	0.3	0	0.0	562	553	98.4	2	0.4	1	0.2
KK-KKM Terengganu	49	45	91.8	0	0.0	0	0.0	275	266	96.7	5	1.8	0	0.0	166	159	95.8	5	3.0	0	0.0

2.4 Intra-operative Complications

2.4.1 Intra-operative Complications

Table 2.4.1-1: Distribution of Type of Intra-operative Complications, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
Patient with intra-op complication	10	7.1	52	4.9	84	4.9	84	3.9	186	6.2	205	7.6
Types of complications												
PCR	2	1.4	28	2.7	47	2.8	43	2.0	94	3.1	100	3.7
Vitreous loss	3	2.1	11	1.0	17	1.0	26	1.2	45	1.5	62	2.3
Zonular dehiscence	2	1.4	7	0.7	15	0.9	23	1.1	48	1.6	70	2.6
Drop nucleus	0	0.0	4	0.4	3	0.2	1	0.0	5	0.2	7	0.3
Suprachoroidal haemorrhage	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	2	0.1
Central corneal oedema	0	0.0	0	0.0	2	0.1	1	0.0	2	0.1	8	0.3
Others	6	4.3	12	1.1	22	1.3	21	1.0	56	1.9	51	1.9

Table 2.4.1-2: Distribution of Type of Intra-operative Complications – Posterior Capsule Rupture, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients (N)	140		1055		1704		2159		2993		2692	
	n	%	n	%	n	%	n	%	n	%	n	%
Patient with intra-op complication	10	7.1	52	4.9	84	4.9	84	3.9	186	6.2	205	7.6
Types of complications												
PCR and Others	1	0.7	7	0.7	12	0.7	19	0.9	41	1.4	50	1.9
PCR Only	1	0.7	21	2.0	35	2.1	24	1.1	53	1.8	50	1.9

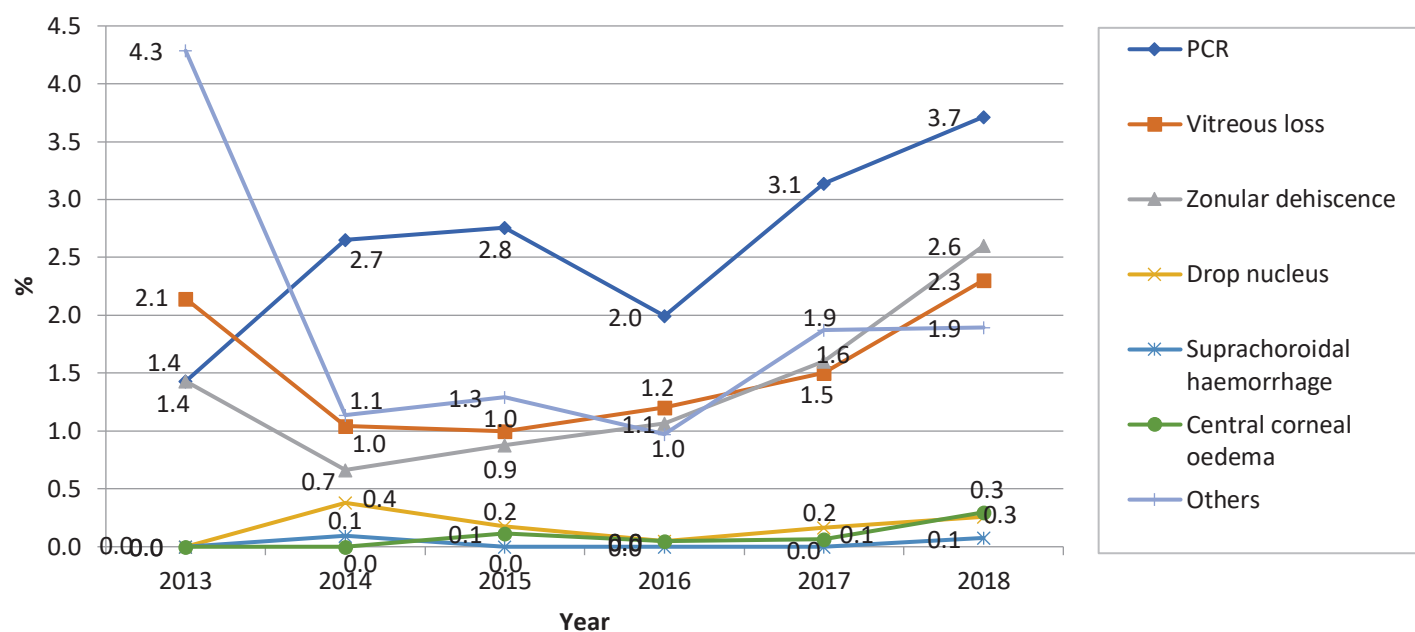


Table 2.4.1-3: Distribution of Specific Type of Intra-operative Complications, CSR 2013-2018

Table 2.4.1-4: Distribution of Types of Intra-operative Complications, CSR 2013-2018

Year	No. of patient s (N)	Any intra-op complicatio n		PCR		Vitreous loss		Zonular Dehiscenc e		Nucleus drop (or dropped nucleus)		Suprachoroid al Haemorrhage		Central Corneal Edema		Others	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2013																	
KK-KKM Pahang	64	10	15.6	2	3.1	3	4.7	2	3.1	0	0.0	0	0.0	0	0.0	6	9.4
KK-KKM Sarawak	76	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2014																	
KK-KKM Kelantan	186	13	7.0	8	4.3	6	3.2	1	0.5	0	0.0	0	0.0	0	0.0	4	2.2
KK-KKM Sarawak	831	35	4.2	20	2.4	5	0.6	5	0.6	4	0.5	1	0.1	0	0.0	5	0.6
KK-KKM Terengganu	38	4	10.5	0	0.0	0	0.0	1	2.6	0	0.0	0	0.0	0	0.0	3	7.9
2015																	
KK-KKM Kedah	209	4	1.9	2	1.0	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	3	1.4
KK-KKM Kelantan	2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Neg. Sembilan	4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Pahang	187	15	8.0	7	3.7	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	10	5.3
KK-KKM Sabah	131	12	9.2	2	1.5	5	3.8	6	4.6	1	0.8	0	0.0	2	1.5	3	2.3
KK-KKM Sarawak	1131	51	4.5	36	3.2	10	0.9	8	0.7	3	0.3	0	0.0	0	0.0	5	0.4
KK-KKM Terengganu	40	2	5.0	0	0.0	0	0.0	1	2.5	0	0.0	0	0.0	0	0.0	1	2.5
2016																	
KK-KKM Johor	93	1	1.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.1
KK-KKM Kedah	339	11	3.2	5	1.5	4	1.2	3	0.9	0	0.0	0	0.0	1	0.3	2	0.6
KK-KKM Kelantan	62	1	1.6	1	1.6	1	1.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Neg. Sembilan	220	19	8.6	7	3.2	9	4.1	6	2.7	0	0.0	0	0.0	0	0.0	7	3.2
KK-KKM Pahang	119	4	3.4	3	2.5	2	1.7	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8

KK-KKM Pulau Pinang	84	2	2.4	2	2.4	1	1.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KK-KKM Sabah	275	14	5.1	5	1.8	3	1.1	4	1.5	0	0.0	0	0.0	0	0.0	5	1.8
KK-KKM Sarawak	917	28	3.1	18	2.0	4	0.4	9	1.0	0	0.0	0	0.0	0	0.0	4	0.4
KK-KKM Terengganu	50	4	8.0	2	4.0	2	4.0	1	2.0	0	0.0	0	0.0	0	0.0	1	2.0
2017																	
KK-KKM Neg. Sembilan	444	44	9.9	21	4.7	7	1.6	13	2.9	1	0.2	0	0.0	2	0.5	12	2.7
KK-KKM Terengganu	277	26	9.4	12	4.3	4	1.4	4	1.4	0	0.0	0	0.0	0	0.0	10	3.6
KK-KKM Pahang	294	21	7.1	12	4.1	5	1.7	4	1.4	1	0.3	0	0.0	0	0.0	6	2.0
KK-KKM Sabah	480	35	7.3	17	3.5	9	1.9	8	1.7	0	0.0	0	0.0	0	0.0	15	3.1
KK-KKM Kelantan	138	7	5.1	4	2.9	3	2.2	1	0.7	0	0.0	0	0.0	0	0.0	2	1.4
KK-KKM Kedah	352	16	4.5	8	2.3	9	2.6	8	2.3	1	0.3	0	0.0	0	0.0	1	0.3
KK-KKM Pulau Pinang	90	6	6.7	2	2.2	3	3.3	3	3.3	0	0.0	0	0.0	0	0.0	1	1.1
KK-KKM Sarawak	885	31	3.5	18	2.0	5	0.6	7	0.8	2	0.2	0	0.0	0	0.0	9	1.0
KK-KKM Johor	33	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2018																	
KK-KKM Terengganu	167	17	10.2	8	4.8	5	3.0	5	3.0	0	0.0	1	0.6	0	0.0	7	4.2
KK-KKM Kelantan	195	12	6.2	9	4.6	6	3.1	4	2.1	1	0.5	0	0.0	0	0.0	0	0.0
KK-KKM Sabah	590	41	6.9	26	4.4	16	2.7	12	2.0	5	0.8	0	0.0	0	0.0	5	0.8
KK-KKM Neg. Sembilan	720	84	11.7	26	3.6	19	2.6	37	5.1	1	0.1	1	0.1	8	1.1	26	3.6
KK-KKM Pahang	169	11	6.5	6	3.6	5	3.0	4	2.4	0	0.0	0	0.0	0	0.0	3	1.8
KK-KKM Sarawak	572	26	4.5	17	3.0	6	1.0	5	0.9	0	0.0	0	0.0	0	0.0	5	0.9
KK-KKM Kedah	279	14	5.0	8	2.9	5	1.8	3	1.1	0	0.0	0	0.0	0	0.0	5	1.8

2.4.2 PCR

Table 2.4.2-1: PCR, CSR 2013-2018

Hospital	2013			2014			2015			2016			2017			2018		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
KK-KKM Terengganu	-	-	-	38	0	0.0	40	0	0.0	50	2	4.0	277	12	4.3	167	8	4.8
KK-KKM Kelantan	-	-	-	186	8	4.3	2	0	0.0	62	1	1.6	138	4	2.9	195	9	4.6
KK-KKM Sabah	-	-	-	-	-	-	131	2	1.5	275	5	1.8	480	17	3.5	590	26	4.4
KK-KKM Neg. Sembilan	-	-	-	-	-	-	4	0	0.0	220	7	3.2	444	21	4.7	720	26	3.6
KK-KKM Pahang	64	2	3.1	-	-	-	187	7	3.7	119	3	2.5	294	12	4.1	169	6	3.6
KK-KKM Sarawak	76	0	0.0	831	20	2.4	###	36	3.2	917	18	2.0	885	18	2.0	572	17	3.0
KK-KKM Kedah	-	-	-	-	-	-	209	2	1.0	339	5	1.5	352	8	2.3	279	8	2.9
KK-KKM Pulau Pinang	-	-	-	-	-	-	-	-	-	84	2	2.4	90	2	2.2	-	-	-
KK-KKM Johor	-	-	-	-	-	-	-	-	-	93	0	0.0	33	0	0.0	-	-	-

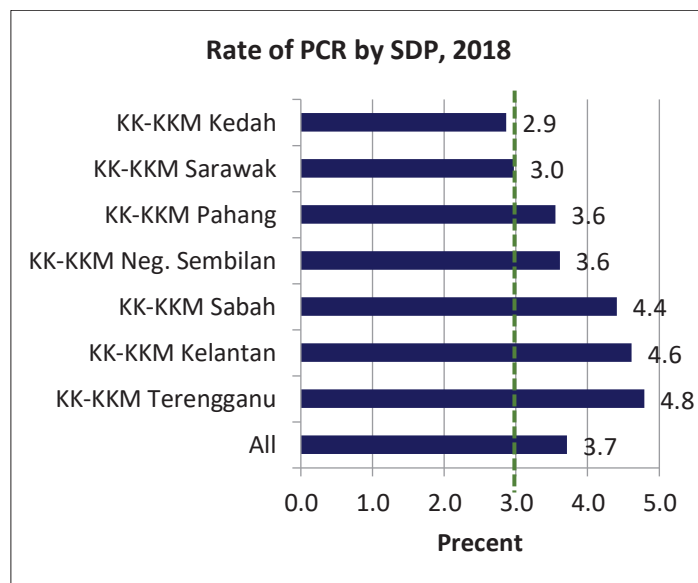
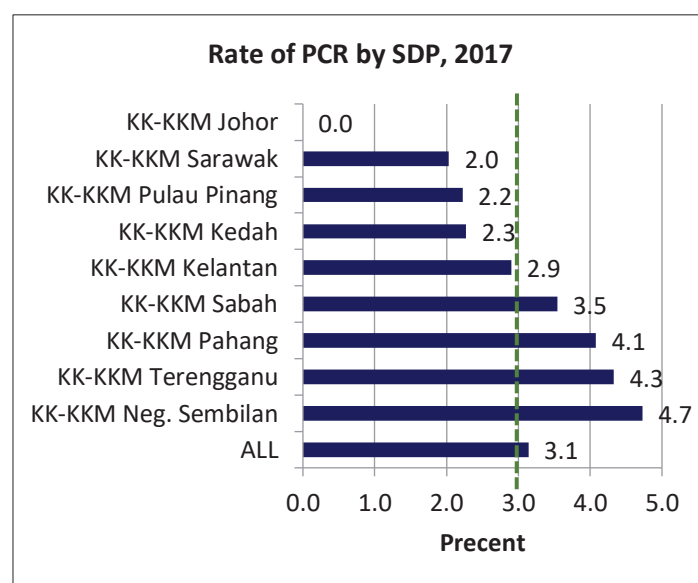
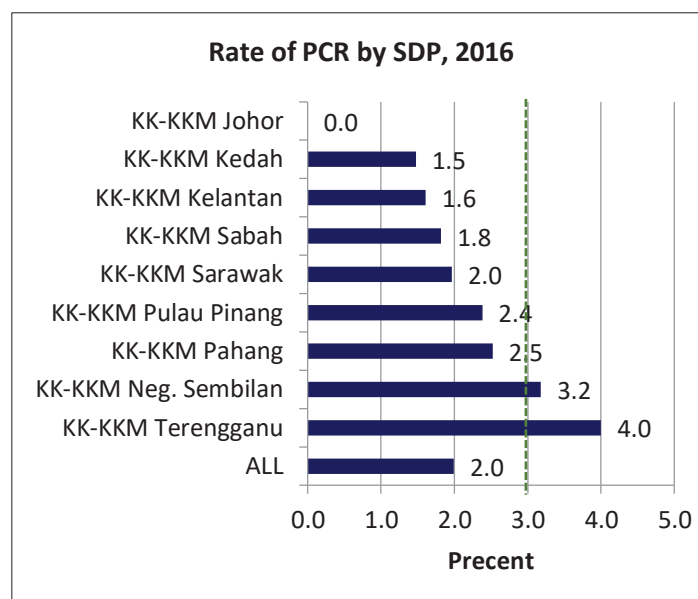
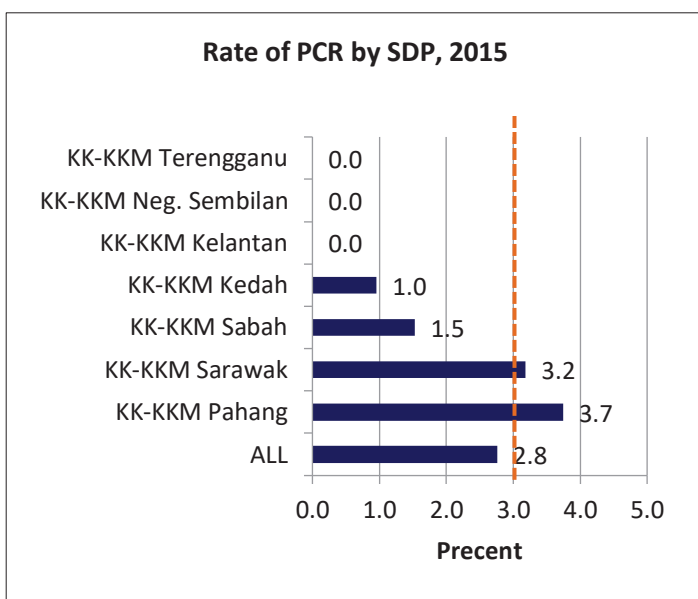
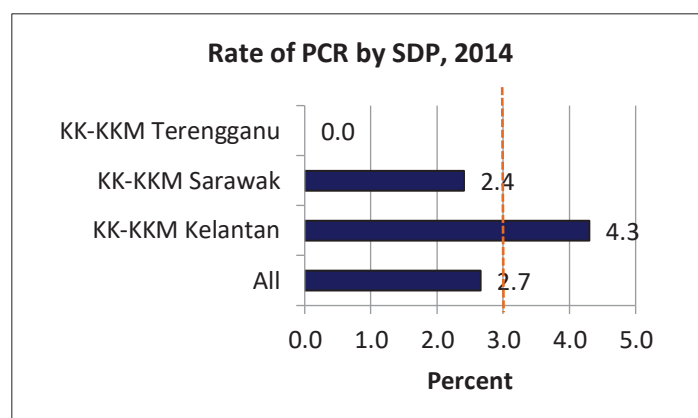
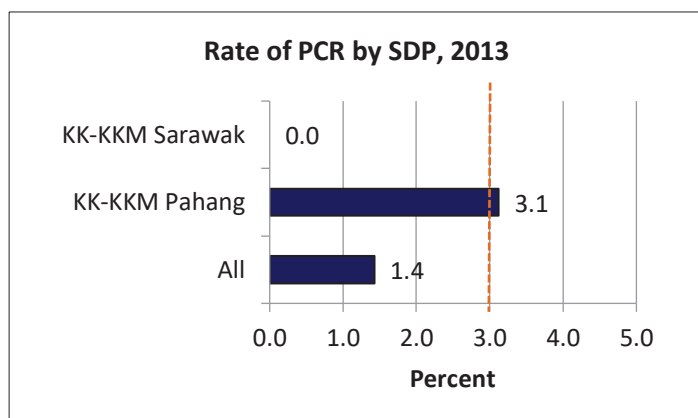


Table 2.4.2-2: PCR (all surgeries) (National standard set at <3.0%), CSR 2013-2018

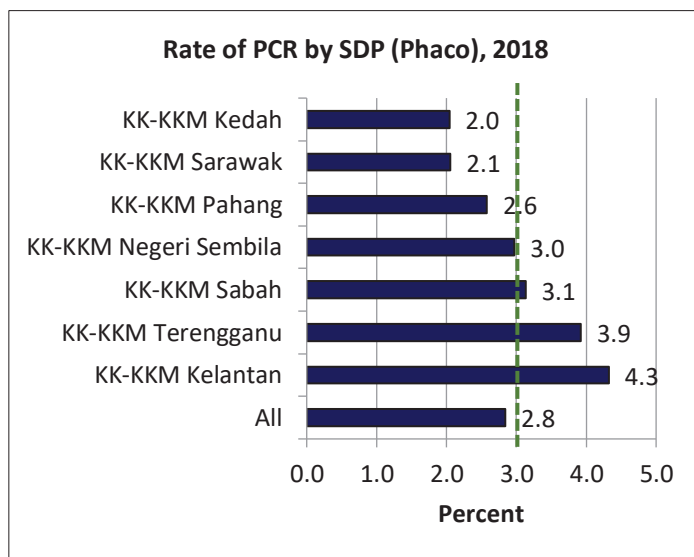
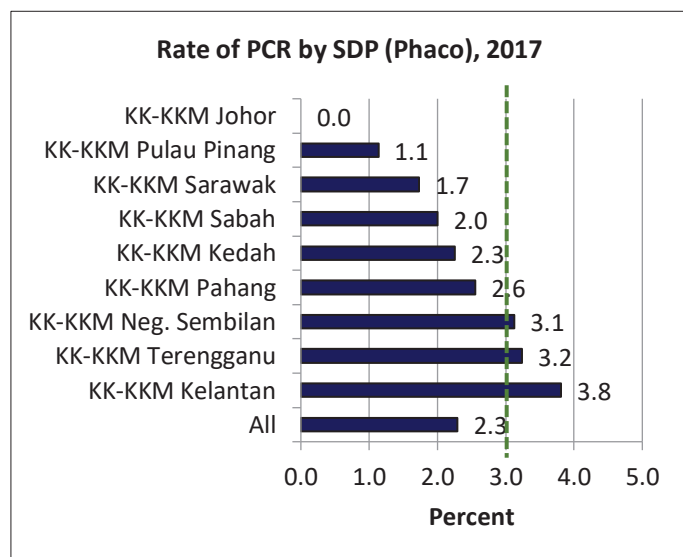
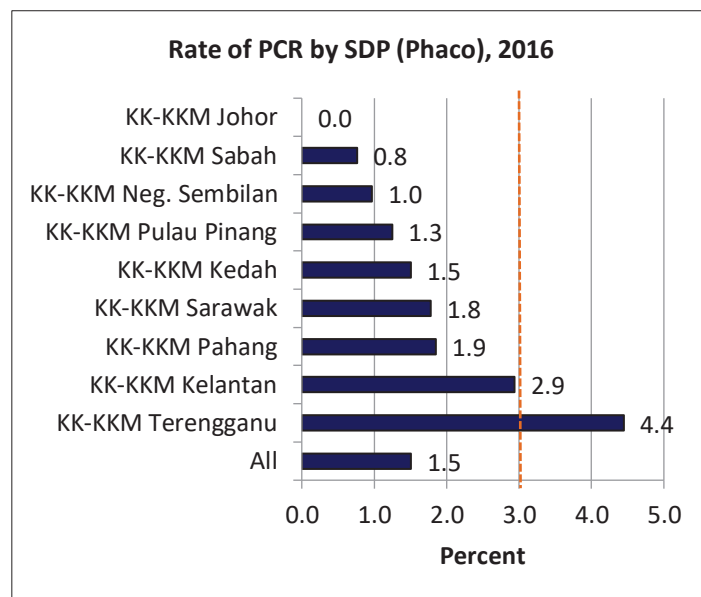
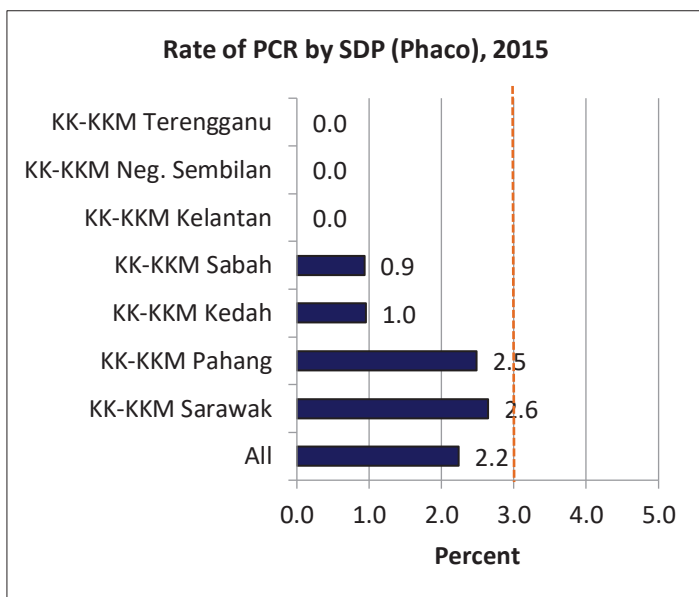
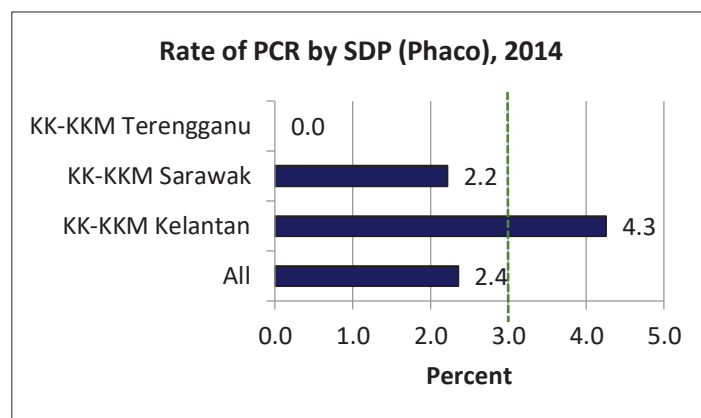
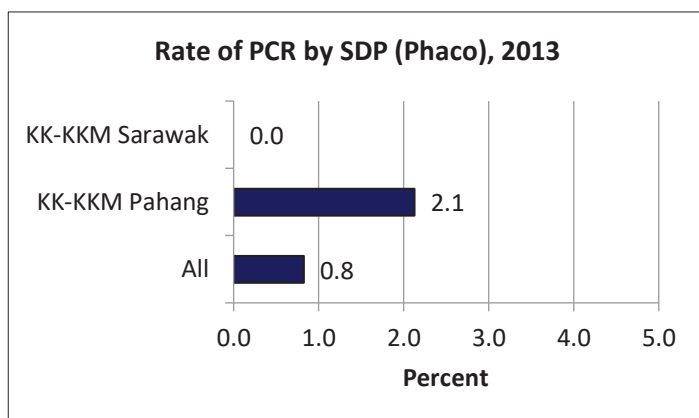


Table 2.4.2-3: PCR (Phaco only) (National standard set at <3.0%), CSR 2013-2018

2.4.3 PCR by Type of Cataract Surgery

Table 2.4.3-1: PCR by Type of Cataract Surgery, CSR 2013-2018

Year	2013			2014			2015			2016			2017			2018		
No. of patients	140			1055			1704			2159			2993			2692		
Total PCR	2			28			47			43			94			100		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Phaco	121	1	0.8	934	22	2.4	1608	36	2.2	2055	31	1.5	2789	64	2.3	2466	70	2.8
ECCE	12	0	0.0	100	3	3.0	57	2	3.5	54	2	3.7	183	28	15.3	136	26	19.1
Lens Aspiration	0	0	0.0	0	0	0.0	0	0	0.0	1	0	0.0	4	0	0.0	6	1	0.0
ICCE	1	0	0.0	1	0	0.0	4	0	0.0	3	0	0.0	9	0	0.0	20	0	0.0
Phaco converted to ECCE	6	1	16.7	18	3	16.7	35	9	25.7	45	10	22.2	-	-	-	-	-	-
SiCS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	1	1.7

2.5 Cataract Surgery Outcome

2.5.1 Post-operative Complications Record and Ascertainment

Table 2.5.1-1: Distribution of Cataract Surgery with Post-operative Complication Record, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Total number of cataract surgery registered to CSR	140	1055	1704	2159	2993	2692
Cataract surgery with post-operative complication record	115	981	1650	1935	2648	2130
Ascertainment on post-operative complication (%)	(82.1)	(93.0)	(96.8)	(89.6)	(88.5)	(79.1)
Cataract surgery with visual outcome record	98	863	1455	1765	2496	1981
Ascertainment on visual outcome (%)	(70.0)	(81.8)	(85.4)	(81.8)	(83.4)	(73.6)

2.5.2 Post-operative Infectious Endophthalmitis

Table 2.5.2-1: Post-operative Infectious Endophthalmitis, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Eyes with post-operative complication records (N)	115	981	1650	1935	2648	2130
Eyes with post-operative infectious endophthalmitis (n)	0	0	0	0	2	1
Percentage of eyes with post-operative endophthalmitis (%)	0.0	0.0	0.0	0.0	0.1	0.0

2.5.3 Post-operative Follow-up Period

Table 2.5.3-1: Median Follow-up Period for Eyes with Unaided Vision (in weeks) by Types of Surgery, CSR 2013-2018

Types of surgery	2013					2014				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	98	98	5	5	6	863	861	5	5	6
Phaco	88	88	5	4	6	799	797	5	5	6
ECCE	4	4	6	5.5	6	55	55	8	6	13
Phaco → ECCE	6	6	6	6	7	8	8	8.5	6.5	12
ICCE	0	0	-	-	-	0	0	-	-	-
Lens aspiration	0	0	-	-	-	0	0	-	-	-

Types of surgery	2015					2016				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	145 5	145 3	6	5	7	176 9	176 9	5	5	7
Phaco	138 3	138 1	6	5	7	169 4	169 4	5	4	6
ECCE	38	38	9	6	12	42	42	8.5	5	11
Phaco → ECCE	30	30	6.5	5	12	30	30	6	5	11
ICCE	4	4	8	5	11.5	1	1	11	11	11
Lens aspiration	0	0	0	0	0	1	1	3	3	3

Types of surgery	2017					2018				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	250 0	249 9	6	5	8	198 1	198 1	7	6	7
Phaco	234 2	234 1	6	5	7	182 3	182 3	7	6	7
ECCE	144	144	7	6	10	86	86	7	6	8
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-
ICCE	5	5	7	5	10	10	10	6.5	6	7
Lens aspiration	3	3	6	6	8	3	3	5	5	5
SICS	-	-	-	-	-	56	56	5	4	8

n = No. of available information

Table 2.5.3-2: Median Follow-up Period for Eyes with Refracted Vision (in weeks) by Types of Surgery, CSR 2013-2017

Types of surgery	2013					2014				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	99	99	6	5	6	843	841	5	5	6
Phaco	88	88	5	4	6	787	785	5	5	6
ECCE	4	4	6	5.5	6	48	48	9	6	13
Phaco → ECCE	6	6	6	6	7	7	7	9	6	12
ICCE	1	1	6	-	-	0	0	-	-	-
Lens aspiration	0	0	-	-	-	0	0	-	-	-

Types of surgery	2015					2016				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	139	139	6	5	7	170	170	5	5	7
Phaco	133	132	6	5	7	163	163	5	5	6
ECCE	35	35	9	6	12	42	42	8.5	5	11
Phaco → ECCE	28	28	6.5	5	12	29	29	6	5	11
ICCE	4	4	8	5	11.5	1	1	11	11	11
Lens aspiration	0	0	0	0	0	1	1	3	3	3

Types of surgery	2017					2018				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	238	238	6	5	8	194	194	7	6	7
Phaco	223	223	6	5	7	179	179	7	6	7
ECCE	133	133	7	6	10	84	84	7	6	8
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-
ICCE	5	5	7	5	10	10	10	6.5	6	7
Lens aspiration	3	3	6	6	8	3	3	5	5	5
SICS	-	-	-	-	-	52	52	5	4	8

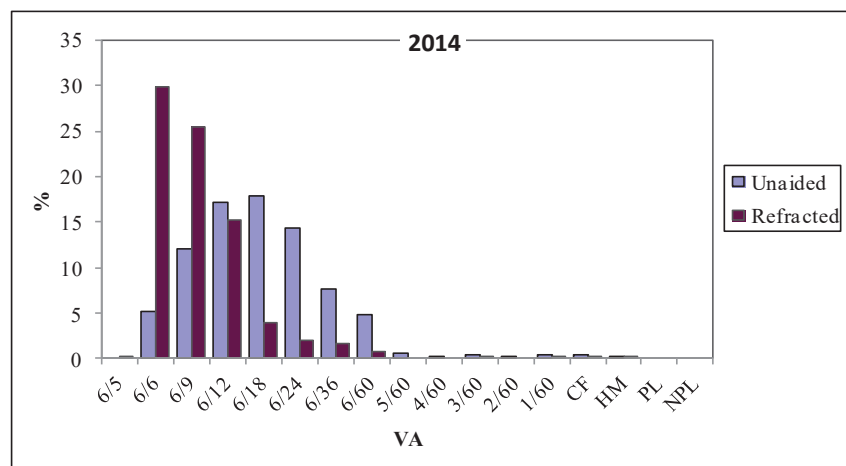
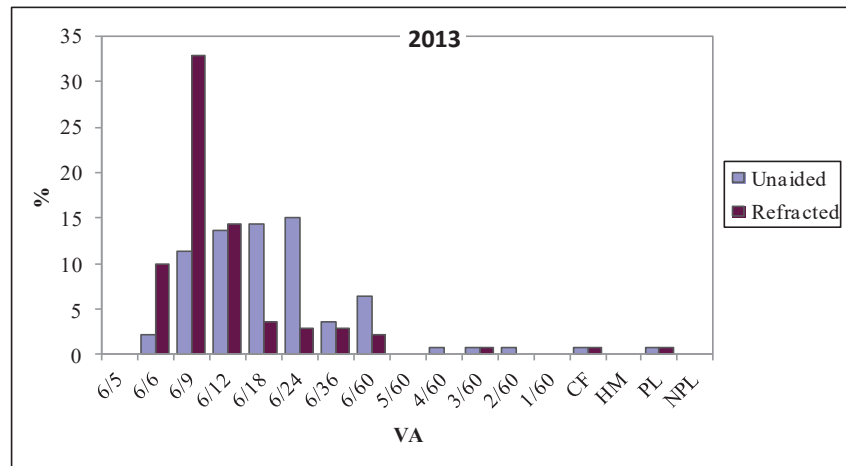
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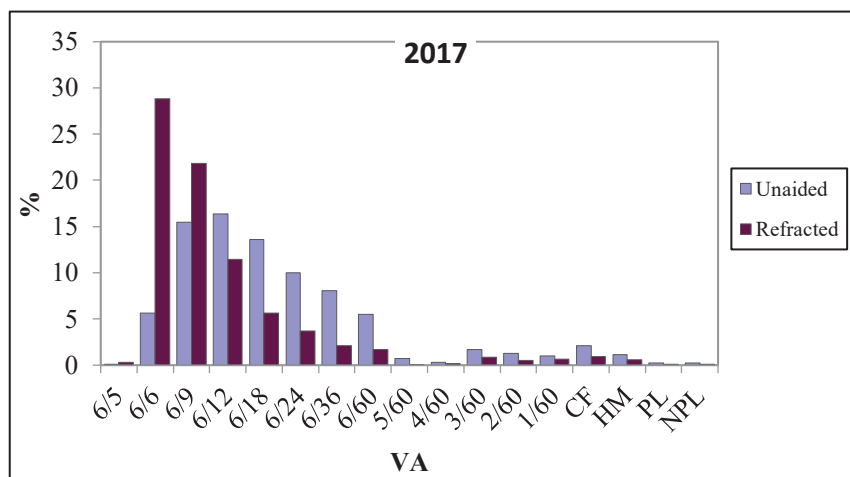
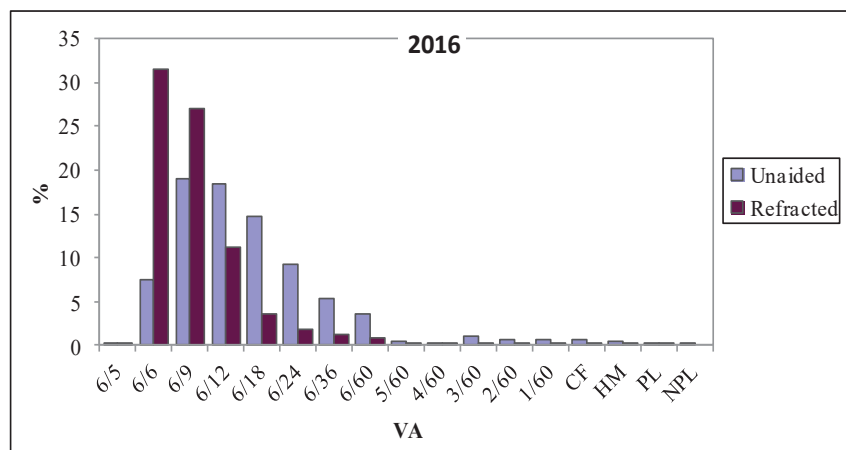
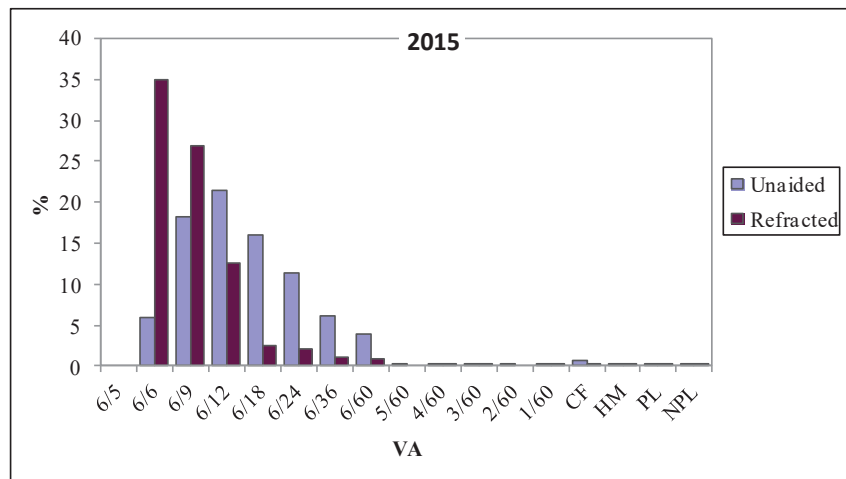
2.5.4 Post-operative Visual Acuity

Table 2.5.4-1: Post-operative Visual Acuity, All Eyes, CSR 2013-2018

Year	2013				2014				2015				2016				2017				2018			
	Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
6/5	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.0	2	0.1	4	0.1	9	0.3	5	0.2	3	0.1
6/6	3	2.1	14	10.0	54	5.1	315	29.9	101	5.9	597	35.0	160	7.4	682	31.6	168	5.6	863	28.8	148	5.5	757	28.1
6/9	16	11.4	46	32.9	128	12.1	268	25.4	310	18.2	458	26.9	410	19.0	584	27.0	462	15.4	653	21.8	378	14.0	448	16.6
6/12	19	13.6	20	14.3	182	17.3	161	15.3	367	21.5	214	12.6	396	18.3	243	11.3	490	16.4	343	11.5	369	13.7	284	10.5
6/18	20	14.3	5	3.6	189	17.9	42	4.0	273	16.0	44	2.6	319	14.8	78	3.6	406	13.6	168	5.6	322	12.0	127	4.7

6/24	21	15.0	4	2.9	151	14.3	22	2.1	195	11.4	34	2.0	199	9.2	40	1.9	300	10.0	111	3.7	236	8.8	63	2.3
6/36	5	3.6	4	2.9	81	7.7	17	1.6	105	6.2	18	1.1	117	5.4	28	1.3	241	8.1	64	2.1	172	6.4	67	2.5
6/60	9	6.4	3	2.1	51	4.8	8	0.8	66	3.9	15	0.9	76	3.5	16	0.7	164	5.5	50	1.7	134	5.0	42	1.6
5/60	0	0.0	0	0.0	6	0.6	0	0.0	2	0.1	0	0.0	9	0.4	2	0.1	21	0.7	2	0.1	9	0.3	3	0.1
4/60	1	0.7	0	0.0	2	0.2	0	0.0	3	0.2	3	0.2	5	0.2	2	0.1	10	0.3	5	0.2	9	0.3	3	0.1
3/60	1	0.7	1	0.7	5	0.5	2	0.2	5	0.3	2	0.1	21	1.0	6	0.3	51	1.7	26	0.9	32	1.2	16	0.6
2/60	1	0.7	0	0.0	1	0.1	0	0.0	4	0.2	0	0.0	15	0.7	3	0.1	39	1.3	16	0.5	30	1.1	29	1.1
1/60	0	0.0	0	0.0	5	0.5	3	0.3	6	0.4	4	0.2	14	0.6	6	0.3	30	1.0	19	0.6	25	0.9	12	0.4
CF	1	0.7	1	0.7	5	0.5	2	0.2	11	0.6	4	0.2	12	0.6	7	0.3	64	2.1	28	0.9	54	2.0	39	1.4
HM	0	0.0	0	0.0	3	0.3	2	0.2	4	0.2	2	0.1	9	0.4	6	0.3	34	1.1	17	0.6	39	1.4	35	1.3
PL	1	0.7	1	0.7	0	0.0	0	0.0	2	0.1	1	0.1	5	0.2	3	0.1	8	0.3	4	0.1	11	0.4	10	0.4
NPL	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1	1	0.0	0	0.0	8	0.3	4	0.1	8	0.3	8	0.3
Missing	42	30.0	41	29.3	192	18.2	212	20.1	249	14.6	307	18.0	390	18.1	451	20.9	493	16.5	611	20.4	711	26.4	746	27.7
Total	140	100	140	100	1055	100	1055	100	1704	100	1704	100	2159	100	2159	100	2993	100	2993	100	2692	100	2692	100





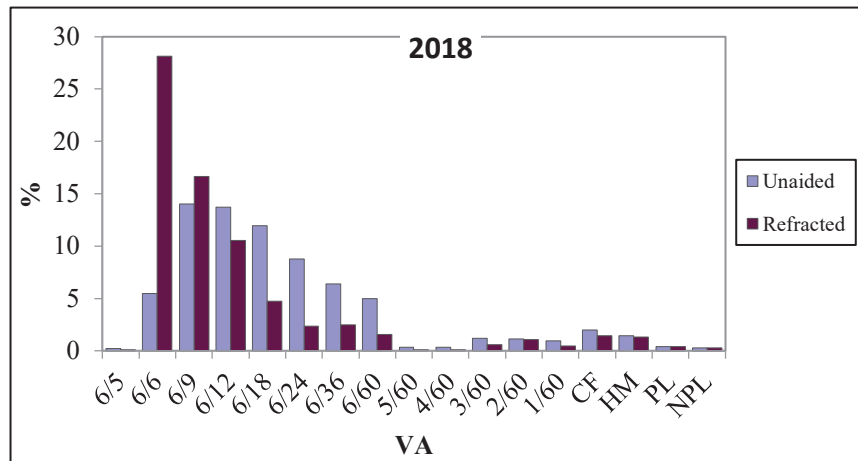
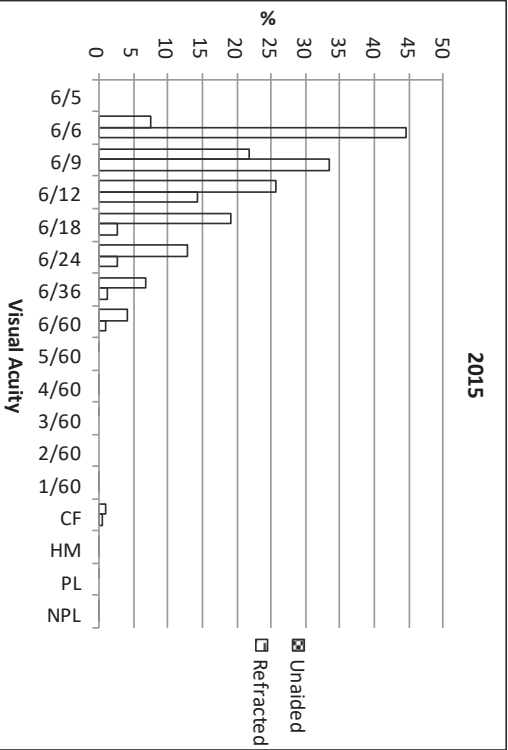
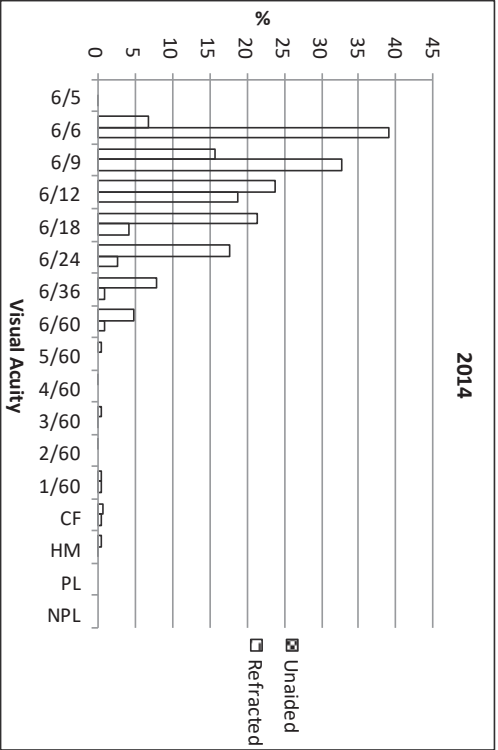
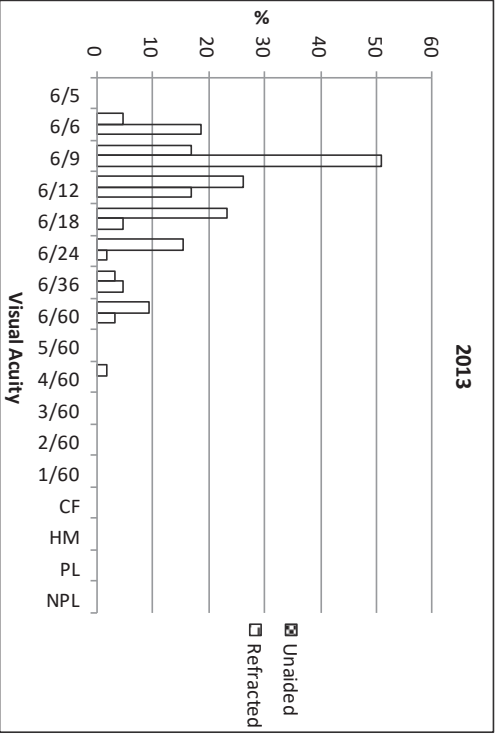


Figure 2.5.4-1: Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2013-2018

Table 2.5.4-2: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
	Unaided	Refracted	Unaided	Refracted	Unaided	Refracted	Unaided	Refracted	Unaided	Refracted	Unaided	Refracted
VA	n	%	n	%	n	%	n	%	n	%	n	%
6/5	0	0.0	0	0.0	1	0.2	0	0.0	1	0.1	3	0.1
6/6	3	4.6	12	18.5	45	6.7	254	39.0	94	7.5	536	44.4
6/9	11	16.9	33	50.8	105	15.7	212	32.6	273	21.9	402	33.3
6/12	17	26.2	11	16.9	158	23.7	122	18.7	321	25.7	173	14.3
6/18	15	23.1	3	4.6	142	21.3	27	4.1	239	19.2	32	2.7
6/24	10	15.4	1	1.5	117	17.5	17	2.6	161	12.9	30	2.5
6/36	2	3.1	3	4.6	52	7.8	6	0.9	85	6.8	14	1.2
6/60	6	9.2	2	3.1	32	4.8	6	0.9	52	4.2	10	0.8
5/60	0	0.0	0	0.0	3	0.4	0	0.0	2	0.2	0	0.0
4/60	1	1.5	0	0.0	1	0.1	0	0.0	3	0.2	2	0.2
3/60	0	0.0	0	0.0	2	0.3	1	0.2	2	0.2	0	0.0
2/60	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	11	0.8
1/60	0	0.0	0	0.0	3	0.4	2	0.3	3	0.2	1	0.1
CF	0	0.0	0	0.0	4	0.6	2	0.3	10	0.8	4	0.3
HM	0	0.0	0	0.0	2	0.3	1	0.2	1	0.1	3	0.2
PL	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
NPL	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1	1	0.1
Total	65	100	65	100	667	100	651	100	1248	100	1206	100



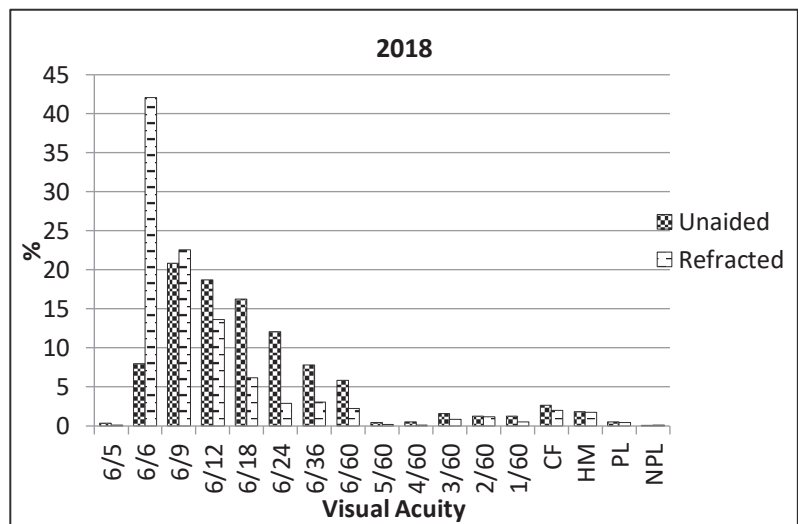
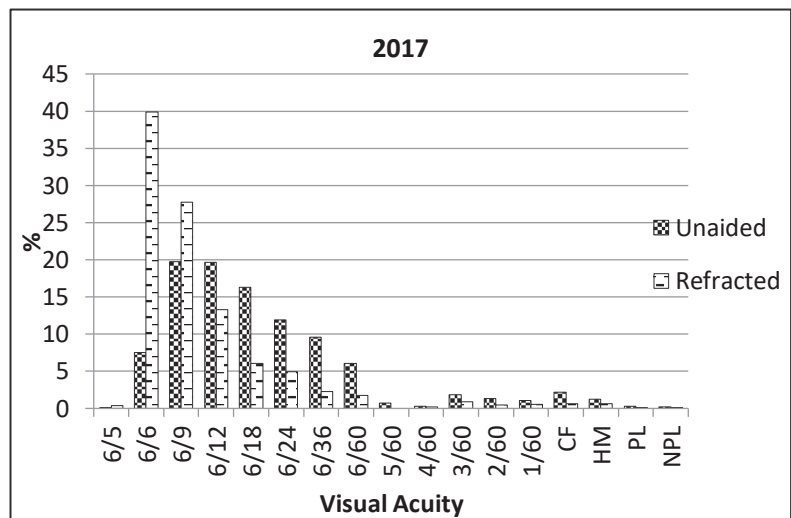
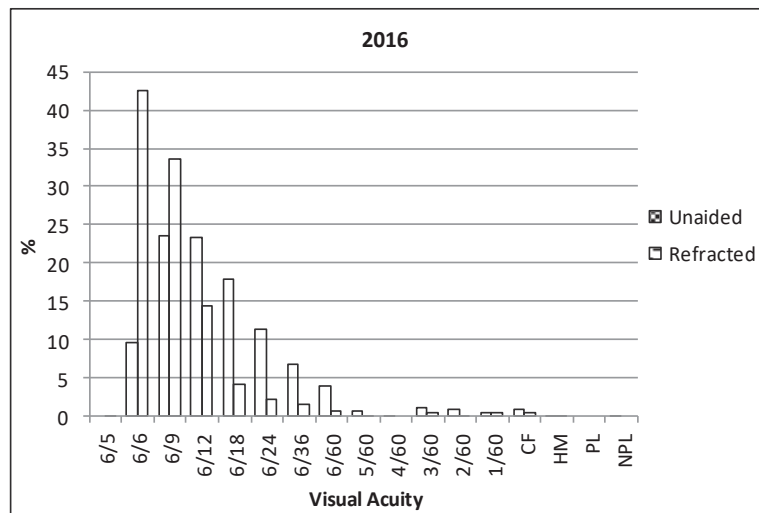


Figure 2.5.4-2: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013-2018

2.5.5 Post-operative Visual Acuity 6/12 or Better Among Eyes without Ocular Co-morbidity

Table 2.5.5-1: Post-operative Visual Acuity 6/12 or Better for Eyes without Ocular Co-morbidities by Types of Surgery, CSR 2013-2018

	2013						2014					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	65	31	47.7	65	56	86.2	667	308	46.2	651	589	90.5
Phaco	60	30	50.0	60	54	90.0	622	292	46.9	612	555	90.7
ECCE	2	1	50.0	2	1	50.0	40	13	32.5	35	31	88.6
Phaco → ECCE	3	0	0.0	3	1	33.3	4	2	50.0	3	2	66.67
Lens Aspiration	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
ICCE	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0

	2015						2016					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	1248	688	55.1	1206	1111	92.1	1428	804	56.3	1385	1255	90.6
Phaco	1189	679	57.1	1150	1072	93.2	1375	786	57.2	1332	1219	91.5
ECCE	30	8	26.7	28	21	75.0	33	12	36.4	33	22	66.7
Phaco → ECCE	26	1	3.8	28	16	57.1	18	5	27.8	18	13	72.2
Lens Aspiration	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
ICCE	3	0	0.0	3	2	66.7	1	1	100.0	1	1	100.0

	2017						2018					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	2002	942	47.1	1925	1565	81.3	1547	741	47.9	1522	1193	78.4
Phaco	1900	920	48.4	1830	1506	82.3	1447	706	48.8	1426	1133	79.5
ECCE	97	21	21.6	90	56	62.2	44	8	18.2	42	18	42.9
Lens Aspiration	1	1	100.0	1	1	100.0	2	2	100.0	2	2	100.0
ICCE	2	0	0.0	2	1	50.0	5	1	20.0	5	3	60.0
SICS	-	-	-	-	-	-	47	22	46.81	46	36	78.26
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-	-	-

Table 2.5.5-2 Post-operative Visual Acuity 6/18 or Better for Eyes without Ocular Co-morbidities by Types of Surgery, CSR 2013-2018 (WHO classification)

	2013						2014					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	65	46	70.8	65	59	90.8	667	450	67.5	651	616	94.6
Phaco	60	45	75.0	60	56	93.3	622	425	68.3	612	580	94.8
ECCE	2	1	50.0	2	2	100.0	40	22	55.0	35	33	94.3
Phaco → ECCE	3	0	0.0	3	1	33.3	4	2	50.0	3	2	66.67
Lens Aspiration	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0

ICCE	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
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	2015						2016					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	1248	927	74.3	1206	1143	94.8	1428	1060	74.2	1385	1312	94.7
Phaco	1189	909	76.5	1150	1097	95.4	1375	1037	75.4	1332	1271	95.4
ECCE	30	13	43.3	28	23	82.1	33	17	51.5	33	26	78.8
Phaco → ECCE	26	4	15.4	28	20	71.4	18	5	27.8	18	14	77.8
Lens Aspiration	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
ICCE	3	1	33.3	3	3	100.0	1	1	100.0	1	1	100.0

	2017						2018					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	2002	1269	63.4	1925	1682	87.4	1547	993	64.2	1522	1287	84.6
Phaco	1900	1232	64.8	1830	1612	88.1	1447	945	65.3	1426	1217	85.3
ECCE	97	35	36.1	90	66	73.3	44	11	25.0	42	26	61.9
Lens Aspiration	1	1	100.0	1	1	100.0	2	2	100.0	2	2	100.0
ICCE	2	0	0.0	2	1	50.0	5	2	40.0	5	4	80.0
SICS	-	-	-	-	-	-	47	31	65.96	46	37	80.43
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-	-	-

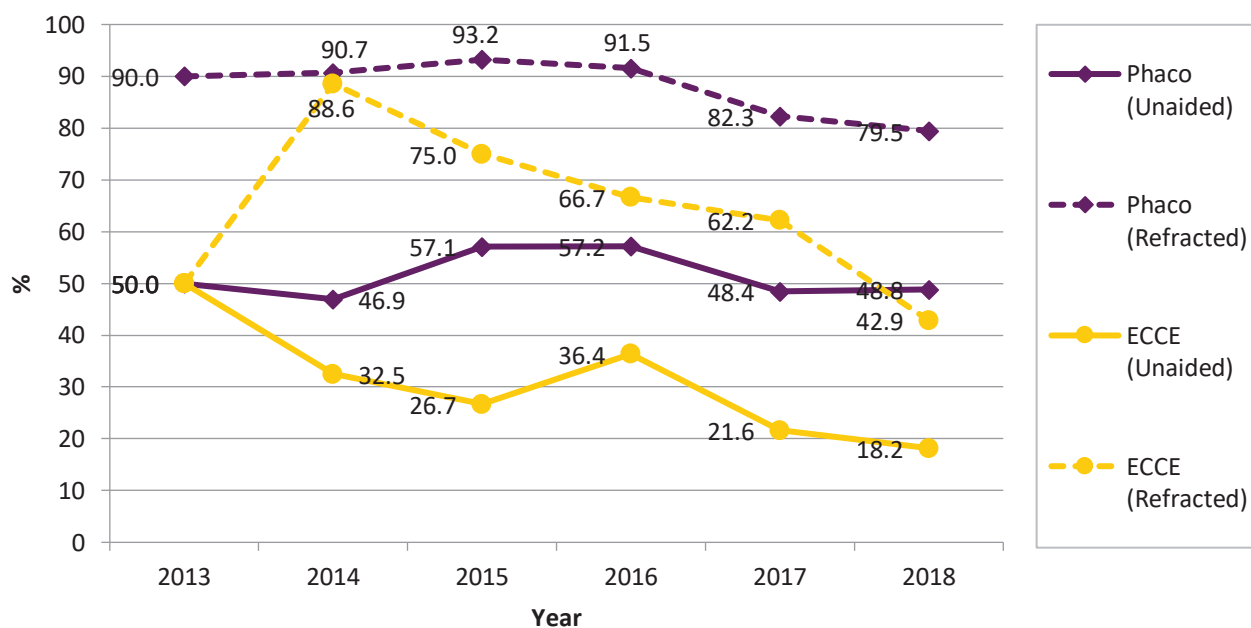


Figure 2.5.5-1: Post-operative Visual Acuity 6/12 or Better for Eyes without Ocular Co-morbidities by ECCE and Phaco, CSR 2013-2018

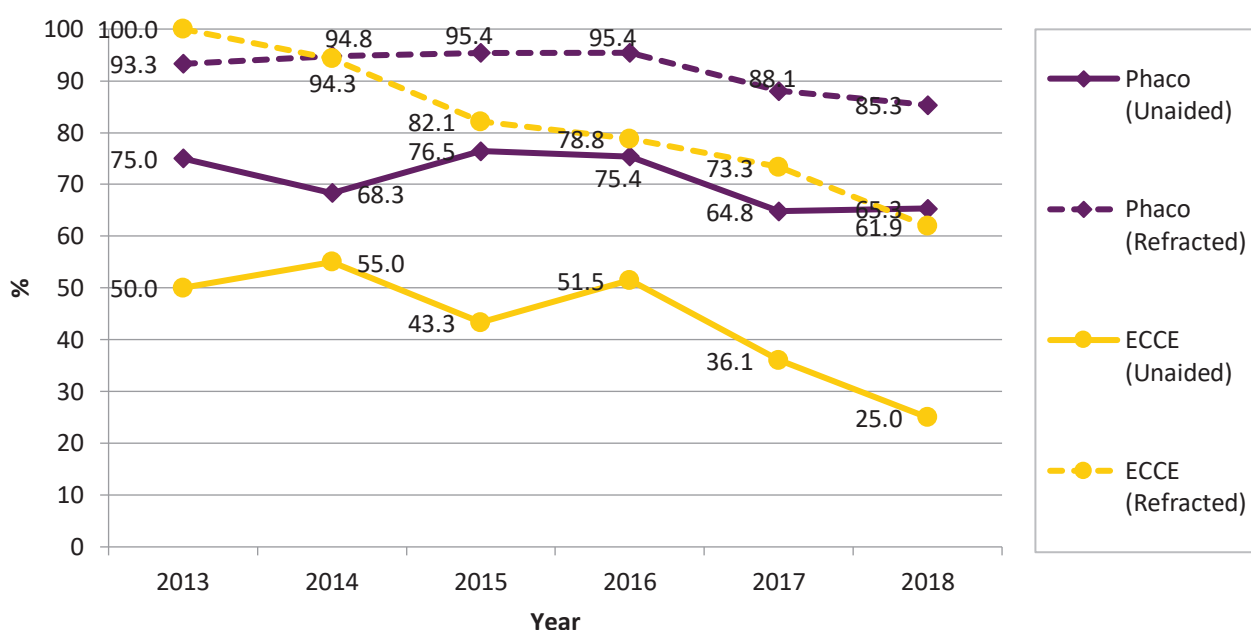


Figure 2.5.5-2: Post-operative Visual Acuity 6/18 or Better for Eyes without Ocular Co-morbidities by ECCE and Phaco CSR 2013-2018

Table 2.5.5-2: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidities by Complications and Types of Surgery, CSR 2013-2018

2013	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	5	2	40.0	3	2	66.7	0	0	0.0	0	0	0.0
No intra-op complications	60	54	90.0	57	52	91.2	2	1	50.0	0	0	0.0

2014	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	21	17	81.0	15	12	80.0	4	4	100.0	0	0	0.0
No intra-op complications	630	572	90.8	597	543	91.0	31	27	87.1	0	0	0.0

2015	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	46	33	71.7	31	26	83.9	5	2	40.0	0	0	0.0
No intra-op complications	1160	1078	92.9	1119	1046	93.5	23	19	82.6	0	0	0.0

2016	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	42	29	69.0	30	24	80.0	3	0	0.0	0	0	0.0	1	1	100.0	7	4	57.1
No intra-op complications	1343	1226	91.3	1302	1195	91.8	30	22	73.3	0	0	0.0	0	0	0.0	11	9	81.8

2017	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	97	63	64.9	72	49	68.1	23	12	52.2	0	0	0.0	1	1	100.0	-	-	-
No intra-op complications	1828	1502	82.2	1758	1457	82.9	67	44	65.7	1	1	100.0	1	0	0.0	-	-	-

2018	Types of Cataract Surgery																				
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			SICS			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	95	64	67.4	69	49	71.0	20	9	45.0	0	0	0.0	2	2	100.0	3	3	100.0	-	-	-
No intra-op complications	1427	1129	79.1	1357	1084	79.9	22	9	40.9	2	2	100.0	3	1	33.3	43	33	76.7	-	-	-

Table 2.5.5-3: Post-operative Refracted Visual Acuity 6/18 or Better in Eyes without Ocular Co-morbidities by Complications and Types of Surgery, CSR 2013-2018

2013	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	5	2	40.0	3	2	66.7	0	0	0.0	0	0	0.0	0	0	0.0	2	0	0.0
No intra-op complications	60	57	95.0	57	54	94.7	2	2	100.0	0	0	0.0	0	0	0.0	1	1	100.0

2014	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	21	18	85.7	15	13	86.7	4	4	100.0	0	0	0.0	0	0	0.0	2	1	50.0
No intra-op complications	630	598	94.9	597	567	95.0	31	29	93.5	0	0	0.0	0	0	0.0	1	1	100.0

2015	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	46	36	78.3	31	27	87.1	5	3	60.0	0	0	0.0	1	1	100.0	9	5	55.6
No intra-op complications	1160	1107	95.4	1119	1070	95.6	23	20	87.0	0	0	0.0	2	2	100.0	16	15	93.8

2016	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	42	33	78.6	30	26	86.7	3	2	66.7	0	0	0.0	1	1	100.0	7	4	57.1
No intra-op complications	1343	1279	95.2	1302	1245	95.6	30	24	80.0	0	0	0.0	0	0	0.0	11	10	90.9

2017	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	97	77	79.4	72	59	81.9	23	16	69.6	0	0	0.0	1	1	100.0	-	-	-
No intra-op complications	1828	1605	87.8	1758	1553	88.3	67	50	74.6	1	1	100.0	1	0	0.0	-	-	-

2018	Types of Cataract Surgery																				
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			SICS			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	95	75	78.9	69	56	81.2	20	13	65.0	0	0	0.0	2	2	100.0	3	3	100.0	-	-	-
No intra-op complications	142	121	84.9	135	116	85.6	22	13	59.1	2	2	100.0	3	2	66.7	43	34	79.1	-	-	-

2.5.6 Factors Contributing to Post-operative Refracted Visual Acuity of Worse than 6/12

Table 2.5.6-1: Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in All Eyes, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N (total no. of post-op refracted vision worse than 6/12)	19		98		128		197		514		454	
Preexisting ocular co-morbidity	3	15.8	1	12.2	2	15.6	4	22.3	5	11.1	4	9.0
High astigmatism	5	26.3	1	15.4	1	11.7	1	9.1	3	7.6	3	6.8
Corneal decompensation	0	0.0	0	0.0	1	0.8	2	1.0	6	1.2	4	0.9
Cystoid macular oedema	0	0.0	0	0.0	1	0.8	4	2.0	1	0.2	3	0.7
Retinal detachment	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0	2	0.4
Posterior capsular opacity	0	0.0	1	1.0	4	3.1	3	1.5	8	1.6	0	0.0
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Decentered IOL	1	5.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	1	57.9	2	28.6	5	39.1	4	20.3	8	16.0	6	13.2
	1	9	8	6	0	1	1	8	3	1	0	2

Table 2.5.6-2: Factors Contributing to Post-operative Refracted VA of Worse than 6/18 in All Eyes, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N (total no. of post-op refracted vision worse than 6/18)	14		56		84		119		346		327	
Preexisting ocular co-morbidity	2	14.3	10	17.9	12	14.3	31	26.1	41	11.8	31	9.5
High astigmatism	4	28.6	8	14.3	10	11.9	12	10.1	20	5.8	20	6.1
Cystoid macular oedema	0	0.0	0	0.0	1	1.2	2	1.7	1	0.3	3	0.9
Corneal decompensation	0	0.0	0	0.0	0	0.0	2	1.7	3	0.9	3	0.9
Retinal detachment	0	0.0	1	1.8	0	0.0	0	0.0	0	0.0	1	0.3
Posterior capsular opacity	0	0.0	1	1.8	2	2.4	0	0.0	5	1.4	0	0.0
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Decentered IOL	1	7.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	9	64.3	17	30.4	38	45.2	30	25.2	60	17.3	40	12.2

Table 2.5.6-3: Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in Eyes without Preexisting Ocular co-morbidity, CSR 2013-2018

	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N	9		62		95		130		360		329	
High astigmatism	2	22.2	5	8.1	13	13.7	10	7.7	28	7.8	9	5.8
Preexisting ocular co-morbidity (not detected pre-operatively)	0	0.0	6	9.7	6	6.3	9	6.9	7	1.9	5	1.5
Cystoid macular oedema	0	0.0	0	0.0	1	1.1	3	2.3	1	0.3	3	0.9
Corneal decompensation	0	0.0	0	0.0	1	1.1	2	1.5	6	1.7	3	0.9
Posterior capsular opacity	0	0.0	1	1.6	2	2.1	3	2.3	8	2.2	0	0.0
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Decentered IOL	1	11.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retinal detachment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	5	55.6	20	32.3	43	45.3	37	28.5	61	16.9	41	12.5

Table 2.5.6-4: Factors Contributing to Post-operative Refracted VA of Worse than 6/18 in Eyes without Preexisting Ocular co-morbidity, CSR 2013-2018

	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N	6		35		63		73		243		235	
Preexisting ocular co-morbidity (not detected pre-operatively)	0	0.0	5	14.3	4	6.3	5	6.8	4	1.6	3	1.3
High astigmatism	1	16.7	1	2.9	8	12.7	9	12.3	15	6.2	11	4.7
Posterior capsular opacity	0	0.0	1	2.9	0	0.0	0	0.0	5	2.1	0	0.0
Cystoid macular oedema	0	0.0	0	0.0	1	1.6	1	1.4	1	0.4	3	1.3
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corneal decompensation	0	0.0	0	0.0	0	0.0	2	2.7	3	1.2	3	1.3
Decentered IOL	1	16.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retinal detachment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	4	66.7	13	37.1	36	57.0	26	35.7	66	27.2	58	24.7

2.5.7 Actual or Residual Refractive Power (in Spherical Equivalent)

Table 2.5.7-1: Distribution of Target and Actual Refractive Power in ECCE and Phaco, CSR 2013-2018

	Target Refraction						Actual-Target Refraction					
	All Patient						All Patient					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
N	139	894	1598	2090	2751	2548	86	649	1039	1244	1815	1820
Mean	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.8	-0.3	-0.5	-0.1	-0.6
SD	0.2	0.2	0.2	0.2	0.3	0.3	0.9	1.0	0.9	0.9	0.9	0.9
Median	-0.3	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.7	-0.3	-0.5	-0.1	-0.5
Minimum	-0.8	-1.6	-2.1	-3.2	-2.3	-2.0	-3.2	-4.5	-3.6	-6.5	-6.1	-6.0
Maximum	0.0	0.5	1.3	0.7	2.8	3.0	1.8	3.3	8.3	8.8	10.3	10.0

	Actual Refraction											
	ECCE						Phaco					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
N	4	41	29	35	117	79.0	76	705	1060	1184	1846	1683
Mean	-0.4	-1.2	-1.1	-0.9	-0.8	-0.6	-0.7	-1.0	-0.6	-0.5	-0.5	-0.5
SD	1.4	1.1	1.1	1.1	1.5	1.9	0.9	0.9	0.8	0.9	0.8	0.8
Median	-0.4	-1.3	-1.0	-1.0	-0.9	-0.8	-0.8	-0.9	-0.5	-0.5	-0.5	-0.5
Minimum	-2.0	-4.0	-3.0	-3.0	-4.5	-3.3	-3.3	-5.4	-3.8	-6.5	-6.5	-6.0
Maximum	0.0	0.8	2.5	1.0	9.8	8.8	1.6	3.0	7.5	8.8	3.0	10.0

Note: Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis

Table 2.5.7-2: Percentage Distribution of Target Refractive Power in ECCE and Phaco, CSR 2013-2018

	Target Refraction									
	All Patients									
	2013		2014		2015		2016		2017	
Diopetre (D)	n	%	n	%	n	%	n	%	n	%
-10.0-<(-9.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.5-<(-4.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.0-<(-3.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3.5-<(-3.0)	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-3.0-<(-2.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-2.5-<(-2.0)	0	0.0	0	0.0	1	0.1	0	0.0	1	0.0
-2.0-<(-1.5)	0	0.0	1	0.1	1	0.1	3	0.1	0	0.0
-1.5-<(-1.0)	0	0.0	0	0.0	2	0.1	4	0.2	8	0.3
-1.0-<(-0.5)	18	12.9	67	7.5	130	8.1	404	19.3	792	28.8
-0.5-<0.0	120	86.3	822	91.9	1454	91.0	1665	79.7	1903	69.2
0.0-<0.5	1	0.7	3	0.3	5	0.3	9	0.4	8	0.3
0.5-<1.0	0	0.0	1	0.1	2	0.1	4	0.2	4	0.1
1.0-<1.5	0	0.0	0	0.0	3	0.2	0	0.0	2	0.1
1.5-<2.0	0	0.0	0	0.0	0	0.0	0	0.0	5	0.2
2.0-<2.5	0	0.0	0	0.0	0	0.0	0	0.0	20	0.7
2.5-<3.0	0	0.0	0	0.0	0	0.0	0	0.0	8	0.3
3.0-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.0-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.0-<9.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 2.5.7-3: Percentage Distribution of Actual Refractive Power in ECCE and Phaco, CSR 2013-2018

	Actual Refraction											
	ECCE						Phaco					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Dioptre (D)	n	%	n	%	n	%	n	%	n	%	n	%
-10.0-<(-9.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.2
-4.5-<(-4.0)	0	0.0	0	0.0	0	0.0	1	0.9	0	0.0	1	0.1
-4.0-<(-3.5)	0	0.0	2	4.9	0	0.0	0	0.0	5	0.7	1	0.1
-3.5-<(-3.0)	0	0.0	1	2.4	0	0.0	3	2.6	1	1.3	1	0.1
-3.0-<(-2.5)	0	0.0	1	2.4	2	6.9	3	8.6	3	2.6	3	3.8
-2.5-<(-2.0)	0	0.0	3	7.3	3	10.3	1	2.9	10	8.5	2	2.5
-2.0-<(-1.5)	1	25.0	7	17.1	3	10.3	5	14.3	15	12.8	17	21.5
-1.5-<(-1.0)	1	25.0	8	19.5	6	20.7	6	17.1	12	10.3	5	6.3
-1.0-<(-0.5)	1	25.0	7	17.1	4	13.8	5	14.3	24	20.5	18	22.8
-0.5-<0.0	0	0.0	4	9.8	8	27.6	6	17.1	24	20.5	15	19.0
0.0-<0.5	0	0.0	7	17.1	2	6.9	4	11.4	9	7.7	9	11.4
0.5-<1.0	0	0.0	1	2.4	0	0.0	4	11.4	7	6.0	2	2.5
1.0-<1.5	1	25.0	0	0.0	0	0.0	1	2.9	6	5.1	2	2.5
1.5-<2.0	0	0.0	0	0.0	0	0.0	0	0.0	2	2.6	1	0.9
2.0-<2.5	0	0.0	0	0.0	0	0.0	0	0.0	2	2.5	0	0.0
2.5-<3.0	0	0.0	0	0.0	1	3.4	0	0.0	1	0.9	0	0.0
3.0-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	1	1.3	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
5.0-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
8.0-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
9.0-<9.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	1	0.9	0	0.0	0	0.0

Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis

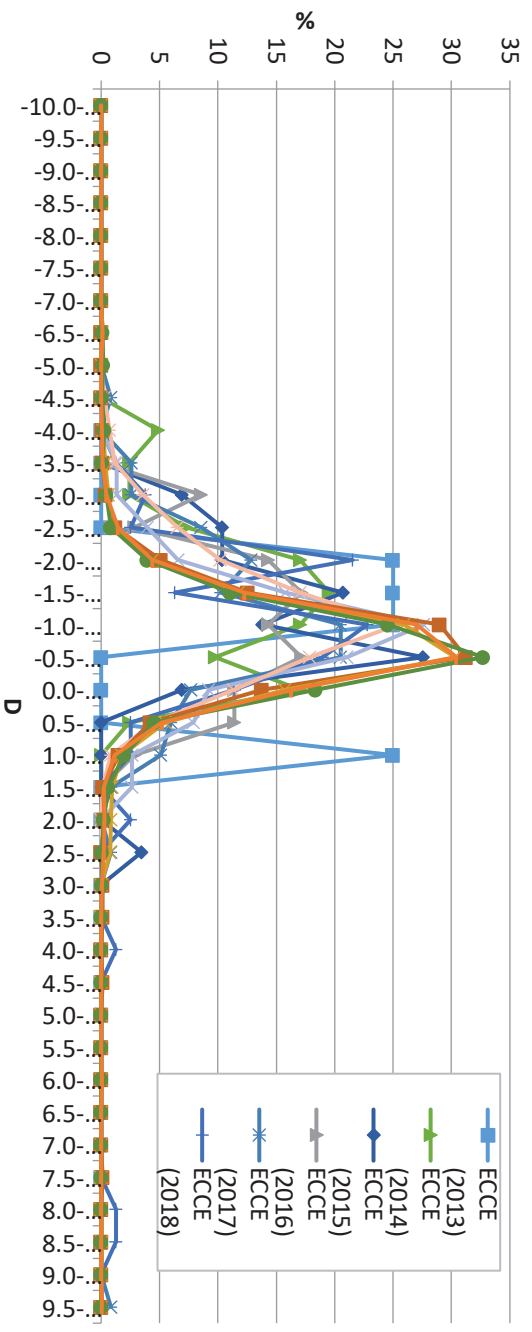


Figure 2.5.7-1: Distribution of Actual Refractive Power in ECCE and Phaco, CSR 2013-2018

Table 2.5.7-4: Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2018

Power (D)	Target Refraction						Actual Refraction					
	2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%
N	120	100	807	100	1507	100	1998	100	2571	100	2329	100
-10.0-<(-9.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.5-<(-4.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
-4.0-<(-3.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	0.7
-3.5-<(-3.0)	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	1.3
-3.0-<(-2.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.3
-2.5-<(-2.0)	0	0.0	0	0.0	1	0.1	0	0.0	1	0.0	3	3.9
-2.0-<(-1.5)	0	0.0	0	0.0	0	0.0	3	0.2	0	0.0	4	0.2
-1.5-<(-1.0)	0	0.0	0	0.0	1	0.1	3	0.2	8	0.3	8	0.3
-1.0-<(-0.5)	9	7.5	40	5.0	117	7.8	371	18.6	723	28.1	894	38.4
-0.5-<0.0	110	91.7	764	94.7	1379	91.5	1610	80.6	1794	69.8	1406	60.4
0.0-<0.5	1	0.8	3	0.4	5	0.3	7	0.4	7	0.3	3	0.1
0.5-<1.0	0	0.0	0	0.0	2	0.1	3	0.2	4	0.2	0	0.0
1.0-<1.5	0	0.0	0	0.0	2	0.1	0	0.0	2	0.1	1	0.0
1.5-<2.0	0	0.0	0	0.0	0	0.0	0	0.0	5	0.2	1	0.0
2.0-<2.5	0	0.0	0	0.0	0	0.0	0	0.0	19	0.7	2	0.1
2.5-<3.0	0	0.0	0	0.0	0	0.0	0	0.0	8	0.3	10	0.4
3.0-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
8.0-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

9.0-<9.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
9.5-<10.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1

Power (D)	Difference between Target and Actual Refraction											
	2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%
N	75	100	614	100	985	100	1160	100	1707	100	1590	100
-10.0-<(-9.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	0	0.0	0	0.0	0	0.0	1	0.1	2	0.1	2	0.1
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	3	0.2	0	0.0
-4.5-<(-4.0)	0	0.0	1	0.2	0	0.0	0	0.0	2	0.1	1	0.1
-4.0-<(-3.5)	0	0.0	5	0.8	1	0.1	1	0.1	5	0.3	1	0.1
-3.5-<(-3.0)	1	1.3	5	0.8	1	0.1	1	0.1	9	0.5	0	0.0
-3.0-<(-2.5)	1	1.3	16	2.6	1	0.1	5	0.4	7	0.4	8	0.5
-2.5-<(-2.0)	2	2.7	36	5.9	9	0.9	6	0.5	8	0.5	11	0.7
-2.0-<(-1.5)	4	5.3	72	11.7	25	2.5	26	2.2	26	1.5	26	1.6
-1.5-<(-1.0)	8	10.7	87	14.2	93	9.4	69	5.9	89	5.2	96	6.0
-1.0-<(-0.5)	20	26.7	140	22.8	227	23.0	227	19.6	262	15.3	250	15.7
-0.5-<0.0	15	20.0	133	21.7	321	32.6	344	29.7	525	30.8	503	31.6
0.0-<0.5	13	17.3	67	10.9	206	20.9	269	23.2	484	28.4	419	26.4
0.5-<1.0	7	9.3	42	6.8	66	6.7	128	11.0	196	11.5	186	11.7
1.0-<1.5	1	1.3	8	1.3	21	2.1	44	3.8	53	3.1	59	3.7
1.5-<2.0	3	4.0	0	0.0	7	0.7	9	0.8	26	1.5	13	0.8
2.0-<2.5	0	0.0	0	0.0	3	0.3	13	1.1	4	0.2	4	0.3
2.5-<3.0	0	0.0	1	0.2	0	0.0	9	0.8	4	0.2	6	0.4
3.0-<3.5	0	0.0	1	0.2	1	0.1	7	0.6	2	0.1	2	0.1
3.5-<4.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.1
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
7.5-<8.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
8.0-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.0-<9.5	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1

NOTE: Formula of $SE = Sp + (\frac{Cy}{2})$

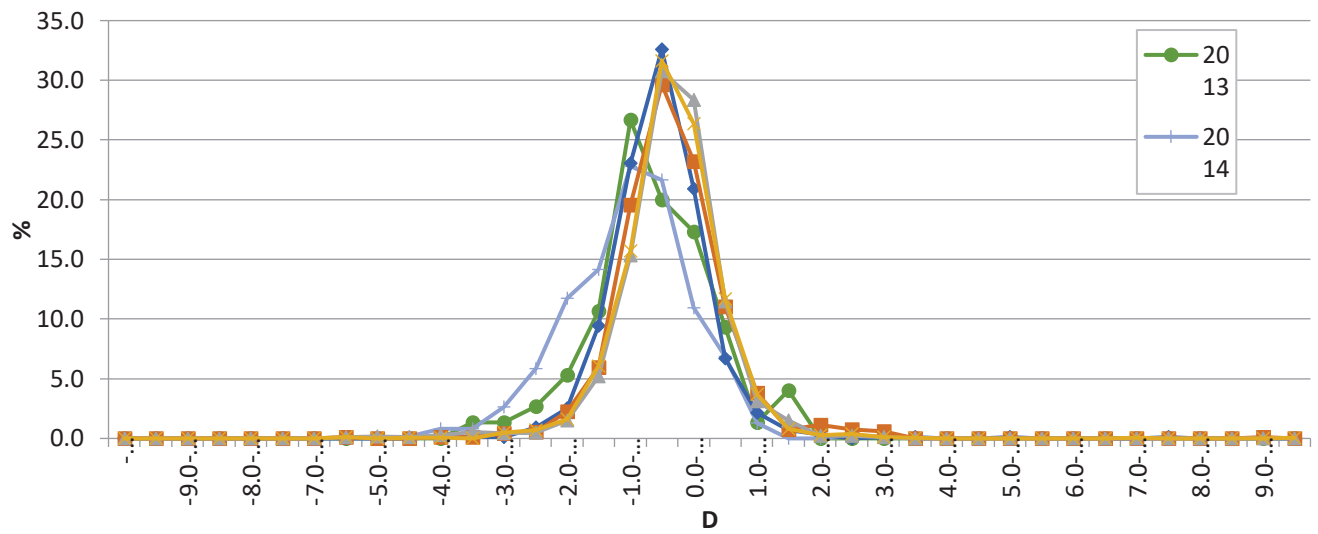


Figure 2.5.7-2: Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2018

Table 2.5.7-5:Percentage of Difference in Target and Actual Refractive Power within $\pm 1.0D$ by SDP, CSR 2013-2018

2013	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
All Centres	86	61	70.9	75	55	73.3	4	1	25.0
KK-KKM Pahang	34	24	70.6	25	19	76.0	3	1	33.3
KK-KKM Sarawak	52	37	71.2	50	36	72.0	1	0	0.0

2014	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
All Centres	649	402	61.9	614	382	62.2	29	18	62.1
KK-KKM Terengganu	22	16	72.7	15	13	86.7	7	3	42.9
KK-KKM Kelantan	62	47	75.8	41	35	85.4	18	11	61.1
KK-KKM Sarawak	565	339	60.0	558	334	59.9	4	4	100.0

2015	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
All Centres	1039	845	81.3	985	820	83.2	26	15	57.7
KK-KKM Kedah	134	123	91.8	134	123	91.8	0	0	0.0
KK-KKM Neg. Sembilan	3	2	66.7	2	1	50.0	0	0	0.0
KK-KKM Pahang	113	82	72.6	96	75	78.1	10	6	60.0
KK-KKM Sabah	53	39	73.6	40	34	85.0	9	5	55.6
KK-KKM Sarawak	735	598	81.4	712	586	82.3	7	4	57.1
KK-KKM Terengganu	1	1	100.0	1	1	100.0	0	0	0.0

2016	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
All Centres	1215	1002	82.5	1160	968	83.4	30	17	56.7
KK-KKM Johor	38	32	84.2	37	31	83.8	1	1	100.0
KK-KKM Kedah	220	196	89.1	216	194	89.8	2	1	50.0

KK-KKM Kelantan	33	23	69.7	17	14	82.4	14	7	50.0
KK-KKM Neg. Sembilan	148	103	69.6	139	97	69.8	1	1	100.0
KK-KKM Pahang	91	76	83.5	83	69	83.1	5	4	80.0
KK-KKM Pulau Pinang	60	51	85.0	57	50	87.7	1	0	0.0
KK-KKM Sabah	117	93	79.5	114	92	80.7	3	1	33.3
KK-KKM Sarawak	508	428	84.3	497	421	84.7	3	2	66.7

2017	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
All Centres	1815	1531	84.4	1707	1467	85.9	98	60	61.2
KK-KKM Pulau Pinang	76	69	90.8	75	68	90.7	1	1	100.0
KK-KKM Kedah	207	181	87.4	183	169	92.3	24	12	50.0
KK-KKM Pahang	222	194	87.4	211	187	88.6	11	7	63.6
KK-KKM Terengganu	201	174	86.6	179	156	87.2	22	18	81.8
KK-KKM Sarawak	567	487	85.9	558	482	86.4	7	5	71.4
KK-KKM Sabah	223	184	82.5	213	178	83.6	7	4	57.1
KK-KKM Neg. Sembilan	226	176	77.9	216	170	78.7	6	4	66.7
KK-KKM Johor	14	10	71.4	14	10	71.4	0	0	0.0
KK-KKM Kelantan	79	56	70.9	58	47	81.0	20	9	45.0

2018	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
All Centres	1724	1449	84.0	1590	1358	85.4	77	46	59.7
KK-KKM Sarawak	467	399	85.4	437	380	87.0	11	6	54.5
KK-KKM Neg. Sembilan	408	346	84.8	390	334	85.6	12	7	58.3
KK-KKM Sabah	333	275	82.6	309	261	84.5	13	7	53.8
KK-KKM Kedah	202	179	88.6	175	156	89.1	8	5	62.5
KK-KKM Terengganu	145	124	85.5	133	115	86.5	10	7	70.0
KK-KKM Kelantan	96	74	77.1	78	63	80.8	18	11	61.1
KK-KKM Pahang	73	52	71.2	68	49	72.1	5	3	60.0

NOTE: Formula of Actual Refraction, $SE = Sp + (\frac{Cy}{2})$

Result is based on available info of target and actual refraction.

Target/Planned refractive power = Section pre-clerking

Actual refractive power, SE = Section post-op visual acuity measurement (SE=SP+(CY/2))

Denominator = patient with refraction = if info available in refracted vision Section post-op visual acuity measurement

CHAPTER 3: KK-KKM STATIC - PUSAT PEMBEDAHAN KATARAK PPKM-HS-HOSPITAL SELAYANG (PPKM-HS) AND KK-KKM KEDAH (HOSPITAL JITRA)

PPKM-HS and KK-KKM Kedah (Hospital Jitra) form the “static” component of the KK1M Strategy to address issue of cataract blindness within the urban population. It is a community based one-stop center for cataract surgery, has two fully functioning operating theatres and includes all other cataract care pathways under one roof. It opens for clinic and surgery sessions daily from Monday to Friday.

Consistent with its aim to maximise output at the same time to produce high quality good outcome surgery, the scheduled surgical cases are low risks and performed by fully certified surgeons from all over the country in particular from hospitals in the Klang Valley. Its location within the commercial area facilitates population access to the center. Cataract surgical data are entered into the local Eye Clinic Management System (ECMS) which synchronises with NED database at regular intervals.

3.1 Stock and Flow

3.1.1 Stock and Flow

Table 3.1.1-1: Stock and Flow, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
No. of SDP	1	1	1	1	1	2
Total no. of cataract surgery registered to CSR	1506	2266	1824	2900	3507	4261
Cataract surgery with visual outcome records	n % 1441 95.7	n % 2183 96.3	n % 1500 82.2	n % 2215 76.4	n % 3159 90.1	n % 3706 87.0

3.2 Characteristics of Patients

3.2.1 Patient Demography

Table 3.2.1-1: Age and Gender Distributions, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Total number of cataract surgery	1506	2266	1824	2900	3507	4261
Age						
Mean (years)	65.3	65.2	65	65.3	65.8	66.3
Median (years)	66	66	66	66	66	67
Minimum (year)	19	1	32	21	21	24
Maximum (years)	93	98	86	86	90	94
% Distribution						
Age group, years	n %	n %	n %	n %	n %	n %
0-4	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	0 0.0
5-9	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
10-14	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
15-19	1 0.1	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
20-24	3 0.2	1 0.0	0 0.0	1 0.0	3 0.1	2 0.1

25-29	0	0.0	0	0.0	0	0.0	4	0.1	5	0.1	6	0.1
30-34	1	0.1	4	0.2	4	0.2	1	0.0	14	0.4	7	0.2
35-39	4	0.3	3	0.1	11	0.6	13	0.5	19	0.5	18	0.4
40-44	17	1.1	23	1.0	20	1.1	27	0.9	29	0.8	31	0.7
45-49	36	2.4	65	2.5	50	2.7	66	2.3	62	1.8	73	1.7
50-54	108	7.2	134	5.0	124	6.8	180	6.2	186	5.3	241	5.7
55-59	177	11.8	317	12.3	227	12.5	320	11.0	411	11.7	492	11.6
60-64	294	19.5	430	17.9	363	19.9	643	22.2	727	20.7	804	18.9
65-69	343	22.8	541	23.6	466	25.6	758	26.1	855	24.4	999	23.5
70-74	320	21.3	435	19.6	315	17.3	527	18.2	629	17.9	821	19.3
75-79	156	10.4	261	12.7	219	12.0	284	9.8	399	11.4	520	12.2
≥80	46	3.1	51	5.2	25	1.4	76	2.6	168	4.8	247	5.8
Missing	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0
Gender												
Male	684	45.4	1077	47.5	865	47.4	1341	46.2	1569	44.7	1887	44.3
Female	822	54.6	1189	52.5	959	52.6	1559	53.8	1938	55.3	2374	55.7
Missing	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0

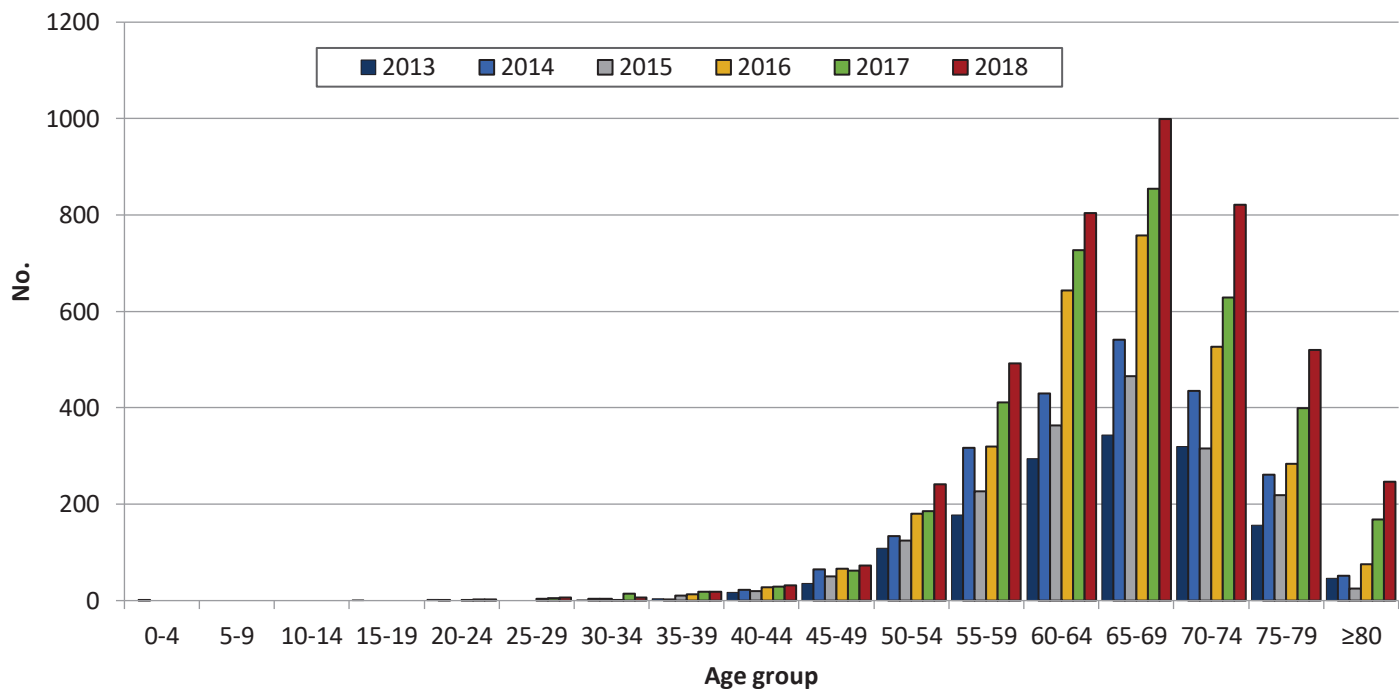


Figure 3.2.1-1: Age Distribution, CSR 2013-2018

3.2.2 Systemic co-morbidity

Table 3.2.2-1: Distribution of Systemic Co-Morbidity, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
No of patients (N)	1506	2266	1824	2900	3507	4261
Percentage of patients with any systemic co-morbidity	81.9	77.3	78.0	80.6	79.9	81.5
Percentage of patients with specific systemic co-morbidity						
	n	%	n	%	n	%
Hypertension	98	62.	140	62.	115	63.
	4	2	5	0	6	4
Diabetes Mellitus	67	42.	104	46.	807	44.
	9	9	2	0	6	8
Ischaemic Heart Disease	76	4.8	110	4.9	65	3.6
COAD/Asthma	66	4.2	87	3.8	46	2.5
Renal Failure	13	0.8	35	1.5	21	1.2
Cerebrovascular accident	21	1.3	16	0.7	12	0.7
Others	52	33.	974	43.	798	43.
	5	2	0	0	0	2

Number or percentage may be more than total or 100% as patients might have more than one systemic co-morbidity

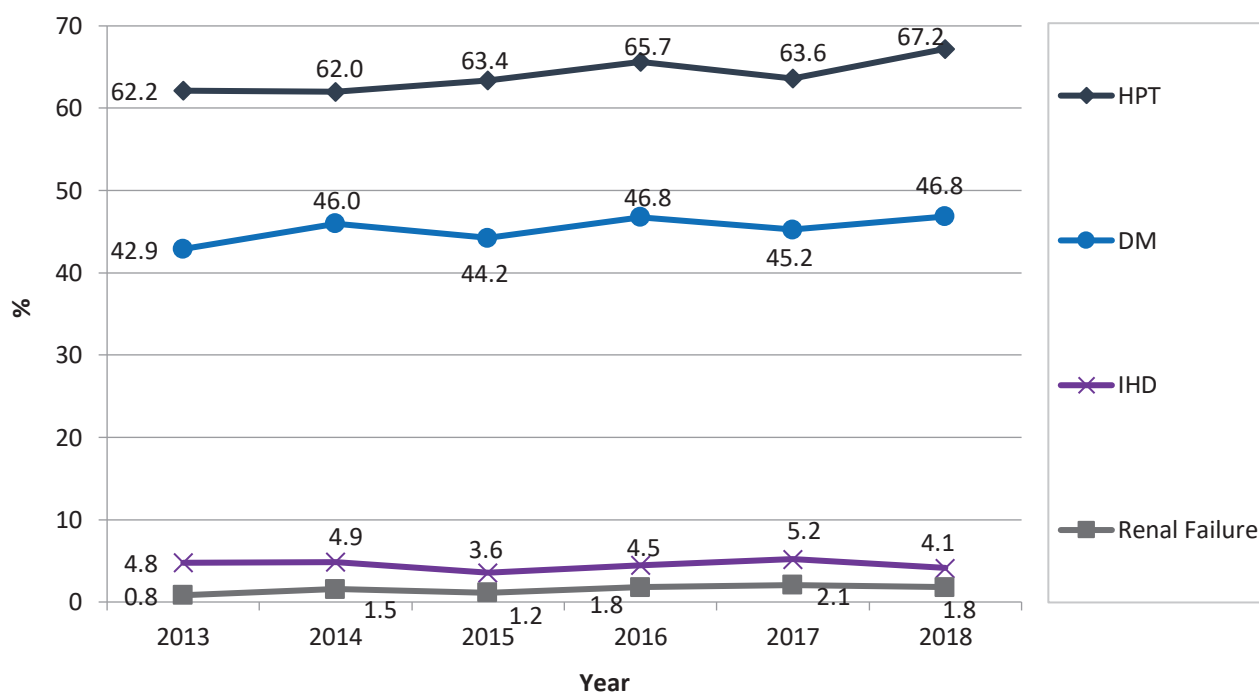


Figure 3.2.2-1: Percentage of Patients with Specific Systemic Co-morbidity, CSR 2013-2018

3.2.3 Causes of cataract

Table 3.2.3-1: Causes of Cataract, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
Primary cataract	1214	80.6	1722	76.0	1410	77.3	2332	80.4	2258	64.4	3938	92.4
Secondary cataract	9	0.6	8	0.4	13	0.7	12	0.4	20	0.6	10	0.2
Missing value	283	18.8	536	23.7	401	22.0	556	19.2	1229	35.0	313	7.3
Primary Cataract (N)	1067		1467		1410		2332		2258		3938	
	n	%	n	%	n	%	n	%	n	%	n	%
Senile/age related	1064	99.7	1463	99.7	1191	84.5	2132	91.4	1772	78.5	3414	86.7
Congenital	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Development	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0
Others	3	0.3	4	0.3	219	15.5	199	8.5	1	0.0	1	0.0
Secondary Cataract (N)	5		2		13		12		20		10	
	n	%	n	%	n	%	n	%	n	%	n	%
Trauma	1	20.0	0	0.0	3	23.1	3	25.0	7	35.0	7	70.0
Drug induced	1	20.0	1	50.0	1	7.7	3	25.0	6	30.0	1	10.0
Surgery induced	2	40.0	0	0.0	2	15.4	2	16.7	2	10.0	0	0.0
Others	1	20.0	1	50.0	7	53.8	4	33.3	3	15.0	1	10.0

3.2.4 First or Second Eye Surgery

Table 3.2.4-1: First or Second Eye Surgery, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
First eye surgery	894	59.4	1212	53.5	1088	59.6	1771	61.1	2101	59.9	2783	65.3
Fellow eye surgery	612	40.6	913	40.3	704	38.6	1080	37.2	1388	39.6	1461	34.3
Missing	0	0.0	141	6.2	32	1.8	49	1.7	18	0.5	17	0.4
Patients who had second surgery in the same year	0	0.0	449	19.8	343	18.8	547	18.9	617	17.6	518	12.2
Period of time between first and fellow eye surgery (months)												
N	611		913		704		1080		1381		1430	
Mean	17.3		13.9		12.6		17.6		17.3		20.2	
SD	27.3		27.2		22.8		33.9		34.1		30.5	
Median	6.8		4.3		4.9		4.9		5.0		8.3	
Patients who had cataract surgery before	612		913		704		1080		1388		1461	
	n	%	n	%	n	%	n	%	n	%	n	%
Eyes with intra-operative complications during surgery in the first eye	36	5.9	33	3.6	30	4.3	28	2.6	49	3.5	43	2.9

3.2.5 Past Ocular Surgery of the Operated Eye

Table 3.2.5-1: Past Ocular Surgery of the Operated Eye, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients	1506		2266		1824		2900		3507		4261	
No. of eyes with past ocular surgery record (N)	1424		2031		1694		2701		3294		3950	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients with no past ocular surgery	1362	95.6	1986	97.8	1655	97.7	2661	98.5	3239	98.3	3894	98.6
Vitreoretinal surgery	33	2.3	26	1.3	29	1.7	25	0.9	19	0.6	17	0.4
Pterygium excision	12	0.8	20	1.0	7	0.4	6	0.2	11	0.3	24	0.6
Filtering surgery	0	0.0	0	0.0	0	0.0	4	0.1	2	0.1	0	0.0
Penetrating keratoplasty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	22	1.5	20	1.0	10	0.6	9	0.3	25	0.8	18	0.5

Number or percentage may be more than total or 100% as patients might have more than one past ocular surgery

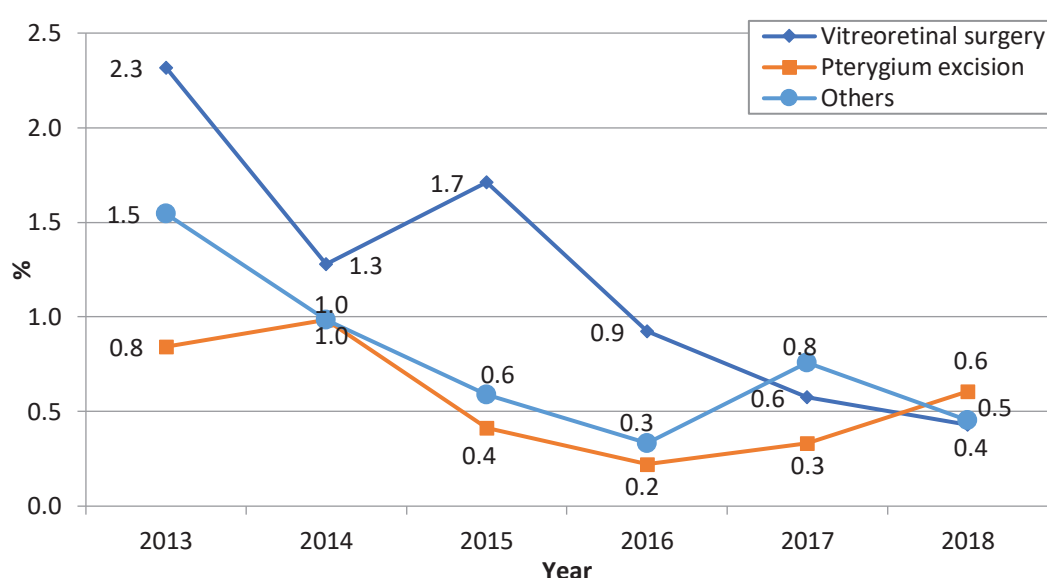


Figure 3.2.5-1: Distribution of Past Ocular Surgery of the Operated Eye, CSR 2013-2018

3.2.6 Pre-existing Ocular Co-morbidity

Table 3.2.6-1: Distribution of Pre-existing Ocular Co-Morbidity, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients with any ocular co-morbidity	25	16.	38	16.	21	11.	44	15.	46	13.	81	19.
	3	8	4	9	7	9	4	3	1	1	8	2
Patients with specific ocular co-morbidity												
Anterior segment												
1. Glaucoma	31	2.1	45	2.0	29	1.6	91	3.1	90	2.6	67	1.6
2. Pterygium involving the cornea	14	0.9	16	0.7	9	0.5	14	0.5	16	0.5	41	1.0
3. Pseudoexfoliation	4	0.3	5	0.2	6	0.3	4	0.1	14	0.4	9	0.2
4. Corneal opacity	2	0.1	5	0.2	3	0.2	6	0.2	5	0.1	3	0.1
5. Chronic uveitis	0	0.0	0	0.0	0	0.0	7	0.2	10	0.3	2	0.0
Len related complication												

1. Phacomorphic	0	0.0	1	0.0	0	0.0	2	0.1	3	0.1	1	0.0
2. Phacolytic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3. Subluxated/Disclosed	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Posterior segment												
1. Diabetic Retinopathy: Non Proliferative	70	4.6	11	5.1	55	3.0	11	4.1	14	4.0	29	7.0
2. Diabetic Retinopathy: Proliferative	31	2.1	33	1.5	15	0.8	37	1.3	44	1.3	53	1.2
3. Diabetic Retinopathy: CSME*	6	0.4	13	0.6	8	0.4	19	0.7	25	0.7	52	1.2
4. Diabetic Retinopathy: Vitreous haemorrhage	4	0.3	2	0.1	4	0.2	1	0.0	3	0.1	2	0.0
5. ARMD	13	0.9	19	0.8	7	0.4	27	0.9	31	0.9	63	1.5
6. Other macular disease (includes hole or scar)	6	0.4	13	0.6	4	0.2	7	0.2	11	0.3	8	0.2
7. Optic nerve disease, any type	0	0.0	2	0.1	1	0.1	4	0.1	2	0.1	6	0.1
8. Retinal detachment	11	0.7	5	0.2	4	0.2	6	0.2	8	0.2	10	0.2
9. Cannot be assessed	9	0.6	84	3.7	58	3.2	36	1.2	20	0.6	15	3.7
Miscellaneous												
1. Amblyopia	0	0.0	1	0.0	0	0.0	4	0.1	3	0.1	4	0.1
2. Significant previous eye trauma	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0
3. Pre-existing non glaucoma field defect	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
4. Others	88	5.8	65	2.9	36	2.0	12	4.1	10	3.0	14	3.4
							0		6		5	

*CSME=Clinically Significant Macular Oedema

Number or percentage may be more than total or 100% as patients might have more than one ocular co-morbidity

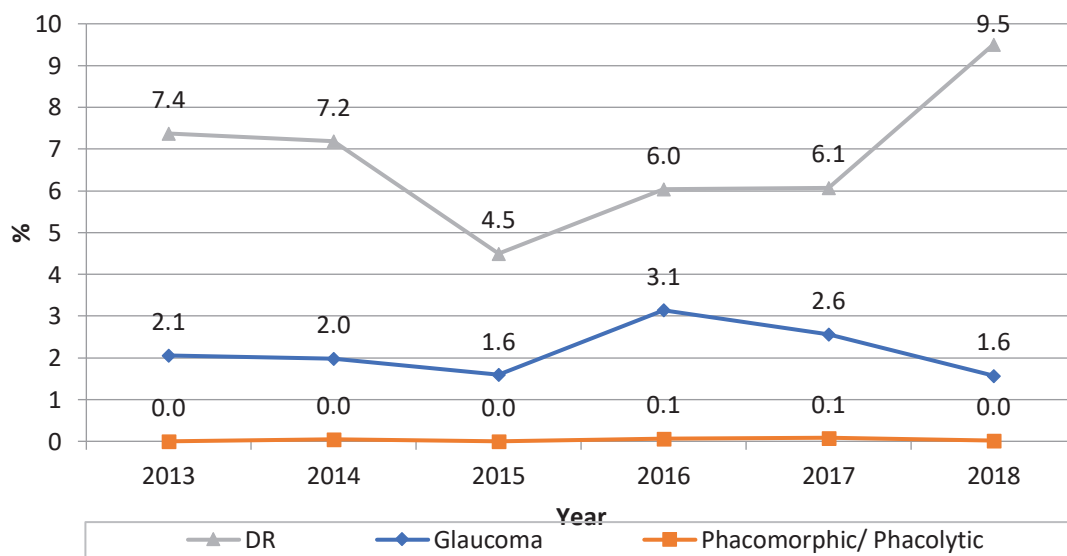


Figure 3.2.6-1: Distribution of Eyes with Specific Ocular Co-morbidity, CSR 2013-2018

3.2.7 Pre-operative Vision

Table 3.2.7-1: Distribution of Pre-Operative Vision, CSR 2013-2018

Year		2013		2014		2015		2016		2017		2018	
No. of patients (N)		1506		2266		1824		2900		3507		4261	
		n	%	n	%	n	%	n	%	n	%	n	%
Patients with unaided VA		1148	76.2	1662	73.3	1394	76.4	2668	92.0	3400	96.9	4043	94.9
Patients with pinhole VA		367	24.4	347	15.3	426	23.4	1721	59.3	3282	93.6	3986	93.5
Patients with unaided VA and no ocular comorbid		945	62.7	1341	59.2	1219	66.8	2246	77.4	2955	84.3	3266	76.6
Patients with no refraction		1191	79.1	1652	72.9	1394	76.4	2567	88.5	1800	51.3	553	13.0
6/12 and better	Unaided	58	5.1	79	4.8	68	4.9	112	4.2	165	4.9	131	3.2
	Pinhole	50	13.6	54	15.6	53	12.4	186	10.8	342	10.4	330	8.3
	Unaided and no ocular comorbid	45	4.8	68	5.1	61	5.0	85	3.8	140	4.7	105	3.2
<6/12 - 6/18	Unaided	91	7.9	156	9.4	158	11.3	303	11.4	396	11.6	421	10.4
	Pinhole	74	20.2	53	15.3	82	19.2	294	17.1	506	15.4	650	16.3
	Unaided and no ocular comorbid	72	7.6	126	9.4	138	11.3	249	11.1	350	11.8	341	10.4
<6/18 - 6/60	Unaided	506	44.1	680	40.9	551	39.5	1104	41.4	1341	39.4	1443	35.7
	Pinhole	188	51.2	155	44.7	199	46.7	626	36.4	1164	35.5	1255	31.5
	Unaided and no ocular comorbid	413	43.7	562	41.9	499	40.9	944	42.0	1143	38.7	1195	36.6
<6/60 - 3/60	Unaided	135	11.8	194	11.7	167	12.0	302	11.3	388	11.4	455	11.3
	Pinhole	20	5.4	27	7.8	28	6.6	144	8.4	288	8.8	328	8.2
	Unaided and no ocular comorbid	109	11.5	165	12.3	147	12.1	266	11.8	340	11.5	369	11.3
<3/60	Unaided	358	31.2	553	33.3	450	32.3	847	31.7	1110	32.6	1593	39.4
	Pinhole	35	9.5	58	16.7	64	15.0	471	27.4	982	29.9	1423	35.7
	Unaided and no ocular comorbid	306	32.4	420	31.3	374	30.7	702	31.3	982	33.2	1256	38.5
Unaided VA for patient with no refraction		1145		1652		1394		2567		1800		553	
n													
6/12 and better		58	5.1	79	4.8	68	4.9	105	4.1	91	5.1	31	5.6
<6/12 - 6/18		91	7.9	154	9.3	158	11.3	292	11.4	222	12.3	75	13.6
<6/18 - 6/60		503	43.9	677	41.0	551	39.5	1056	41.1	739	41.1	209	37.8
<6/60 - 3/60		135	11.8	194	11.7	167	12.0	296	11.5	201	11.2	67	12.1
<3/60		358	31.3	548	33.2	450	32.3	818	31.9	547	30.4	171	30.9

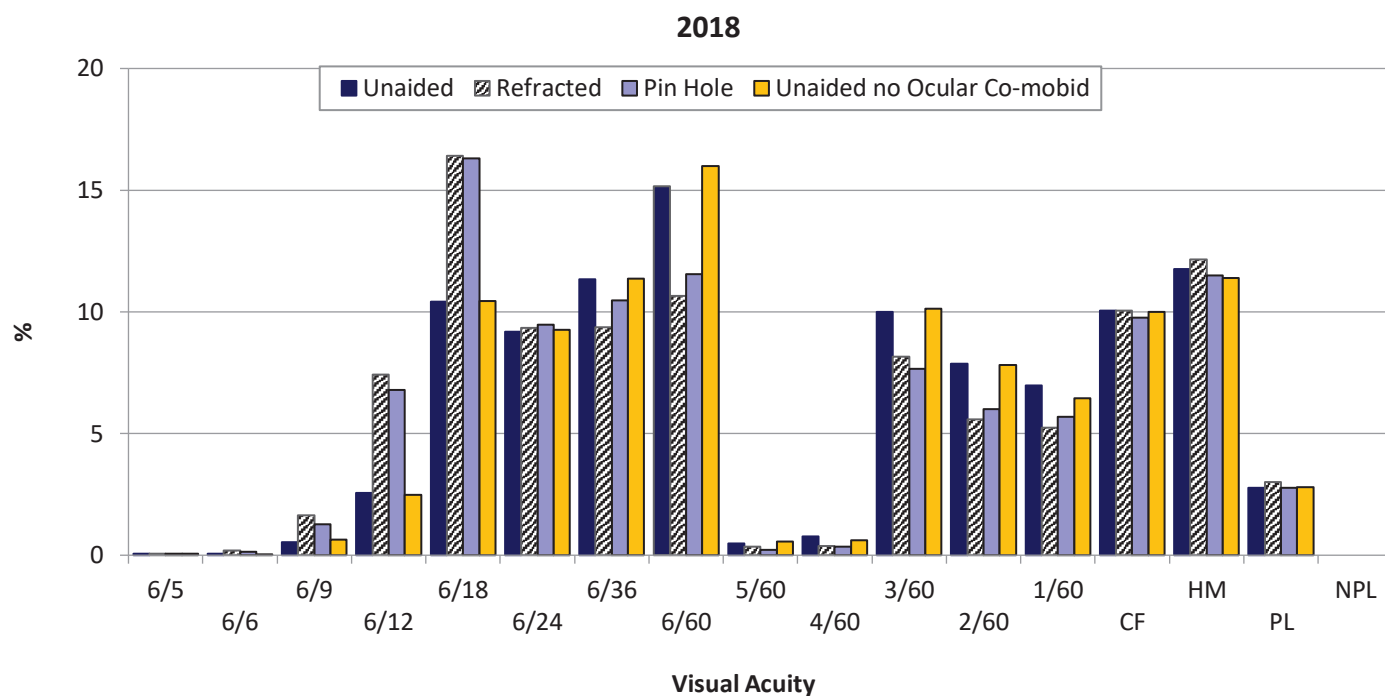


Figure 3.2.7-1: Distribution of Pre-Operative Vision, CSR 2018

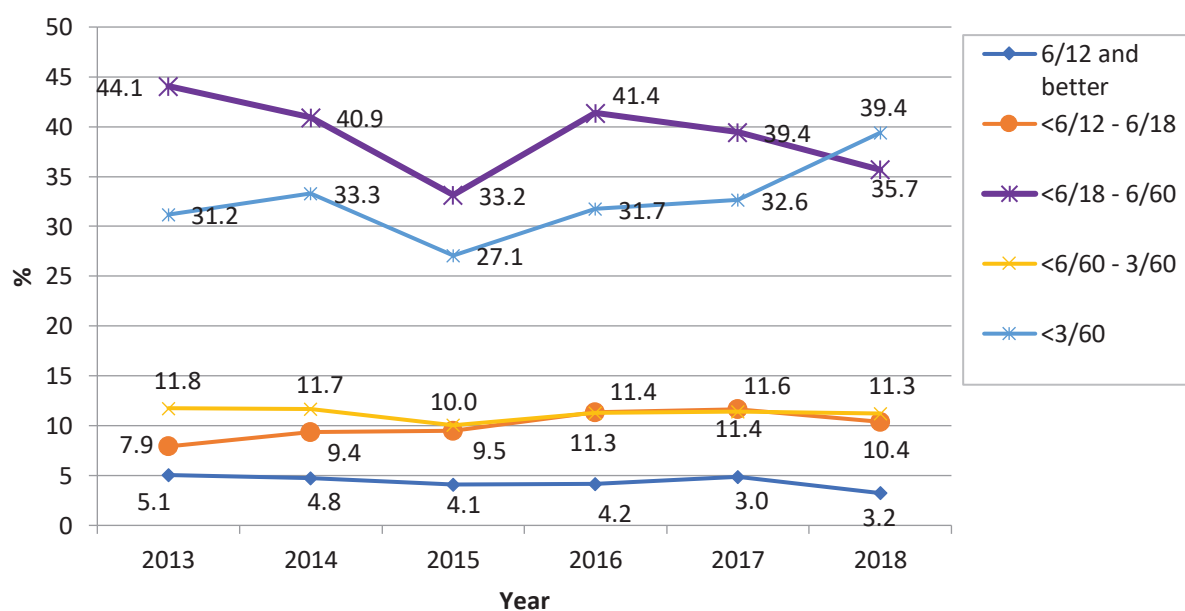


Figure 3.2.7-2: Distribution of Pre-Operative Vision (Unaided/presenting), CSR 2013-2018

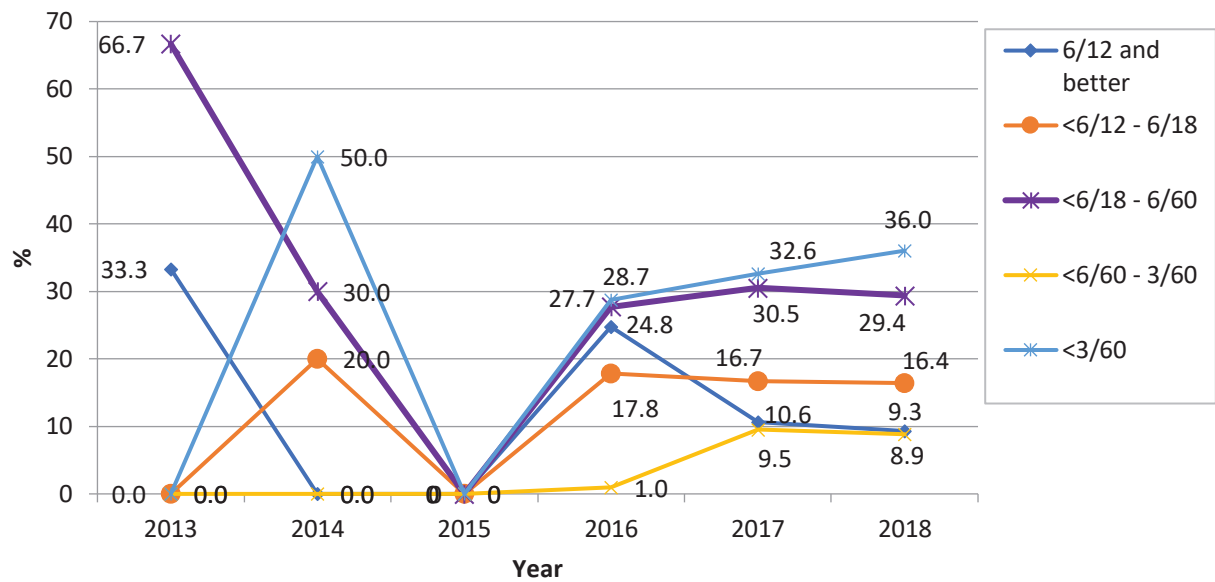


Figure 3.2.7-3: Distribution of Pre-Operative Vision (Refracted), CSR 2013-2018

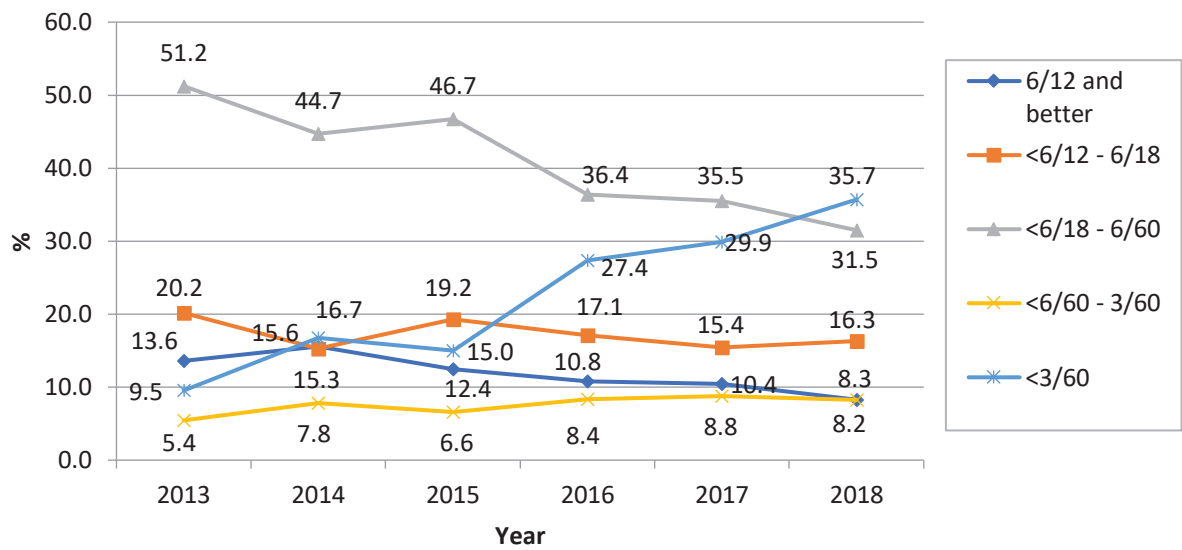


Figure 3.2.7-4: Distribution of Pre-Operative Vision (Pin Hole), CSR 2013-2018

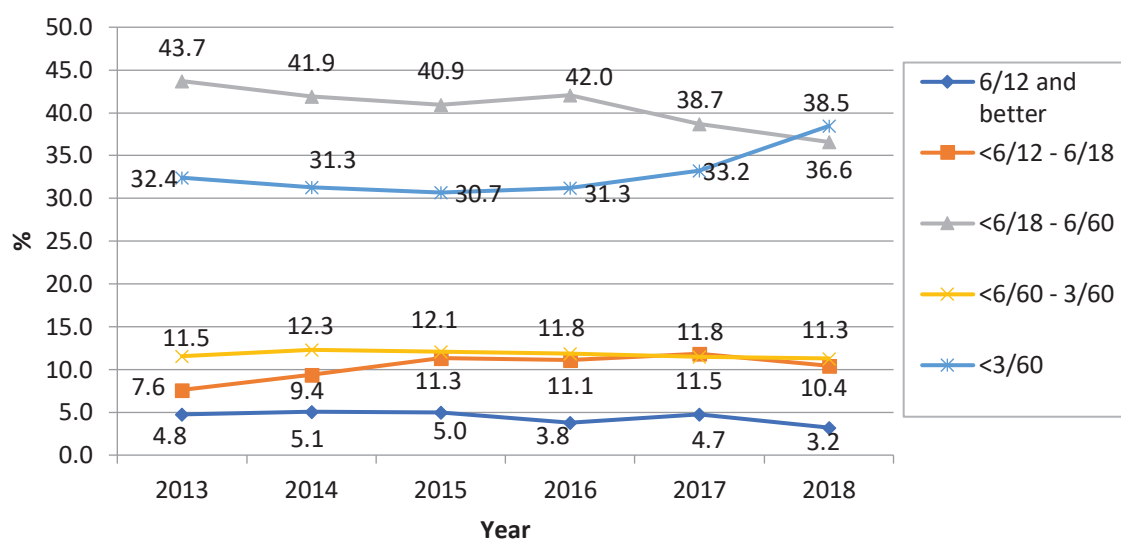


Figure 3.2.7-5: Distribution of Pre-Operative Vision (Unaided/presenting) without Ocular Co-morbidity, CSR 2013-2018

3.2.8 Target Refractive Power

Table 3.2.8-1: Distribution of Target Refractive Power, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Operated eye (N)	985	859	255	2062	3395	4231
Mean	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3
SD	0.4	0.1	0.6	0.2	0.2	0.1
Median	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3
Minimum	-6.2	-1.3	-9.9	-1.5	-5.7	-1.7
Maximum	0.01	0.20	1.82	2.25	1.75	0.47

Table 3.2.8-2: Distribution of Target Refractive Power, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Target refractive power (Dioptres)	Operated eye N=985	Operated eye N=859	Operated eye N=255	Operated eye N=2062	Operated eye N=3395	Operated eye N=4231
	n %	n %	n %	n %	n %	n %
-10-< (-9.5)	0 0.0	0 0.0	1 0.4	0 0.0	0 0.0	0 0.0
-9.5-< (-9)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-9-< (-8.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-8.5-< (-8)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-8-< (-7.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-7.5-< (-7)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-7-< (-6.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0

-6.5-< (-5)	4	0.4	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-5-< (-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.5-< (-4)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4-< (-3.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3.5-< (-3)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3-< (-2.5)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-2.5-< (-2)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-2-< (-1.5)	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
-1.5-< (-1)	1	0.1	3	0.4	0	0.0	4	0.2	5	0.2	4	0.1
-1-< (-0.5)	42	4.3	53	6.2	61	23. 9	89	4.3	85	2.5	139	3.3
-0.5-<0	93	95.	80	93.	19	75.	191	92.	322	95.	402	95.
0-<0.5	6	0	2	4	2	3	1	7	8	1	7	2
0.5-<1	1	0.1	1	0.1	0	0.0	52	2.5	66	1.9	59	1.4
1-<1.5	0	0.0	0	0.0	0	0.0	3	0.2	6	0.2	0	0.0
1.5-<2	0	0.0	0	0.0	0	0.0	1	0.1	1	0.0	0	0.0
2-<2.5	0	0.0	0	0.0	1	0.4	0	0.0	2	0.1	0	0.0
2.5-<3	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0
3-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.5-<4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9-<9.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Values outside the +10D and -10D were excluded from analysis as they would skew the mean.

3.3 Cataract Surgical Practices

3.3.1 Number of Cataract Surgery Registered to CSR by State

Table 3.3.1-1: Number of Cataract Surgery Registered to CSR by State, CSR 2013-2018

State	2013	2014	2015	2016	2017	2018
PPKM-HS	1506	2266	1824	2900	3507	3093
KK-KKM Jitra (Kedah)	-	-	-	-	-	1168

3.3.2 Surgeon Status

Table 3.3.2-1: Surgeon Status, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
Specialist	1488	98.8	2197	97.0	1714	94.0	2536	87.5	3187	90.9	3819	89.6
Gazetting Specialist	7	0.5	2	0.1	6	0.3	6	0.2	9	0.3	75	1.8
Medical Officer	11	0.7	23	1.0	7	0.4	100	3.5	157	4.5	230	5.4
Missing/NA	0	0	44	1.9	97	5.3	258	8.9	154	4.4	137	3.2

3.3.3 Duration of Surgery

Table 3.3.3-1: Duration of Surgery by Types of Cataract Surgery in minutes, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
	Median (IQR)		Median (IQR)		Median (IQR)		Median (IQR)		Median (IQR)		Median (IQR)	
ICCE	45	(30-60)	64	(52.5-69)	50	(40-59)	66.5	(55-68)	59	(57, 62)	74	(48-98)
ECCE	40	(32-49)	38	(34-45)	52.5	(37-65)	44.5	(37-60)	51.5	(39, 67)	42.5	(28.5-57.5)
Lens Aspiration	27.5	(21-34)	20.5	(17-23)	19	(18-24)	28	(24-34)	20	(17, 26)	25.5	(19-28)
All eyes	22	(18-30)	20	(17-25)	20	(17-25)	20	(17-26)	20	(17, 26)	20	(17-26)
Phaco	22	(18-29)	20	(17-24)	20	(17-24)	20	(17-26)	20	(17, 26)	20	(17-25)
Phaco → ECCE	56.5	(45-67)	56.5	(47.5-71)	58	(43-65)	60.5	(51-71)	-	-	-	-

Data entered with extreme values i.e. more than 3 hours and less than 15 minutes were not analyzed as it would skew the data

3.3.4 Distribution of Cataract Surgery Performed Under Day Care Setting

Table 3.3.4-1: Distribution of Cataract Surgery Performed Under Day Care Setting, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Number of SDPs	1	1	1	1	1	2
Total number of cataract surgery registered to CSR	1506	2266	1824	2900	3507	4261
Number of surgeries excluding children and combined surgery	0	2264	1824	2893	3501	4251
Number and % of day care surgery excluding children and combined surgery	n %	n %	n %	n %	n %	n %
	0 0.0	2264 100.0	1824 100.0	2893 100.0	3501 100.0	4245 99.9

3.3.5 Distribution of Types of Cataract Surgery

Table 3.3.5-1: Distribution of Types of Cataract Surgery, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
No of patients (N)	1506	2266	1824	2900	3507	4261
	n %	n %	n %	n %	n %	n %
Phacoemulsification	1432 95.1	2196 96.9	1777 97.4	2841 98.0	3419 97.5	4117 96.6
ECCE	37 2.5	18 0.8	13 0.7	10 0.3	51 1.5	111 2.6
Lens Aspiration	3 0.2	5 0.2	3 0.2	16 0.6	26 0.7	28 0.7
ICCE	2 0.1	4 0.2	7 0.4	6 0.2	6 0.2	5 0.1
Phaco converted to ECCE	25 1.7	39 1.7	23 1.3	25 0.9	- -	- -

Table 3.3.5-2: Distribution of Phacoemulsification by SDP, CSR 2013-2018

Years	2013	2014	2015	2016	2017	2018
	n %	n %	n %	n %	n %	n %
All Centres	1432 95.1	2196 96.9	1777 97.4	2841 98.0	3419 97.5	4117 96.6
PPKM-HS	1432 95.1	2196 96.9	1777 97.4	2841 98.0	3419 97.5	3021 97.7
KK-KKM Jitra (Kedah)	- -	- -	- -	- -	- -	1096 93.8

Table 3.3.5-3: Distribution of ECCE by SDP, CSR 2013-2018

Years	2013	2014	2015	2016	2017	2018
	n %	n %	n %	n %	n %	n %
All Centres	37 2.5	18 0.8	13 0.7	10 0.3	51 1.5	111 2.6
PPKM-HS	37 2.5	18 0.8	13 0.7	10 0.3	51 1.5	40 1.3
KK-KKM Jitra (Kedah)	- -	- -	- -	- -	- -	71 6.1

3.3.6 Anaesthesia in Cataract Surgery

Table 3.3.6-1: Types of Anaesthesia, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
General Anesthesia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1
Local Anesthesia	150	100.	226	100.	182	100.	290	100.	350	100.	425	99.
	6	0	6	0	4	0	0	0	7	0	7	9
Type of local anaesthesia												
Topical	128	85.1	217	95.8	160	88.1	266	92.0	298	85.0	382	89.8
	2		1		7		8		1		2	
Intracameral	287	19.1	494	21.8	870	47.7	105	36.3	195	55.7	197	46.5
							4		2		9	
Combined local anaesthesia	309	20.5	584	25.8	766	42.0	984	33.9	158	45.2	168	39.7
									4		9	
Subtenon	166	11.0	123	5.4	87	4.8	86	3.0	77	2.2	120	2.8
Peribulbar	0	0.0	0	0.0	4	0.2	0	0.0	0	0.0	0	0.0
Retrobulbar	0	0.0	6	0.3	5	0.3	12	0.4	1	0.0	2	0.0
Subconjunctival	25	1.7	12	0.5	7	0.4	25	0.9	6	0.2	2	0.0
Facial block	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Types of sedation for patients under local anaesthesia												
No sedation	130	86.7	156	69.1	146	80.3	278	96.0	329	94.0	298	70.1
	5		5		4		4		5		6	
Oral sedation alone	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0
Intravenous alone	1	0.1	0	0.0	0	0.0	4	0.1	0	0.0	1	0.0
Intravenous plus oral	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Intramuscular alone	0	0.0	0	0.0	0	0.0	4	0.1	1	0.0	0	0.0

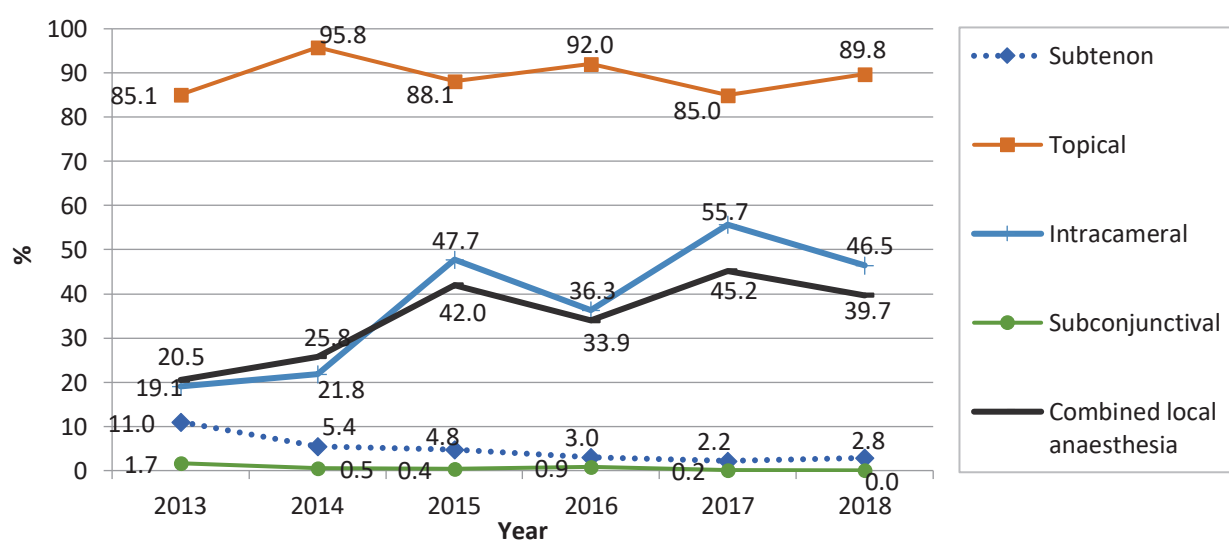


Figure 3.3.6-1: Types of Anaesthesia, CSR 2013-2018

3.3.7 Intraocular Lens Implantation

Table 3.3.7-1: Intraocular Lens Implantation, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
With IOL	1499	99.5	2256	99.6	1820	99.8	2889	99.6	3482	99.3	4238	99.5
Without IOL	7	0.5	7	0.3	4	0.2	11	0.4	25	0.7	22	0.5
Not Available	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
IOL Placement												
No of IOL	1499		2259		1820		2889		3482		4238	
PCIOL	1472	98.2	2218	98.2	1798	98.8	2860	99.0	3447	99.0	4185	98.7
ACIOL	24	1.6	36	1.6	20	1.1	25	0.9	29	0.8	41	1.0
Scleral Fixated IOL	0	0.0	2	0.1	0	0.0	0	0.0	1	0.0	2	0.0
Others	3	0.2	3	0.1	2	0.1	4	0.1	5	0.1	2	0.0
Not Available /missing	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	0.2
Materials of IOL												
No of IOL	1499		2259		1820		2889		3482		4238	
1. Acrylic	1396	93.1	2109	93.4	1643	90.3	2410	83.4	3227	92.7	3894	91.9
2. PMMA	23	1.5	26	1.2	13	0.7	13	0.4	66	1.9	38	0.9
3. Silicone	39	2.6	86	3.8	92	5.1	19	0.7	28	0.8	9	0.2
4. Others	9	0.6	12	0.5	7	0.4	431	14.9	141	4.0	286	6.7
Not Available/missing	32	2.1	26	1.2	65	3.6	16	0.6	20	0.6	11	0.3
Types of IOL												
No of IOL	1499		2259		1820		2889		3482		4238	
1. Foldable	1453	96.9	2210	97.8	1741	95.7	2858	98.9	3438	98.7	4201	99.1
2. Non-foldable	21	1.4	25	1.1	15	0.8	16	0.6	28	0.8	31	0.7
Not Available/missing	25	1.7	24	1.1	64	3.5	15	0.5	16	0.5	6	0.1

Table 3.3.7-2: Distribution of IOL Placement, CSR 2013-2018

Cataract Surgery With IOL						
	N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL
		n	%	n	%	n %
2013	1506	1472	97.7	24	1.6	0 0.0
2014	2259	2218	98.2	36	1.6	2 0.1
2015	1820	1798	98.8	20	1.1	0 0.0
2016	2900	2860	98.6	25	0.9	0 0.0
2017	3507	3447	98.3	29	0.8	1 0.0

Cataract Surgery With IOL							
2018	N	Posterior Chamber IOL		Anterior Chamber IOL		Scleral Fixated IOL	
		n	%	n	%	n	%
PPKM-HS	3079	3042	98.8	35	1.1	1	0.0
KK-KKM Jitra (Kedah)	1159	1143	98.6	6	0.5	1	0.1

3.4 Intra-operative Complications

3.4.1 Intra-operative Complications by Years

Table 3.4.1-1: Distribution of Type of Intra-operative Complications, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
Patient with intra-op complication	52	3.5	61	2.7	53	2.9	53	1.8	92	2.6	86	2.0
Types of complications												
PCR	2	0.1	29	1.3	28	1.5	30	1.0	43	1.2	38	0.9
Zonular dehiscence	11	0.7	20	0.9	16	0.9	11	0.4	35	1.0	31	0.7
Vitreous loss	22	1.5	27	1.2	12	0.7	20	0.7	31	0.9	26	0.6
Drop nucleus	7	0.5	5	0.2	2	0.1	4	0.1	6	0.2	6	0.1
Suprachoroidal haemorrhage	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0
Central corneal oedema	1	0.1	1	0.0	1	0.1	0	0.0	0	0.0	1	0.0
Others	40	2.7	6	0.3	11	0.6	13	0.4	20	0.6	14	0.3

PCR is inaccurate due to data collection error

Table 3.4.1-2: Distribution of Type of Intra-operative Complications – Posterior Capsule Rupture, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
No. of patients (N)	1506		2266		1824		2900		3507		4261	
	n	%	n	%	n	%	n	%	n	%	n	%
Patient with intra-op complication	52	3.5	61	2.7	53	2.9	53	1.8	92	2.6	86	2.0
Types of complications												
PCR and Others	2	0.1	15	0.7	9	0.5	16	0.6	25	0.7	17	0.4
PCR Only	0	0.0	14	0.6	19	1.0	14	0.5	18	0.5	21	0.5

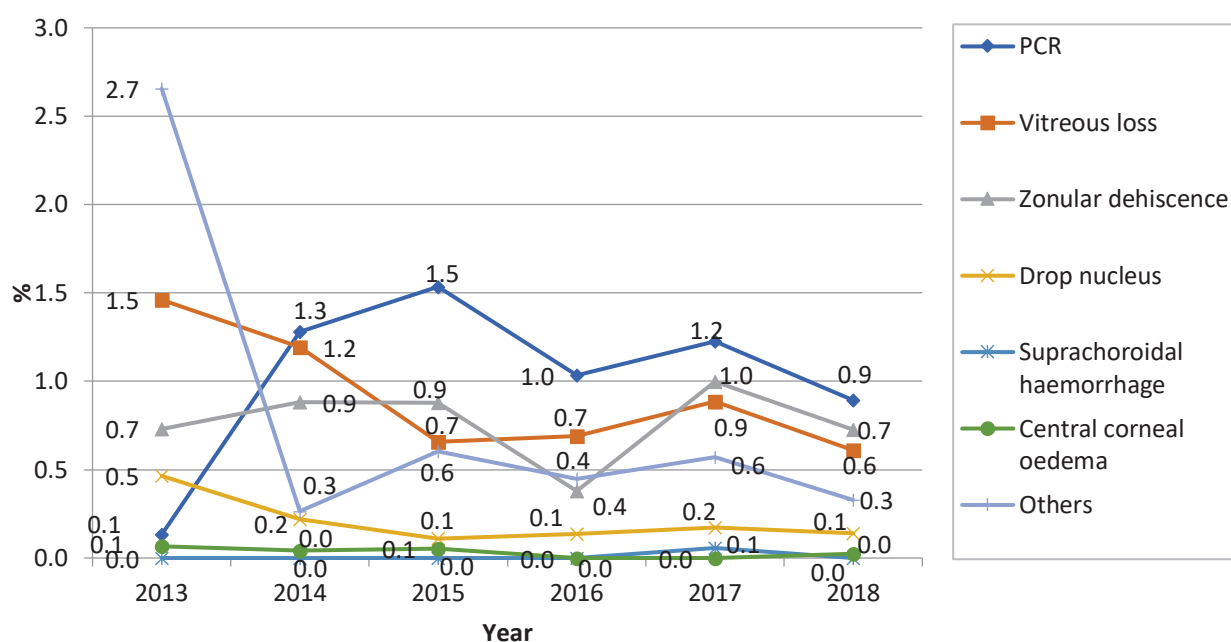


Figure 3.4.1-1: Distribution of Specific Type of Intra-operative Complications, CSR 2013-2018

Table 3.4.1-3: Distribution of Types of Intra-operative Complications, CSR 2013-2018

PPKM-HS	No. of patients (N)	Any intra-op complication		PCR		Vitreous loss		Zonular Dehiscence		Nucleus drop (or dropped nucleus)		Suprachoroidal Haemorrhage		Central Corneal Edema		Others	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2013	1506	52	3.5	2	0.1	22	1.5	11	0.7	7	0.5	0	0.0	1	0.1	40	2.7
2014	2266	61	2.7	29	1.3	27	1.2	20	0.9	5	0.2	0	0.0	1	0.0	6	0.3
2015	1824	53	2.9	28	1.5	12	0.7	16	0.9	2	0.1	0	0.0	1	0.1	11	0.6
2016	2900	53	1.8	30	1.0	20	0.7	11	0.4	4	0.1	0	0.0	0	0.0	13	0.4
2017	3507	92	2.6	43	1.2	31	0.9	35	1.0	6	0.2	2	0.1	0	0.0	20	0.6

2018	No. of patients (N)	Any intra-op complication		PCR		Vitreous loss		Zonular Dehiscence		Nucleus drop (or dropped nucleus)		Suprachoroidal Haemorrhage		Central Corneal Edema		Others	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
PPKM-HS	3093	69	2.2	29	0.9	18	0.6	25	0.8	5	0.2	0	0.0	1	0.0	12	0.4
KK-KKM Jitra (Kedah)	1168	17	1.5	9	0.8	8	0.7	6	0.5	1	0.1	0	0.0	0	0.0	2	0.2

3.4.2 PCR

Table 3.4.2-1: PCR, CSR 2013-2018

Hospital	2013			2014			2015			2016			2017			2018		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
PPKM-HS	1506	2	0.13	2266	29	1.28	1824	28	1.54	2900	30	1.0	3507	43	1.2	3093	29	0.9
KK-KKM Jitra (Kedah)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1168	9	0.8

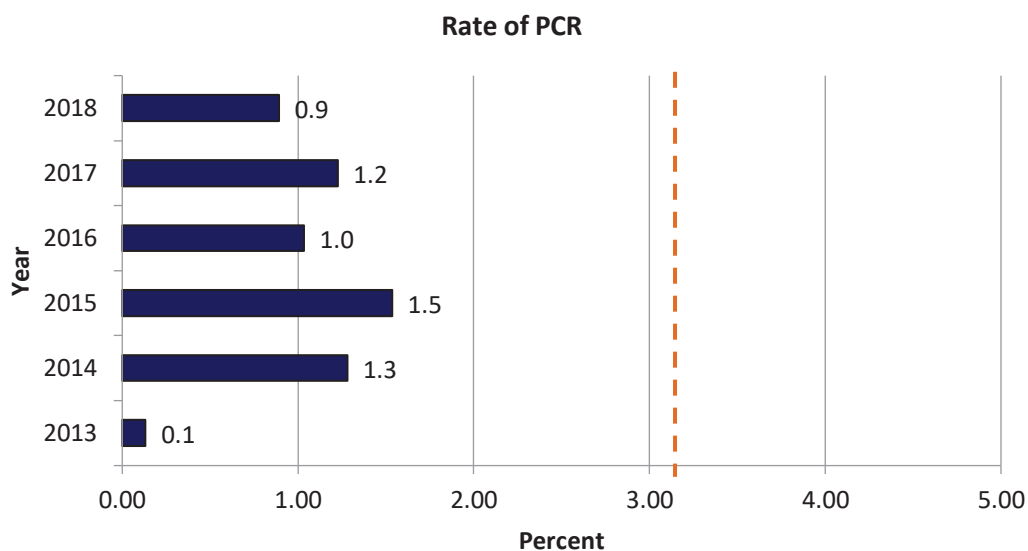


Figure 3.4.2-1: PCR (all surgeries) (National standard set at <3.0%), CSR 2013-2018

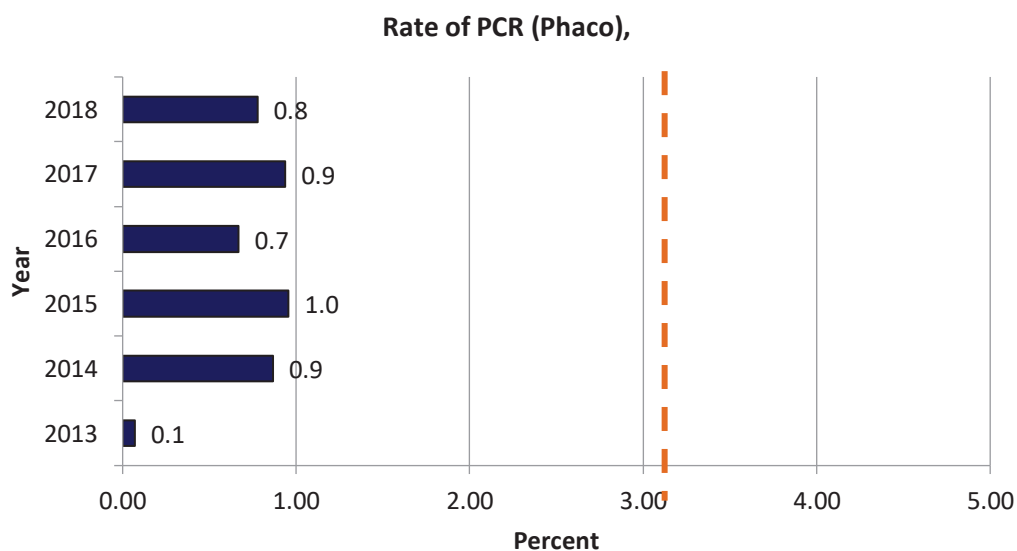


Figure 3.4.2-2: PCR (Phaco only) (National standard set at <3.0%), CSR 2013-2018

3.4.3 PCR by Type of Cataract Surgery

Table 3.4.3-1: PCR by Type of Cataract Surgery, CSR 2013-2018

Year	2013			2014			2015			2016			2017			2018		
No. of patients	1506			2266			1824			2900			3507			4261		
Total PCR	2			29			28			30			43			38		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
Phaco	1432	1	0.1	2196	19	0.9	1777	17	1.0	2841	19	0.7	3419	32	0.9	4117	32	0.8
ECCE	37	1	2.7	18	0	0.0	13	1	7.7	10	0	0.0	51	10	19.6	111	6	5.4
Lens Aspiration	3	0	0.0	5	0	0.0	3	0	0.0	16	0	0.0	26	0	0.0	28	0	0.0
ICCE	2	0	0.0	4	0	0.0	7	0	0.0	6	0	0.0	6	0	0.0	5	0	0.0
Phaco → ECCE	25	0	0.0	39	10	25.6	23	10	43.5	25	11	44.0	-	-	-	-	-	-

3.5 Cataract Surgery Outcome

3.5.1 Post-operative Complications Record and Ascertainment

Table 3.5.1-1: Distribution of Cataract Surgery with Post-operative Complication Record, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Total number of cataract surgery registered to CSR	1506	2266	1824	2900	3507	4261
Cataract surgery with post-operative complication record	1500	2251	1535	2269	3269	3819
Ascertainment on post-operative complication (%)	99.6	99.3	84.2	78.2	93.2	89.6
Cataract surgery with visual outcome record	1441	2183	1500	2215	3159	3706
Ascertainment on visual outcome (%)	95.7	96.3	82.2	76.4	90.1	87.0

3.5.2 Post-operative Infectious Endophthalmitis

Table 3.5.2-1: Post-operative Infectious Endophthalmitis, CSR 2013-2018

Year	2013	2014	2015	2016	2017	2018
Eyes with post-operative complication records (N)	1506	2251	1535	2269	3269	3819
Eyes with post-operative infectious endophthalmitis (n)	0	0	0	0	0	2
Percentage of eyes with post-operative endophthalmitis (%)	0.0	0.0	0.0	0.0	0.0	0.1

3.5.3 Post-operative Follow-up Period

Table 3.5.3-1: Median Follow-up Period for Eyes with Unaided Vision (in weeks) by Types of Surgery, CSR 2013-2018

Types of surgery	2013					2014				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	1445	1443	9	6	12	2189	2187	7	6	10
Phaco	1377	1375	9	6	12	2122	2120	7	6	11
ECCE	35	35	12	7	17	18	18	11.5	10	13
Phaco → ECCE	23	23	17	11	21	37	37	11	7	12
ICCE	1	1	11	-	-	3	3	10	1	14
Lens aspiration	3	3	12	6	12	5	5	7	3	7

Types of surgery	2015					2016				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
All surgeries	1509	1509	7	7	11	2215	2215	7	7	11
Phaco	1479	1479	7	7	11	2179	2179	7	7	10
ECCE	9	9	9	6	17	5	5	11	10	11
Phaco → ECCE	16	16	12	9	16.5	17	17	11	9	12
ICCE	3	3	11	6	12	2	2	9	7	11
Lens aspiration	2	2	9.5	7	12	11	11	7	5	7

Types of surgery	2017					2018				
	N	n	Media n	25 th percentile	75 th percentile	N	n	Media n	25 th percentile	75 th percentile
ICCE	4	4	23.5	15.5	30	2	2	17.5	6	29
ECCE	42	42	10	7	12	102	102	11	9	12
All surgeries	3160	3159	7	6	9	3706	3706	7	7	11
Phaco	3091	3090	7	6	9	3578	3578	7	7	10
Lens aspiration	20	20	7	6.5	9	24	24	7	6	7
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-

n = No. of available information

Table 3.5.3-2: Median Follow-up Period for Eyes with Refracted Vision (in weeks) by Types of Surgery, CSR 2013-2018

Types of surgery	2013					2014				
	N	n	Median	25 th percentile	75 th percentile	N	n	Median	25 th percentile	75 th percentile
All surgeries	1377	1375	10	6	12	2048	2048	8	7	11
Phaco	1318	1316	10	6	12	1989	1989	7	7	11
ECCE	29	29	12	8	15	18	18	11.5	10	13
Phaco → ECCE	21	21	17	12	21	33	33	11	10	13
ICCE	2	2	13.5	11	16	2	2	12	10	14
Lens aspiration	3	3	12	6	12	2	2	8	7	9

Types of surgery	2015					2016				
	N	n	Median	25 th percentile	75 th percentile	N	n	Median	25 th percentile	75 th percentile
All surgeries	1520	1520	7	7	11	2206	2206	7	7	11
Phaco	1493	1493	7	7	11	2169	2169	7	7	10
ECCE	8	8	8	5.5	14	5	5	11	10	11
Phaco → ECCE	15	15	12	9	17	16	16	11	9.5	12.5
ICCE	3	3	11	6	12	2	2	9	7	11
Lens aspiration	1	1	7	7	7	12	12	7	5.5	7

Types of surgery	2017					2018				
	N	n	Median	25 th percentile	75 th percentile	N	n	Median	25 th percentile	75 th percentile
ICCE	4	4	23.5	15.5	30	1	1	29	-	-
ECCE	36	36	11.5	8	13	88	88	11	9	12
All surgeries	3035	3035	7	6	9	3558	3558	7	7	11
Phaco	2973	2973	7	6	9	3445	3445	7	7	11
Lens aspiration	20	20	7	6.5	9	24	24	7	6	7
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-

n = No. of available information

3.5.4 Visual Acuity

Table 3.5.4-1: Post-operative Visual Acuity, All Eyes, and CSR 2013-2018

Year	2013				2014				2015				2016				2017				2018			
VA	Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
6/5	1	0.1	1	0.1	1	0.0	1	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	3	0.1	0	0.0	0	0.0
6/6	210	13.9	938	62.3	396	17.5	1339	59.1	267	14.6	980	53.7	384	13.2	1516	52.3	594	16.9	1840	52.5	574	13.5	1548	36.3
6/9	448	29.8	267	17.7	710	31.3	469	20.7	555	30.4	409	22.4	825	28.4	474	16.3	986	28.1	658	18.8	1033	24.2	954	22.4
6/12	212	14.1	65	4.3	342	15.1	113	5.0	205	11.2	85	4.7	283	9.8	111	3.8	417	11.9	160	4.6	544	12.8	311	7.3
6/18	222	14.7	38	2.5	254	11.2	40	1.8	214	11.7	26	1.4	273	9.4	48	1.7	448	12.8	130	3.7	516	12.1	206	4.8
6/24	81	5.4	21	1.4	126	5.6	25	1.1	96	5.3	13	0.7	128	4.4	18	0.6	170	4.8	63	1.8	263	6.2	107	2.5
6/36	89	5.9	11	0.7	128	5.6	20	0.9	48	2.6	1	0.1	93	3.2	15	0.5	156	4.4	49	1.4	236	5.5	110	2.6
6/60	81	5.4	18	1.2	91	4.0	20	0.9	51	2.8	1	0.1	91	3.1	10	0.3	140	4.0	51	1.5	191	4.5	91	2.1
5/60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	0.0	3	0.1	1	0.0	16	0.4	4	0.1
4/60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	2	0.1	0	0.0	7	0.2	2	0.0
3/60	37	2.5	8	0.5	52	2.3	10	0.4	17	0.9	1	0.1	55	1.9	3	0.1	79	2.3	29	0.8	109	2.6	58	1.4
2/60	15	1.0	1	0.1	28	1.2	1	0.0	19	1.0	0	0.0	22	0.8	1	0.0	47	1.3	14	0.4	48	1.1	34	0.8
1/60	7	0.5	2	0.1	20	0.9	1	0.0	16	0.9	1	0.1	22	0.8	2	0.1	39	1.1	11	0.3	53	1.2	36	0.8
CF	30	2.0	5	0.3	25	1.1	5	0.2	10	0.5	1	0.1	21	0.7	3	0.1	49	1.4	16	0.5	67	1.6	50	1.2
HM	11	0.7	2	0.1	10	0.4	4	0.2	6	0.3	2	0.1	12	0.4	3	0.1	21	0.6	7	0.2	38	0.9	37	0.9
PL	1	0.1	0	0.0	2	0.1	0	0.0	3	0.2	0	0.0	0	0.0	0	0.0	4	0.1	2	0.1	8	0.2	7	0.2
NPL	0	0.0	0	0.0	4	0.2	0	0.0	2	0.1	0	0.0	2	0.1	0	0.0	5	0.1	1	0.0	3	0.1	3	0.1
Missing	61	4.05	129	8.57	77	3.4	218	9.6	315	17.3	304	16.7	685	23.6	694	23.9	347	9.9	472	13.5	555	13.0	703	16.5
Total	1506	100	1506	100	2266	100	2266	100	1824	100	1824	100	2900	100	2900	100	3507	100	3507	100	4261	100	4261	100

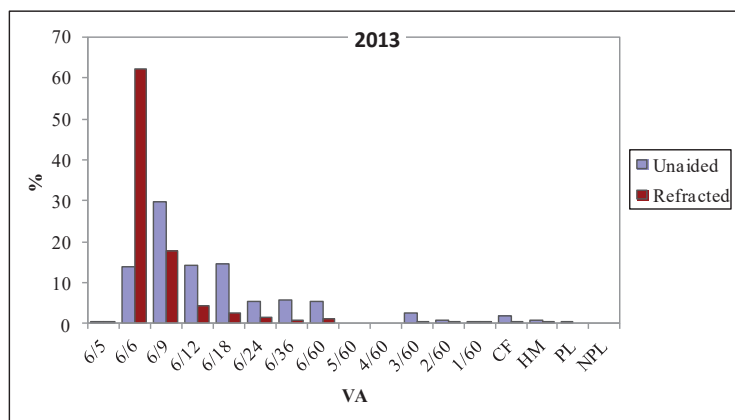


Figure 3.5.4-1: Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2013

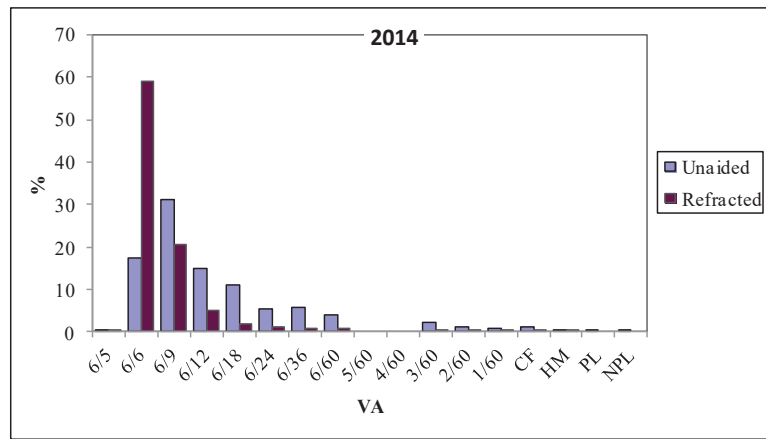


Figure 3.5.4-2: Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2014

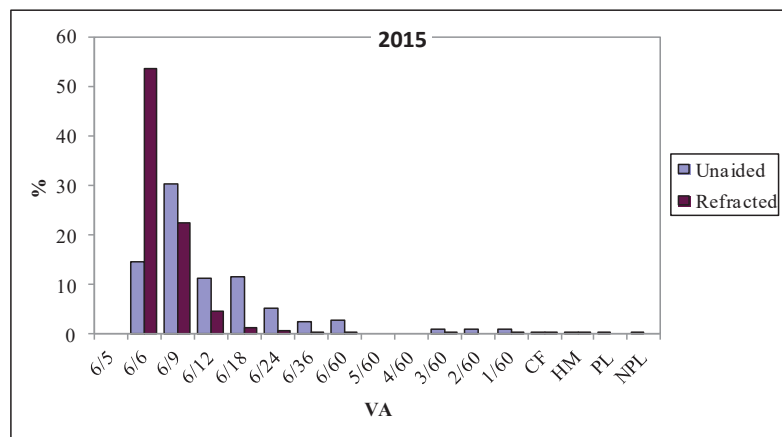


Figure 3.5.4-3: Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2015

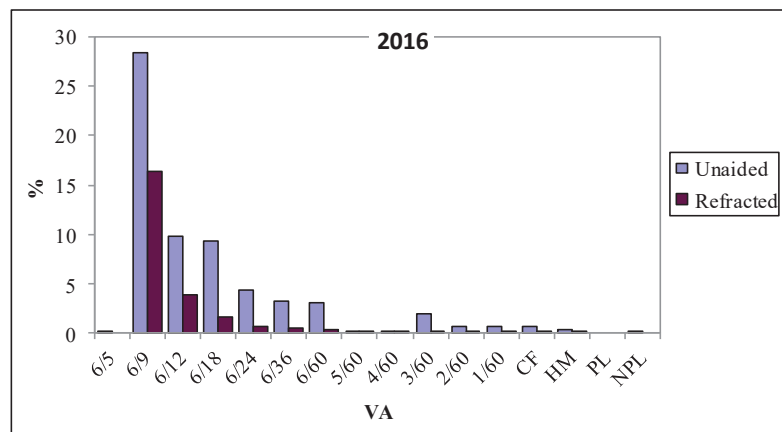


Figure 3.5.4-4: Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2016

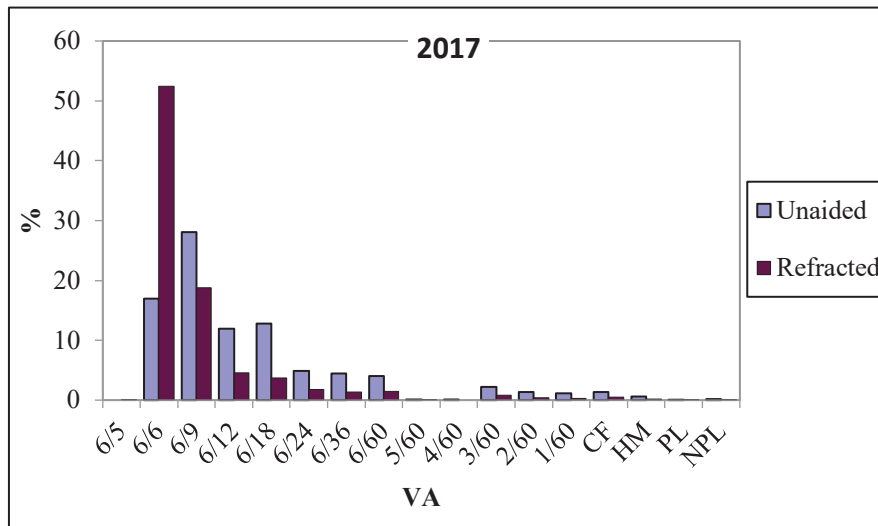


Figure 3.5.4-5: Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2017

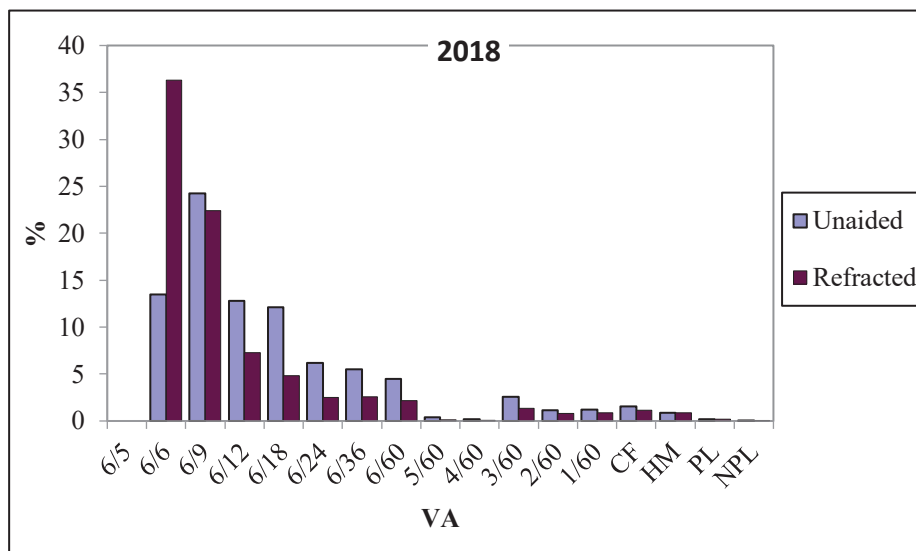


Figure 3.5.4-6: Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2018

Table 3.5.4-2: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013-2018

Year	2013				2014				2015				2016				2017				2018			
VA	Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted		Unaided		Refracted	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
6/5	1	0.1	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0
6/6	188	15.6	834	72.5	337	20.1	1125	71.6	246	18.9	884	67.3	343	18.7	1329	72.5	549	20.0	1663	63.2	482	16.2	1312	45.7
6/9	384	31.9	213	18.5	564	33.6	328	20.9	486	37.3	346	26.3	717	39.0	394	21.5	871	31.8	548	20.8	865	29.0	757	26.3
6/12	179	14.9	47	4.1	268	16.0	65	4.1	164	12.6	59	4.5	225	12.2	65	3.5	348	12.7	123	4.7	429	14.4	242	8.4
6/18	178	14.8	19	1.7	172	10.2	23	1.5	188	14.4	16	1.2	208	11.3	21	1.1	376	13.7	102	3.9	394	13.2	156	5.4
6/24	65	5.4	12	1.0	88	5.2	13	0.8	78	6.0	8	0.6	95	5.2	7	0.4	144	5.3	52	2.0	208	7.0	79	2.7
6/36	69	5.7	7	0.6	89	5.3	9	0.6	38	2.9	0	0.0	71	3.9	6	0.3	136	5.0	39	1.5	195	6.5	89	3.1
6/60	63	5.2	10	0.9	65	3.9	2	0.1	44	3.4	0	0.0	67	3.6	4	0.2	111	4.0	38	1.4	142	4.8	67	2.3
5/60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	0.1	2	0.1	0	0.0	13	0.4	4	0.1
4/60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1	0	0.0	0	0.0	7	0.2	2	0.1
3/60	25	2.1	3	0.3	38	2.3	3	0.2	13	1.0	0	0.0	46	2.5	0	0.0	70	2.6	24	0.9	81	2.7	42	1.5
2/60	12	1.0	1	0.1	21	1.3	0	0.0	16	1.2	0	0.0	20	1.1	0	0.0	43	1.6	13	0.5	36	1.2	26	0.9
1/60	6	0.5	0	0.0	16	1.0	0	0.0	14	1.1	0	0.0	17	0.9	1	0.1	34	1.2	8	0.3	41	1.4	27	0.9
CF	26	2.2	3	0.3	13	0.8	2	0.1	7	0.5	0	0.0	16	0.9	1	0.1	39	1.4	14	0.5	50	1.7	39	1.4
HM	8	0.7	1	0.1	7	0.4	1	0.1	5	0.4	1	0.1	9	0.5	2	0.1	15	0.5	5	0.2	29	1.0	27	0.9
PL	0	0.0	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	4	0.1	3	0.1
NPL	0	0.0	0	0.0	2	0.1	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0	3	0.1	1	0.0	2	0.1	2	0.1
Total	1204	100	1151	100	1680	100	1571	100	1302	100	1314	100	1839	100	1832	100	2742	100	2633	100	2978	100	2874	100

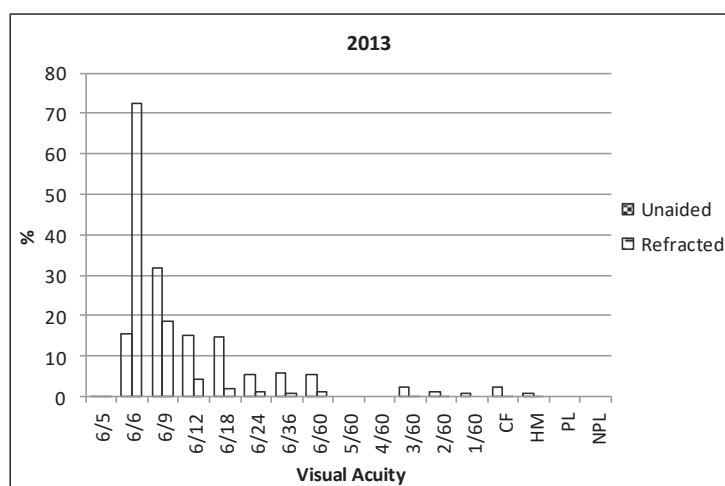


Figure 3.5.4-7: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013

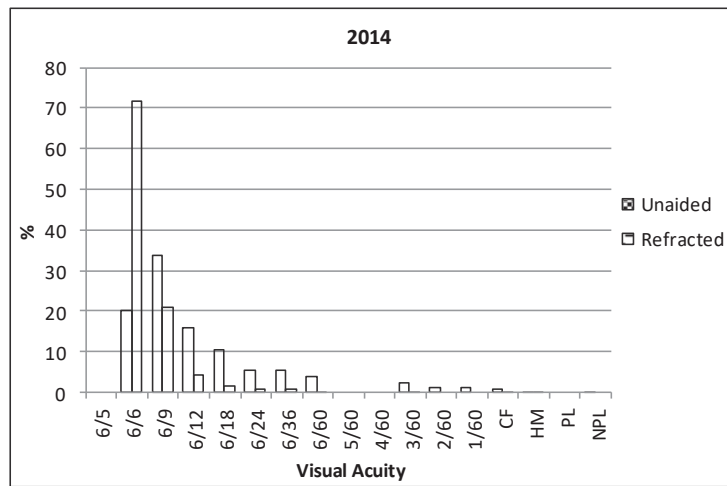


Figure 3.5.4-8: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2014

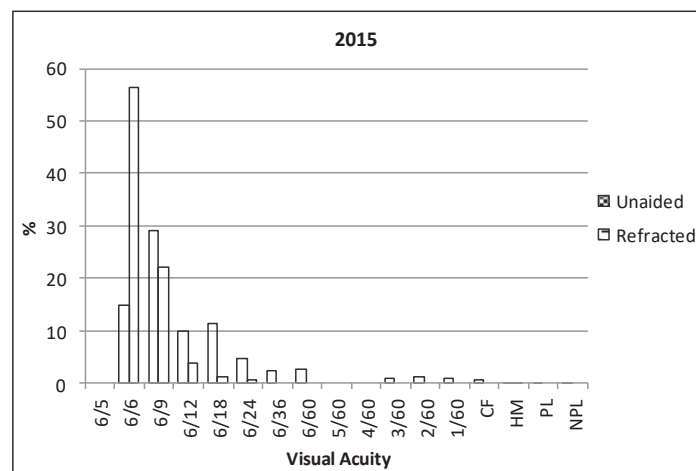


Figure 3.5.4-9: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2015

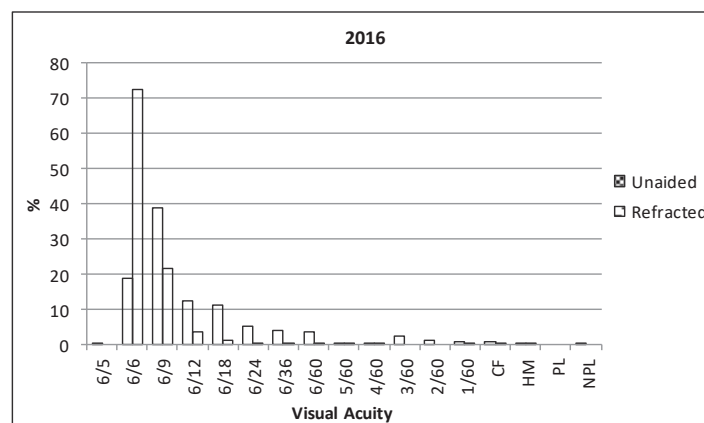


Figure 3.5.4-10: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2016

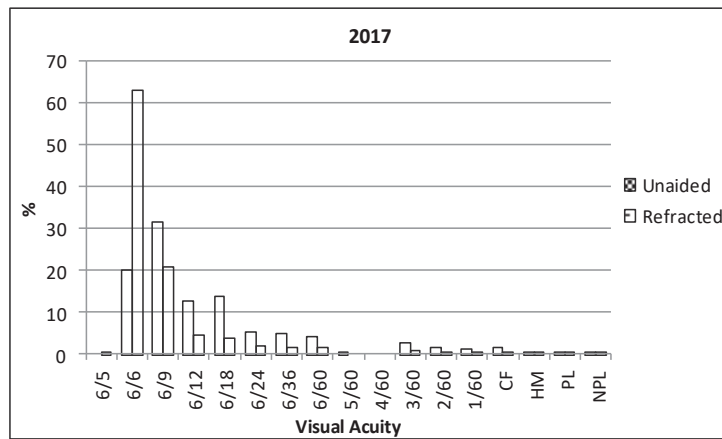


Figure 3.5.4-11: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2017

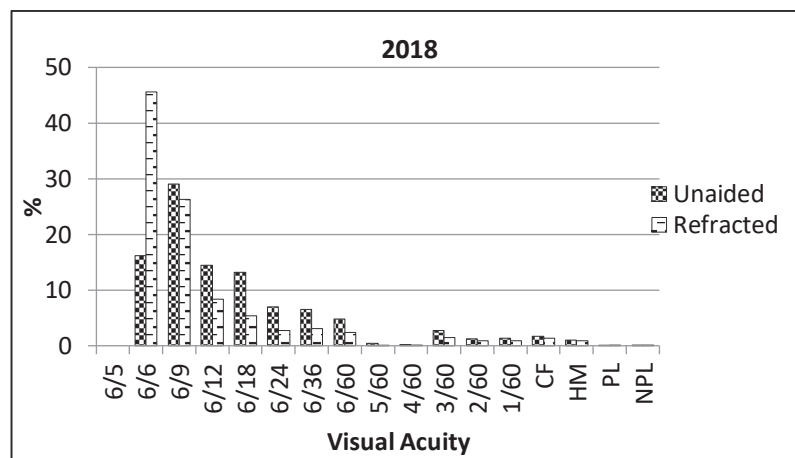


Figure 3.5.4-12: Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2018

3.5.5 Post-operative Visual Acuity 6/12 or Better Among Eyes without Ocular Co-morbidity

Table 3.5.5-1: Post-operative Visual Acuity 6/12 or Better for Eyes without Ocular Co-morbidities by Types of Surgery, CSR 2013-2018 – change sequence

	2013						2014					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	1204	752	62.5	1151	1095	95.1	1680	1169	69.6	1571	1518	96.6
Phaco	1147	729	63.6	1101	1057	96.0	1645	1154	70.2	1539	1491	96.9
ECCE	30	11	36.7	26	19	73.1	7	4	57.1	7	6	85.7
Phaco → ECCE	20	9	45.0	18	14	77.8	24	9	37.5	22	18	81.8
Lens Aspiration	2	0	0.0	2	2	100.0	2	2	100.0	1	1	100.0
ICCE	1	1	100.0	1	0	0.0	2	0	0.0	2	2	100.0

	2015						2016					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	1302	896	68.8	1314	1289	98.1	1839	1286	69.9	1832	1788	97.6
Phaco	1282	888	69.3	1296	1277	98.5	1818	1272	70.0	1811	1770	97.7
ECCE	4	1	25.0	3	3	100.0	2	1	50.0	2	2	100.0
Phaco → ECCE	12	5	41.7	12	8	66.7	12	7	58.3	11	8	72.7
Lens Aspiration	2	1	50.0	1	1	100.0	7	6	85.7	8	8	100.0
ICCE	2	1	50.0	2	0	0.0	0	0	0.0	0	0	0.0

	2017						2018					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	2742	1768	64.5	2633	2336	88.7	2978	1776	59.6	2874	2311	80.4
Phaco	2685	1743	64.9	2581	2298	89.0	2878	1741	60.5	2786	2252	80.8
ECCE	36	12	33.3	32	21	65.6	80	20	25.0	69	40	58.0
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-	-	-
Lens Aspiration	14	12	85.7	14	14	100.0	18	14	77.8	18	18	100.0
ICCE	4	1	25.0	4	2	50.0	2	1	50.0	1	1	100.0

Table 3.5.5-2: Post-operative Visual Acuity 6/18 or Better for Eyes without Ocular Co-morbidities by Types of Surgery, CSR 2013-2018

WHO Classification	2013						2014					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	1204	930	77.2	1151	1114	96.8	1680	1341	79.8	1571	1541	98.1
Phaco	1147	896	78.1	1101	1070	97.2	1645	1321	80.3	1539	1514	98.4
ECCE	30	15	50.0	26	22	84.6	7	5	71.4	7	6	85.7
Phaco → ECCE	20	13	65.0	18	16	88.9	24	11	45.8	22	18	81.8
Lens Aspiration	2	2	100.0	2	2	100.0	2	2	100.0	1	1	100.0
ICCE	1	1	100.0	1	1	100.0	2	2	100.0	2	2	100.0

WHO Classification	2015						2016					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%
All Surgeries	1302	1084	83.3	1314	1305	99.3	1839	1494	81.2	1832	1809	98.7
Phaco	1282	1072	83.6	1296	1290	99.5	1818	1479	81.4	1811	1791	98.9
ECCE	4	2	50.0	3	3	100.0	2	2	100.0	2	2	100.0
Phaco → ECCE	12	8	66.7	12	10	83.3	12	7	58.3	11	8	72.7
Lens Aspiration	2	1	50.0	1	1	100.0	7	6	85.7	8	8	100.0
ICCE	2	1	50.0	2	1	50.0	0	0	0.0	0	0	0.0

WHO Classification	2017						2018					
	Unaided			Refracted			Unaided			Refracted		
	N	n	%	N	n	%	N	n	%	N	n	%

All Surgeries	2742	2144	78.2	2633	2438	92.6	2978	2170	72.9	2874	2467	85.8
Phaco	2685	2112	78.7	2581	2398	92.9	2878	2125	73.8	2786	2403	86.3
ECCE	36	18	50.0	32	23	71.9	80	26	32.5	69	45	65.2
Phaco → ECCE	-	-	-	-	-	-	-	-	-	-	-	-
Lens Aspiration	14	13	92.9	14	14	100.0	18	17	94.4	18	18	100.0
ICCE	4	1	25.0	4	2	50.0	2	2	100.0	1	1	100.0

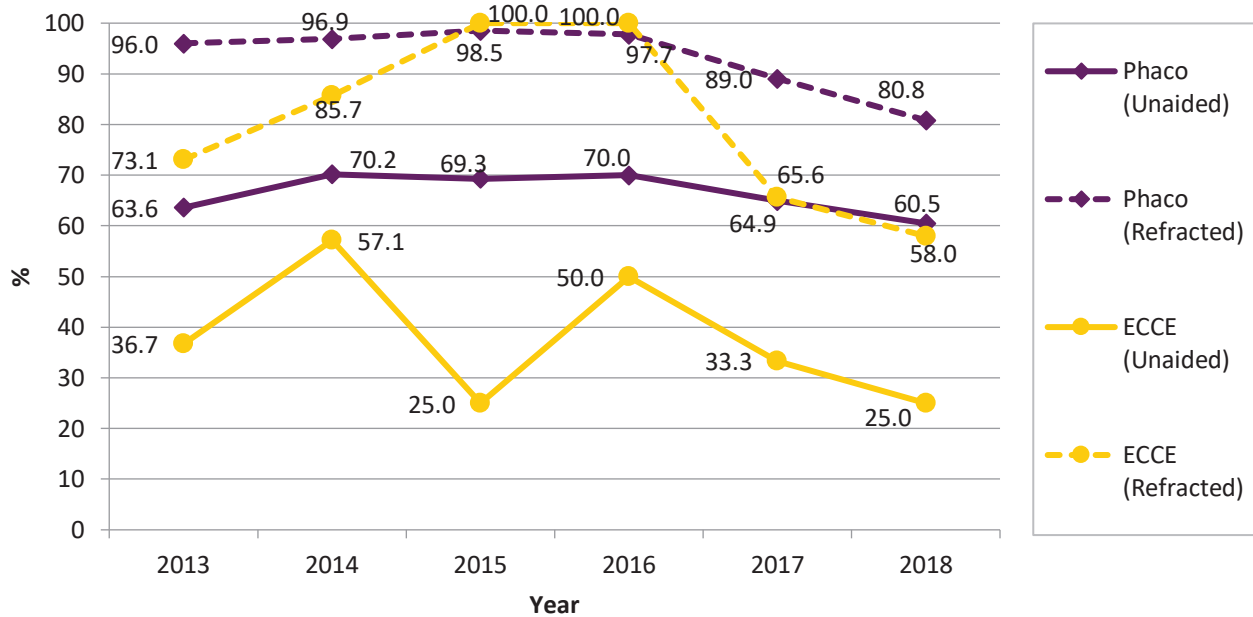


Figure 3.5.5-1: Post-operative Visual Acuity 6/12 or Better for Eyes without Ocular Co-morbidities by ECCE and Phaco, CSR 2013-2018

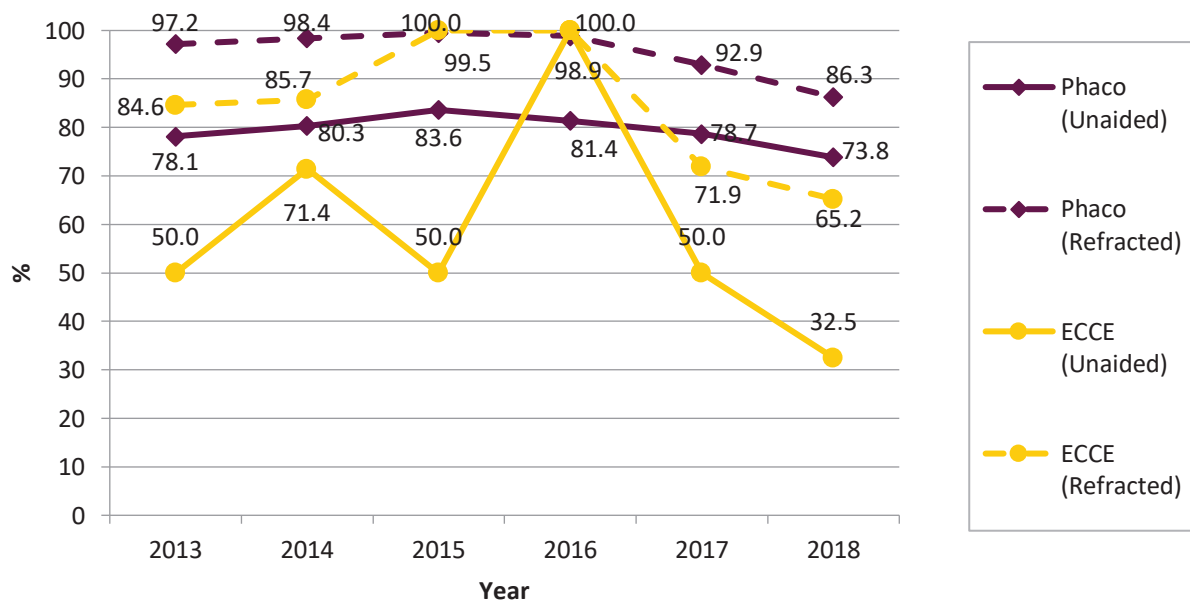


Figure 3.5.5-2: Post-operative Visual Acuity 6/18 or Better for Eyes without Ocular Co-morbidities by ECCE and Phaco, CSR 2013-2018

Table 3.5.5-3: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidities by Complications and Types of Surgery, CSR 2013-2018

2013	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	24	17	70.8	13	11	84.6	2	1	50.0	0	0	0	0	0	0	8	4	50.0
No intra-op complications	1127	1078	95.7	1088	1046	96.1	24	18	75.0	2	2	100.0	1	0	0	10	10	100.0

2014	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	36	28	77.8	23	19	82.6	0	0	0.0	0	0	0	1	1	100.0	12	8	66.7
No intra-op complications	1535	1490	97.1	1516	1472	97.1	7	6	85.7	1	1	100.0	1	1	100.0	10	10	100.0

2015	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	28	23	82.1	17	17	100.0	1	1	100.0	0	0	0.0	1	0	0.0	9	5	55.6
No intra-op complications	1286	1266	98.4	1279	1260	98.5	2	2	100.0	1	1	100.0	1	0	0.0	3	3	100.0

2016	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	17	14	82.4	12	12	100.0	0	0	0.0	0	0	0.0	0	0	0.0	5	2	40.0
No intra-op complications	1815	1774	97.7	1799	1758	97.7	2	2	100.0	8	8	100.0	0	0	0.0	6	6	100.0

2017	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			Lens Aspiration			ICCE			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	58	41	70.7	39	29	74.4	16	9	56.3	0	0	0.0	2	2	100.0	-	-	-
No intra-op complications	2575	2295	89.1	2542	2269	89.3	16	12	75.0	14	14	100.0	2	0	0.0	-	-	-

2018	Types of Cataract Surgery																	
	All Surgeries			Phaco			ECCE			ICCE			Lens Aspiration			Phaco → ECCE		
	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	46	27	58.7	36	21	58.3	9	5	55.6	1	1	100.0	0	0	0.0	-	-	-
No intra-op complications	2828	2284	80.8	2750	2231	81.1	60	35	58.3	0	0	0.0	18	18	100.0	-	-	-

Table 3.5.5-4: Post-operative Refracted Visual Acuity 6/18 or Better in Eyes without Ocular Co-morbidities by Complications and Types of Surgery, CSR 2013-2018

2013	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	24	20	83.3	13	11	84.6	2	2	100.0	0	0	0.0
No intra-op complications	1127	1094	97.1	1088	1059	97.3	24	20	83.3	2	2	100.0

2014	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	36	29	80.6	23	20	87.0	0	0	0.0	0	0	0.0
No intra-op complications	1535	1512	98.5	1516	1494	98.5	7	6	85.7	1	1	100.0

2015	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	28	25	89.3	17	17	100.0	1	1	100.0	0	0	0.0
No intra-op complications	1286	1280	99.5	1279	1273	99.5	2	2	100.0	1	1	100.0

2016	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	17	14	82.4	12	12	100.0	0	0	0.0	0	0	0.0
No intra-op complications	1815	1795	98.9	1799	1779	98.9	2	2	100.0	8	8	100.0

2017	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	58	44	75.9	39	32	82.1	16	9	56.3	0	0	0.0
No intra-op complications	2575	2394	93.0	2542	2366	93.1	16	14	87.5	14	14	100.0

2018	Types of Cataract Surgery											
	All Surgeries			Phaco			ECCE			Lens Aspiration		
	N	n	%	N	n	%	N	n	%	N	n	%
With intra-op complications	46	30	65.2	36	23	63.9	9	6	66.7	1	1	100.0
No intra-op complications	2828	2437	86.2	2750	2380	86.5	60	39	65.0	0	0	0.0

3.5.6 Factors Contributing to Post-operative Refracted Visual Acuity of Worse than 6/12

Table 3.5.6-1: Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in All Eyes, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N (total no. of post-op refracted vision worse than 6/12)	106		126		46		105		374		745	
Preexisting ocular co-morbidity	0	0.0	2	22.8	4	8.7	2	21.0	2	5.3	2	3.0
High astigmatism	0	0.0	2	1.6	3	6.5	2	1.9	3	0.8	1	2.3
Cystoid macular oedema	0	0.0	3	2.4	0	0.0	0	0.0	2	0.5	6	0.8
Posterior capsular opacity	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
Corneal decompensation	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	1	0.1
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Decentered IOL	0	0.0	0	0.0	1	2.2	0	0.0	0	0.0	0	0.0
Retinal detachment	0	0.0	1	0.8	0	0.0	0	0.0	0	0.0	0	0.0
Others	2	1.9	6	4.8	6	13.0	8	7.6	7	1.9	4	5.3

Table 3.5.6-2: Factors Contributing to Post-operative Refracted VA of Worse than 6/18 in All Eyes, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N (total no. of post-op refracted vision worse than 6/18)	68		86		20		57		244		539	
Preexisting ocular co-morbidity	0	0.0	2	25.6	4	20.0	1	17.5	1	5.7	1	3.2
High astigmatism	0	0.0	1	1.2	1	5.0	2	3.5	2	0.8	1	2.0
Cystoid macular oedema	0	0.0	3	3.5	0	0.0	0	0.0	2	0.8	5	0.9
Posterior capsular opacity	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.4
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corneal decompensation	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
Decentered IOL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retinal detachment	0	0.0	1	1.2	0	0.0	0	0.0	0	0.0	0	0.0
Others	2	2.9	6	7.0	2	10.0	5	8.8	5	2.0	3	6.1

Table 3.5.6-3: Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in Eyes without Preexisting Ocular co-morbidity, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N	56		53		25		44		297		563	
Preexisting ocular co-morbidity (not detected pre-operatively)	0	0.0	6	11.3	1	4.0	0	0.0	1	0.3	3	0.5
High astigmatism	0	0.0	1	1.9	2	8.0	1	2.3	2	0.7	12	2.1
Cystoid macular oedema	0	0.0	2	3.8	0	0.0	0	0.0	0	0.0	2	0.4
Corneal decompensation	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	1	0.2
Posterior capsular opacity	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Decentered IOL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retinal detachment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	2	3.6	4	7.5	5	20.0	4	9.1	5	1.7	35	6.2

Table 3.5.6-4: Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in Eyes without Preexisting Ocular co-morbidity, CSR 2013-2018

Year	2013		2014		2015		2016		2017		2018	
Factors	n	%	n	%	n	%	n	%	n	%	n	%
N	37		30		9		23		195		407	
Preexisting ocular co-morbidity (not detected pre-operatively)	0	0.0	3	10.0	1	11.1	0	0.0	1	0.5	2	0.5
High astigmatism	0	0.0	1	3.3	1	11.1	1	4.3	1	0.5	8	2.0
Cystoid macular oedema	0	0.0	2	6.7	0	0.0	0	0.0	0	0.0	2	0.5
Posterior capsular opacity	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Endophthalmitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corneal decompensation	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0
Decentered IOL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retinal detachment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	2	5.4	4	13.3	1	11.1	3	13.0	4	2.1	26	6.4

3.5.7 Actual or Residual Refractive Power (Spherical Equivalent)

Table 3.5.7-1: Distribution of Target and Actual Refractive Power in ECCE and Phaco, CSR 2013-2018

	Target Refraction						Actual-Target Refraction					
	All Patient						All Patient					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
N	990	862	258	2062	3395	4231	870	658	190	1311	2425	3078
Mean	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3	-0.1	-0.1	-0.1	-0.1	-0.1	-0.4
SD	0.4	0.1	0.6	0.2	0.2	0.1	0.7	0.7	0.8	0.7	0.6	0.6
Median	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3	-0.1	-0.1	-0.1	-0.1	-0.1	-0.4
Minimum	-6.2	-1.3	-9.9	-1.5	-5.7	-1.7	-7.8	-4.0	-3.3	-6.0	-4.0	-8.3
Maximum	0.4	0.3	1.8	2.3	1.8	0.5	8.3	9.1	9.2	9.1	9.9	7.3

	Actual Refraction											
	ECCE						Phaco					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
N	29	18	8	5	31	85	1270	1693	1284	1822	2455	2975
Mean	-0.4	-0.3	-0.7	-1.8	-0.4	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4
SD	0.9	0.9	0.6	2.1	1.4	1.4	0.7	0.6	0.5	0.6	0.5	0.6
Median	-0.5	-0.3	-0.8	-1.0	-0.5	-0.8	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4
Minimum	-1.8	-2.8	-1.5	-5.0	-3.3	-3.0	-9	-5.8	-0.4	-6.4	-4.3	-8.3
Maximum	2.8	1.8	0.0	0.3	3.8	7.3	3.8	8.8	1.5	9.0	2.1	2.8

Note: Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis

Table 3.5.7-2: Percentage Distribution of Target and Actual Refractive Power in ECCE and Phaco, CSR 2013-2018

	Target Refraction											
	All Patients											
	2013		2014		2015		2016		2017		2018	
Dioptr (D)	n	%	n	%	n	%	n	%	n	%	n	%
-10.0-<(-9.5)	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	4	0.4	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.5-<(-4.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.0-<(-3.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3.5-<(-3.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3.0-<(-2.5)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-2.5-<(-2.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-2.0-<(-1.5)	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	0.0
-1.5-<(-1.0)	1	0.1	3	0.3	0	0.0	4	0.2	5	0.1	4	0.1
-1.0-<(-0.5)	42	4.2	53	6.1	61	23.6	89	4.3	85	2.5	139	3.3
-0.5-<0.0	936	94.5	802	93.0	192	74.4	1909	92.6	3228	95.1	4027	95.2
0.0-<0.5	6	0.6	4	0.5	2	0.8	54	2.6	66	1.9	59	1.4
0.5-<1.0	0	0.0	0	0.0	1	0.4	3	0.1	6	0.2	0	0.0
1.0-<1.5	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0
1.5-<2.0	0	0.0	0	0.0	1	0.4	0	0.0	2	0.1	0	0.0
2.0-<2.5	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0
2.5-<3.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.0-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.0-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.0-<9.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

	Actual Refraction											
	ECCE						Phaco					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Dioptre (D)	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
-10.0-<(-9.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-9.5-<(-9.0)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-9.0-<(-8.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-8.5-<(-8.0)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.0
-8.0-<(-7.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-7.5-<(-7.0)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-7.0-<(-6.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
-6.5-<(-5.0)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	2 0.2	1 0.1	0 0.0	1 0.1	0 0.0	0 0.0
-5.0-<(-4.5)	0 0.0	0 0.0	0 0.0	1 20.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	1 0.0
-4.5-<(-4.0)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	0 0.0	1 0.0	0 0.0
-4.0-<(-3.5)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	1 0.1	1 0.1	1 0.0	1 0.0
-3.5-<(-3.0)	0 0.0	0 0.0	0 0.0	0 0.0	1 3.2	0 0.0	1 0.1	3 0.2	0 0.0	0 0.0	0 0.0	0 0.0
-3.0-<(-2.5)	0 0.0	1 5.6	0 0.0	0 0.0	0 0.0	4 4.7	4 0.3	3 0.2	0 0.0	2 0.1	5 0.2	4 0.1
-2.5-<(-2.0)	0 0.0	0 0.0	0 0.0	1 20.0	1 3.2	6 7.1	5 0.4	4 0.2	7 0.5	6 0.3	3 0.1	16 0.5
-2.0-<(-1.5)	2 6.9	0 0.0	0 0.0	0 0.0	2 6.5	8 9.4	19 1.5	29 1.7	22 1.7	18 1.0	28 1.1	62 2.1
-1.5-<(-1.0)	4 13.8	1 5.6	2 25.0	0 0.0	5 16.1	10 11.8	104 8.2	145 8.6	108 8.4	133 7.3	161 6.6	265 8.9
-1.0-<(-0.5)	8 27.6	4 22.2	3 37.5	2 40.0	6 19.4	20 23.5	339 26.7	474 28.0	362 28.2	503 27.6	577 23.5	729 24.5
-0.5-<0.0	6 20.7	4 22.2	1 12.5	0 0.0	10 32.3	15 17.6	522 41.1	683 40.3	565 44.0	763 41.9	1042 42.4	1222 41.1
0.0-<0.5	3 10.3	6 33.3	2 25.0	1 20.0	0 0.0	11 12.9	209 16.5	275 16.2	185 14.4	300 16.5	489 19.9	512 17.2
0.5-<1.0	4 13.8	1 5.6	0 0.0	0 0.0	2 6.5	4 4.7	46 3.6	55 3.2	27 2.1	76 4.2	115 4.7	127 4.3
1.0-<1.5	1 3.4	0 0.0	0 0.0	0 0.0	2 6.5	2 2.4	9 0.7	14 0.8	4 0.3	14 0.8	27 1.1	26 0.9
1.5-<2.0	0 0.0	1 5.6	0 0.0	0 0.0	0 0.0	1 1.2	4 0.3	4 0.2	3 0.2	1 0.1	5 0.2	7 0.2
2.0-<2.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	2 2.4	1 0.1	0 0.0	0 0.0	1 0.1	1 0.0	0 0.0
2.5-<3.0	1 3.4	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	2 0.1

3.0-<3.5	0 0.0	0 0.0	0 0.0	0 0.0	1 3.2	1 1.2	1 0.1	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
3.5-<4.0	0 0.0	0 0.0	0 0.0	0 0.0	1 3.2	0 0.0	1 0.1	0 0.0	0 0.0	1 0.1	0 0.0	0 0.0
4.0-<4.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
4.5-<5.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
5.0-<5.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
5.5-<6.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
6.0-<6.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
6.5-<7.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
7.0-<7.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 1.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
7.5-<8.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
8.0-<8.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	0 0.0	0 0.0	0 0.0
8.5-<9.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	1 0.1	0 0.0	0 0.0
9.0-<9.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
9.5-<10.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0

Eyes with actual refractive power (SE) of more than +10.0D and -10.0D were excluded from analysis

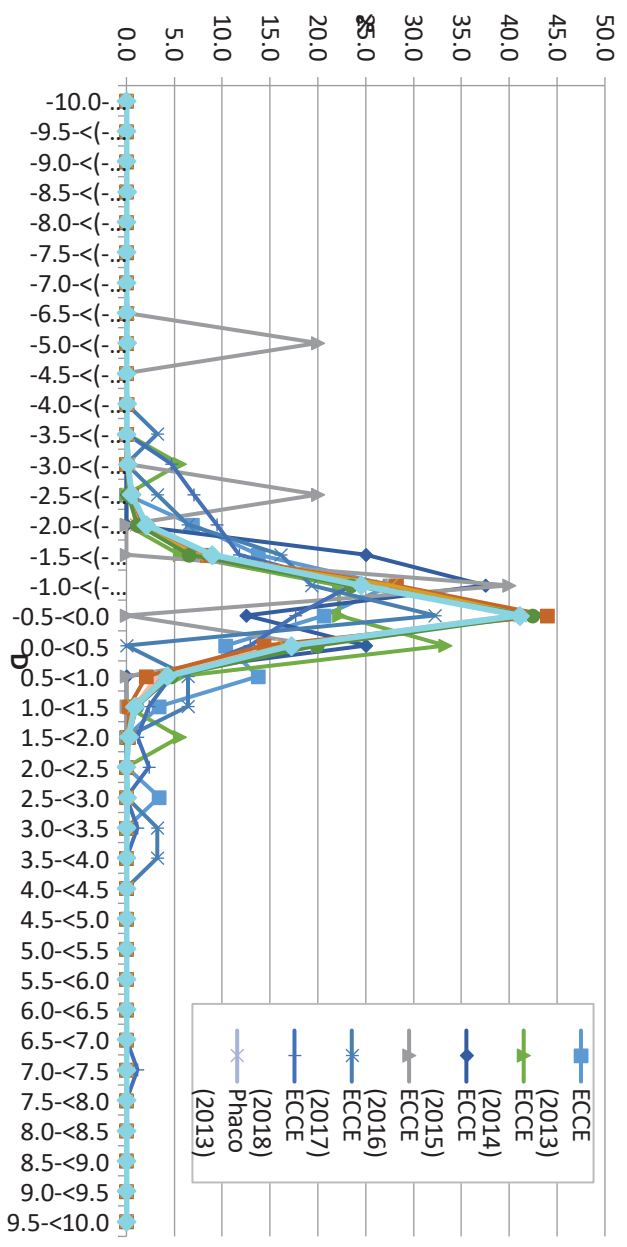


Figure 3.5.7-1: Distribution of Actual Refractive Power in ECCE and Phaco, CSR 2013-2018

Table 3.5.7-3: Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2018

Power (D)	Target Refraction											
	2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%
N	936	100	841	100	249	100	2023	100	3315	100	4090	100
-10.0-<(-9.5)	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	4	0.4	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.5-<(-4.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-4.0-<(-3.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3.5-<(-3.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-3.0-<(-2.5)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
-2.5-<(-2.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-2.0-<(-1.5)	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	0.0
-1.5-<(-1.0)	1	0.1	3	0.4	0	0.0	4	0.2	5	0.2	4	0.1
-1.0-<(-0.5)	39	4.2	50	5.9	57	22.9	85	4.2	81	2.4	127	3.1
-0.5-<0.0	885	94.6	784	93.2	187	75.1	1875	92.7	3153	95.1	3903	95.4
0.0-<0.5	6	0.6	4	0.5	2	0.8	53	2.6	65	2.0	54	1.3
0.5-<1.0	0	0.0	0	0.0	1	0.4	3	0.1	6	0.2	0	0.0
1.0-<1.5	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0
1.5-<2.0	0	0.0	0	0.0	1	0.4	0	0.0	2	0.1	0	0.0
2.0-<2.5	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0
2.5-<3.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.0-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.0-<8.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.0-<9.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Actual Refraction											

Power (D)	2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%
N	1270	100	1693	100	1284	100	1822	100	2455	100	2975	100
-10.0-<(-9.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
-8.0-<(-7.5)	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	2	0.2	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.0
-4.5-<(-4.0)	0	0.0	1	0.1	0	0.0	0	0.0	1	0.0	0	0.0
-4.0-<(-3.5)	1	0.1	0	0.0	1	0.1	1	0.1	1	0.0	1	0.0
-3.5-<(-3.0)	1	0.1	3	0.2	0	0.0	0	0.0	0	0.0	0	0.0
-3.0-<(-2.5)	4	0.3	3	0.2	0	0.0	2	0.1	5	0.2	4	0.1
-2.5-<(-2.0)	5	0.4	4	0.2	7	0.5	6	0.3	3	0.1	16	0.5
-2.0-<(-1.5)	19	1.5	29	1.7	22	1.7	18	1.0	28	1.1	62	2.1
-1.5-<(-1.0)	104	8.2	145	8.6	108	8.4	133	7.3	161	6.6	265	8.9
-1.0-<(-0.5)	339	26.7	474	28.0	362	28.2	503	27.6	577	23.5	729	24.5
-0.5-<0.0	522	41.1	683	40.3	565	44.0	763	41.9	1042	42.4	1222	41.1
0.0-<0.5	209	16.5	275	16.2	185	14.4	300	16.5	489	19.9	512	17.2
0.5-<1.0	46	3.6	55	3.2	27	2.1	76	4.2	115	4.7	127	4.3
1.0-<1.5	9	0.7	14	0.8	4	0.3	14	0.8	27	1.1	26	0.9
1.5-<2.0	4	0.3	4	0.2	3	0.2	1	0.1	5	0.2	7	0.2
2.0-<2.5	1	0.1	0	0.0	0	0.0	1	0.1	1	0.0	0	0.0
2.5-<3.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
3.0-<3.5	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.5-<4.0	1	0.1	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
4.0-<4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.0-<8.5	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
9.0-<9.5	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Power (D)	Difference between Target and Actual Refraction											
	2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%
N	829	100	642	100	184	100	1293	100	2376	100	2954	100
-10.0-<(-9.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.5-<(-9.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-9.0-<(-8.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.5-<(-8.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-8.0-<(-7.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
-7.5-<(-7.0)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-7.0-<(-6.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-6.5-<(-5.0)	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
-5.0-<(-4.5)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
-4.5-<(-4.0)	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0
-4.0-<(-3.5)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0
-3.5-<(-3.0)	0	0.0	1	0.2	1	0.5	1	0.1	1	0.0	0	0.0
-3.0-<(-2.5)	1	0.1	1	0.2	0	0.0	1	0.1	3	0.1	1	0.0
-2.5-<(-2.0)	6	0.7	1	0.2	0	0.0	3	0.2	2	0.1	14	0.5
-2.0-<(-1.5)	9	1.1	5	0.8	0	0.0	7	0.5	11	0.5	20	0.7
-1.5-<(-1.0)	25	3.0	14	2.2	7	3.8	36	2.8	73	3.1	133	4.5
-1.0-<(-0.5)	145	17.5	103	16.0	22	12.0	202	15.6	336	14.1	459	15.5
-0.5-<0.0	301	36.3	256	39.9	71	38.6	488	37.7	910	38.3	1126	38.1
0.0-<0.5	259	31.2	194	30.2	68	37.0	403	31.2	747	31.4	881	29.8
0.5-<1.0	56	6.8	50	7.8	12	6.5	118	9.1	229	9.6	240	8.1
1.0-<1.5	18	2.2	13	2.0	2	1.1	26	2.0	48	2.0	62	2.1
1.5-<2.0	4	0.5	0	0.0	0	0.0	5	0.4	13	0.5	10	0.3
2.0-<2.5	3	0.4	1	0.2	0	0.0	0	0.0	2	0.1	3	0.1
2.5-<3.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
3.0-<3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
3.5-<4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.0-<4.5	1	0.1	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
4.5-<5.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.0-<5.5	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5.5-<6.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.0-<6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6.5-<7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.0-<7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7.5-<8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.0-<8.5	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0
8.5-<9.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.0-<9.5	0	0.0	1	0.2	1	0.5	1	0.1	0	0.0	0	0.0
9.5-<10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

NOTE: Formula of $SE = Sp + (\frac{Sp}{2})$

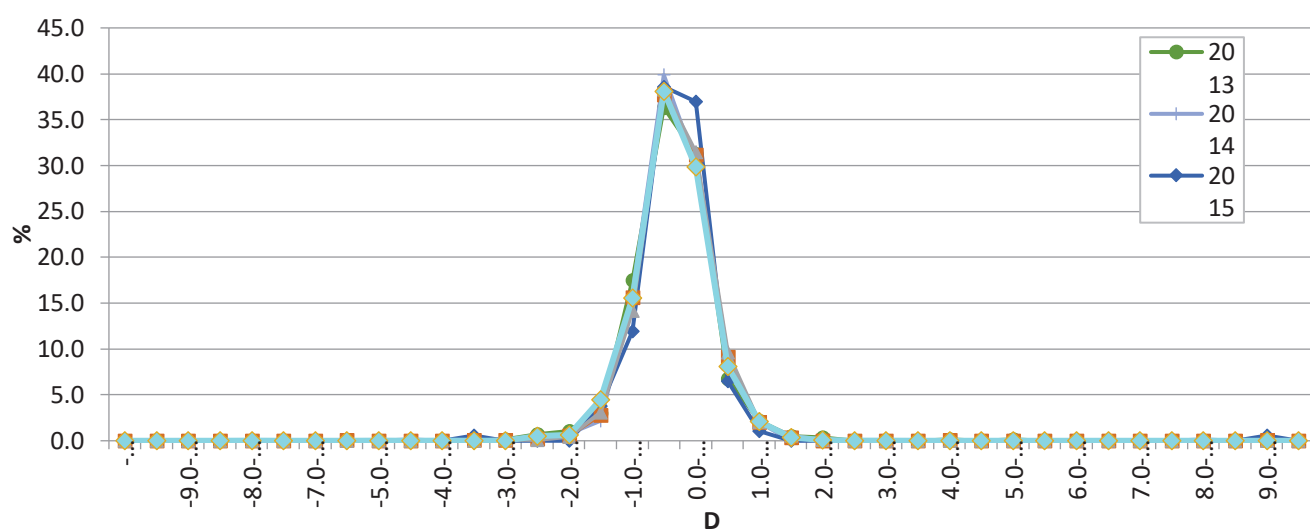


Figure 3.5.7-2: Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2018

Table 3.5.7-4: Difference in Target and Actual Refractive Power within $\pm 1.0D$, CSR 2013-2017

Year	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
2013	870	792	91.0	829	761	91.8	19	15	78.9
2014	658	615	93.5	642	603	93.9	6	4	66.7
2015	190	179	94.2	184	173	94.0	2	2	100.0
2016	1311	1224	93.4	1293	1211	93.7	3	2	66.7
2017	2425	2259	93.2	2376	2222	93.5	28	18	64.3

2018	All			By Phacoemulsification			By ECCE		
	No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$		No. of patient with refracted VA	Difference between Target and Actual Refraction within $\pm 1.0D$	
	N	n	%	N	n	%	N	n	%
All Centres	3055	2774	90.8	2954	2706	91.6	84	53	63.1
PPKM-HS	2055	1924	93.6	2009	1887	93.9	29	22	75.9
KK-KKM Jitra (Kedah)	1000	850	85.0	945	819	86.7	55	31	56.4

NOTE: Formula of Actual Refraction, $SE = Sp + (\frac{Cy}{2})$

Result is based on available info of target and actual refraction.

Target/Planned refractive power = Section pre-clerking

Actual refractive power, SE = Section post-op visual acuity measurement (SE=SP+(CY/2))

Denominator = patient with refraction = if info available in refracted vision Section post-op visual acuity measurement

CHAPTER 4: Retinoblastoma Registry

Retinoblastoma is the most common intraocular childhood malignancy in children, with a reported incidence ranging from 1 in 15,000 to 18,000 live births.

The retinoblastoma (RB) registry tracks all the patients diagnosed with retinoblastoma since 2004 that were seen in 4 major RB treatment centres in the country; namely Hospital Kuala Lumpur (covering Peninsular Malaysia), Hospital Queen Elizabeth (Sabah), Hospital Likas (Sabah) and Hospital Umum Kuching (Sarawak).

4.1 Stock and Flow

4.1.1 Stock and Flow

There were total of 254 patients registered, of which 23 new RB patients were diagnosed in 2017 and 2018 each.

Table 4.1.1-1: Stock and Flow

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Hospital Kuala Lumpur	8	10	12	19	11	13	10	5	9	25	13	16	12	20	21	204
Hospital Queen Elizabeth	0	0	0	0	1	0	7	2	4	3	3	0	0	0	0	20
Hospital Likas	0	0	0	0	1	0	0	0	0	0	0	10	1	3	2	17
Hospital Umum Sarawak	1	0	0	2	2	6	1	0	0	0	1	0	0	0	0	13
Total	9	10	12	21	15	19	18	7	13	28	17	26	13	23	23	254

4.2 Patient Demography

4.2.1 Age, Gender and Ethnicity

The median age at presentation was 1.99 years. The youngest age was 20 days and the oldest was 13 years. About half (50.7%) of these patients are below 24 months and 25% were less than 12 months at presentation.

There were slightly more males (55.9%) than females affected, and the majority were of Malay ethnicity (54.3%), followed by Chinese (16.9%) and Indians (7.1%).

Table 4.2.1-1: Distribution of Patients by Age

Age, years		n=254
Median (IQR)		1.99 (1.07–2.97)
Minimum, maximum		0.05 (20 days), 13.01
Age group	No.	%
<12 months	64	25.2
13–24 months	72	28.3
25–36 months	57	22.4
37–48 months	34	13.4

49–60 months	12	4.7
>60 months	15	5.9
Total	254	100.0

IQR = Interquartile range reported as 25th percentile–75th percentile.

Table 4.2.1-2: Distribution of Patients by Gender

Gender	No.	%
Male	142	55.9
Female	112	44.1

Table 4.2.1-3: Distribution of Patients by Ethnicity

Ethnicity	No.	%
Malay	138	54.3
Chinese	43	16.9
Indian	18	7.1
Orang Asli	1	0.4
Melanau	2	0.8
Kadazan/Murut/Bajau	16	6.3
Iban	5	2.0
Others	27	10.6
Missing	4	1.6

4.3 Ocular History and Presentation

4.3.1 Ocular History and Presentation

The most common presentation was leukocoria (79.5%) followed by strabismus.

Table 4.3.1-1: Clinical Presentation

Presentation	No.	%
Leukocoria	202	79.5
Strabismus	43	16.9
Proptosis	18	7.1
Others	35	13.8

(Number or percentage may be more than total or 100% as patients might have more than one clinical presentation)

The median duration of disease from onset of symptoms to presentation was 2 months with the majority (64.6%) within 1 to 6 months.

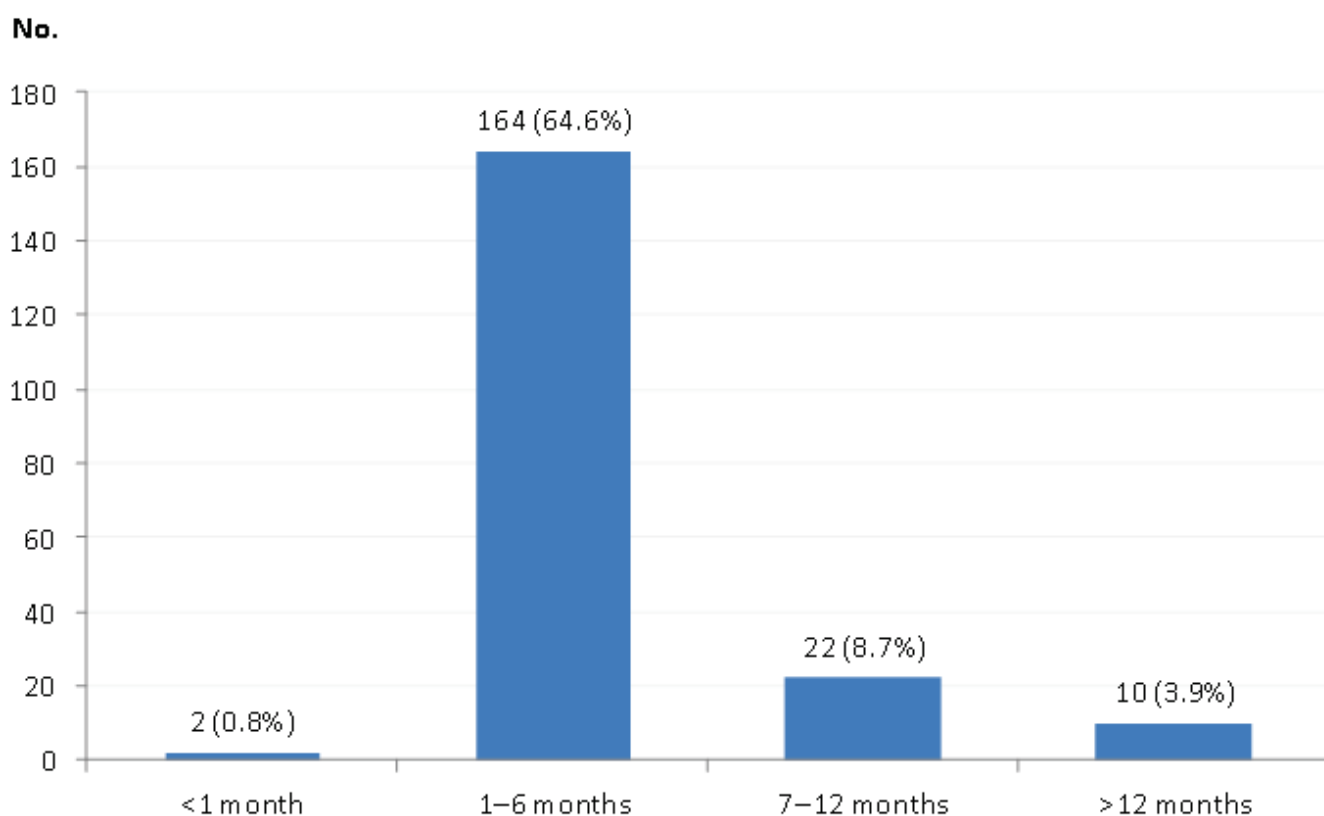


Figure 4.3.1-1: Onset of Disease

Of the 254 patients, 165 (48.1%) had unilateral disease whereas 89 patients (51.9%) had both eyes affected. A total of 343 eyes were affected. Only 6 patients had positive family history of retinoblastoma.

Table 4.3.1-2: Eyes Affected

	No. of patients	% by no. of eyes
Right eye only	76	22.2
Left eye only	89	25.9
Both eyes	89	51.9
Total by no. of eyes	343	100.0

Family history	No.	%
Yes	6	2.4
No	216	85.0
Missing	32	12.6

4.4 Investigation and Classification

4.4.1 Investigation and Classification

The presence of mass was detected in 65.6% however only 64.4% reported as calcification of CT scan imaging. In patients who had MRI done, 14.3% showed presence of mass but only 8.5% had calcification. There was extraocular extension detected through imaging in 36 eyes, 10.5% and 9 eyes, 2.6% through CT scan and MRI respectively. Majority of them were extension into the optic pathway

Table 4.4.1-1: Type of imaging done at diagnosis, by no. of eyes (n=343)

No. of eyes		MRI scan	
		Yes	No/NA/Missing
		No. (%)	No. (%)
CT scan	Yes	32 (9.3)	229 (66.8)
	No/NA/Missing	30 (8.7)	52 (15.2)

Table 4.4.1-2: Type of imaging done at diagnosis by patient (n=254)

No. of eyes		MRI scan	
		Yes	No/NA/Missing
		No. (%)	No. (%)
CT scan	Yes	22 (8.7)	174 (68.5)
	No/NA/Missing	20 (7.9)	38 (15.0)

NA=Not available

Table 4.4.1-3: Presence of mass, by CT scan

	No.	%
Yes	225	65.6
No	36	10.5
No CT scan/ NA/ missing	82	23.9

Table 4.4.1-4: Presence of mass, by MRI scan

	No.	%
Yes	49	14.3
No	13	3.8
No MRI scan/ NA/ missing	281	81.9

Table 4.4.1-5: Presence of calcification, by CT scan

	No.	%
Yes	221	64.4
No	40	11.7

Table 4.4.1-6: Presence of calcification, by MRI scan

	No.	%
Yes	29	8.5
No	33	9.6

Table 4.4.1-7: Presence of extraocular extension, by CT scan

	No.	%
Yes	36	10.5
No	225	65.6
No CT scan/ NA/ missing	82	23.9

Table 4.4.1-8: Presence of extraocular extension, by MRI scan

	No.	%
Yes	9	2.6
No	53	15.5
No MRI scan/ NA/ missing	281	81.9

Table 4.4.1-9: Type of extraocular extension, by CT scan

	No.	% (n=36)
Optic pathway	32	88.9
Orbit and adnexa	11	30.6
Intracranial	9	25.0

Table 4.4.1-10: Type of extraocular extension, by MRI scan

	No.	% (n=9)
Optic pathway	6	66.7
Orbit and adnexa	2	22.2
Intracranial	0	0.0

Number or percentage may be more than total or 100% as patients might have more than one type of extraocular extension.

More than half (52.5%) of the patients presented with Group E Retinoblastoma (based on International Intraocular Retinoblastoma Classification- IIRC).

Table 4.4.1-11: Classification of Retinoblastoma

	Right eye		Left eye		Total	
	No.	%	No.	%	No.	%
Group A	10	6.1	8	4.5	18	5.2
Group B	11	6.7	15	8.4	26	7.6
Group C	11	6.7	11	6.2	22	6.4
Group D	35	21.2	28	15.7	63	18.4
Group E	79	47.9	101	56.7	180	52.5
Not available/Missing	19	11.5	15	8.4	34	9.9
Total eyes	165	100.0	178	100.0	343	100.0

4.5 Management and Outcome

4.5.1 Management and Outcome

59.4% of patients had systemic chemotherapy with a mean of 6.5 cycles (maximum 15 chemotherapy cycles). Of those with bilateral disease, 13 patients had ocular (7 subtenon and 6 intravitreal injection) chemotherapy together with the systemic chemotherapy.

121 out of 165 eyes (73.3%) with unilateral RB were enucleated with 36.4% of them showed histopathological extension outside the eyeball. Of the bilateral RB, 37.1% were enucleated. 8 patients had external beam radiotherapy.

Table 4.5.1-1: Chemotherapy by patient

	Unilateral (N=165)		Bilateral (N=89)		All (N=254)	
	No.	%	No.	%	No.	%
Had chemotherapy	77	46.7	74	83.1	151	59.4
Did not have chemotherapy	53	32.1	7	7.9	60	23.6
	No.	% (n=77)	No.	% (n=74)	No.	% (n=151)
Systemic chemotherapy	72	93.5	72	97.3	144	95.4
Subtenon injection	0	0.0	7	9.5	7	4.6
Intravitreal injection*	0	0.0	6	8.1	6	4.0
• Mean cycles given	6.2		6.8		6.5	
• Median cycles given	6		6		6	
• 25 th percentile–75 th percentile	6–9		6–9		6–9	
• Minimum cycle	2		2		2	
• Maximum cycle	13		15		15	

*All patients in the subgroup had systemic chemotherapy as well.

Table 4.5.1-2: Treatment method by no. of eyes

	Right (n=76)		Unilateral Left (n=89)		All (n=165)		Bilateral Right (n=89)		Bilateral Left (n=89)		All (n=178)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Enucleation	57	75.0	64	71.9	121	73.3	32	36.0	34	38.2	66	37.1
HPE result:												
Intraocular (no extraocular extension)	24	31.6	21	23.6	45	27.3	7	7.9	1	1.1	8	4.5
With extraocular extension	24	31.6	36	40.4	60	36.4	18	20.2	2	2.2	20	11.2
Not available/Missing	9	11.8	7	7.9	16	9.7	7	7.9	31	34.8	38	21.3
Focal therapy	2	2.6	9	10.1	11	6.7	38	42.7	35	39.3	73	41.0
Laser only	1	1.3	5	5.6	6	3.6	18	20.2	22	24.7	40	22.5
Cryotherapy only	0	0.0	0	0.0	0	0.0	2	2.2	3	3.4	5	2.8

Laser & cryotherapy	1	1.3	4	4.5	5	3.0	18	20.2	10	11.2	28	15.7
Radiotherapy	5*	6.6	3*	3.4	8	4.8	6	6.7	0	0.0	6	3.4
External beam radiation (EBRT)	0	0.0	2	2.2	2	1.2	6	6.7	0	0.0	6	3.4
Plaque radiotherapy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Intensity modulated radiotherapy (IMRT)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

*Missing 5 and 1 case, respectively on subgroup of radiotherapy.

Table 4.5.1-3: Treatment method for all patients with chemotherapy

	Unilateral				Bilateral			
	Right eye	Left eye	All (n=77)		Both eyes	Either one eye	All (n=74)	
	n	n	No.	%	n	n	No.	%
Enucleation	30	34	64	83.1	7	47	54	73.0
Laser therapy	2	8	10	13.0	10	44	54	73.0

Table 4.5.1-4: Outcome and complications, by no. of eyes

	Unilateral						Bilateral					
	Right (n=76)		Left (n=89)		All (n=165)		Right (n=89)		Left (n=89)		All (n=178)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Remission												
Complete	19	25.0	25	28.1	44	26.7	10	11.2	11	12.4	21	11.8
Partial regression	0	0.0	3	3.4	3	1.8	17	19.1	13	14.6	30	16.9
No regression	0	0.0	3	3.4	3	1.8	0	0.0	1	1.1	1	0.6
NA/Missing	57	75.0	58	65.2	115	69.7	62	69.7	64	71.9	126	70.8
Recurrence	0	0.0	4	4.5	4	2.4	10	11.2	7	7.9	17	9.6
Duration from first time treatment (in months)												
• n	0		4		4		9		7		15	
• Mean (SD)	-		12.0 (7.4)		12.0 (7.4)		18.8 (7.5)		12.7 (12.4)		15.6 (10.2)	
• Median (IQR)	-		11 (6–18)		11 (6–18)		22 (12–74)		7 (5–24)		17 (5–24)	
• Min, max	-		5, 21		5, 21		5, 28		4, 36		4, 36	
Complication	4	5.3	6*	6.7	10*	6.1	10	11.2	3	3.4	13	7.3
Socket /prosthesis related	3	3.9	3	3.4	6	3.6	4	4.5	1	1.1	5	2.8
Disease related	1	1.3	2	2.2	3	1.8	6	6.7	2	2.2	8	4.5

*Missing 1 case on subgroup of complication.

IQR = Interquartile range, is reported as 25th percentile–75th percentile.

Table 4.5.1-5: Outcome by patient

	Unilateral (n=165)		Bilateral (n=89)		All (n=254)	
	No.	%	No.	%	No.	%
Lost to follow-up	15	9.1	8	9.0	23	9.1
Status by 1 year:						
Alive	68	41.2	40	44.9	108	42.5
Death	8	4.8	4	4.5	12	4.7
Unknown/Missing	89	53.9	45	50.6	134	52.8

4 eyes of the unilateral RB and 17 eyes in bilateral RB had recurrences. The earliest recurrence was noted at 5 months from diagnosis and the latest was at 21 months.

23 patients defaulted treatment and were lost to follow-up. Death was reported in 12 patients.

4.6 Comment

Since 2004, there were 254 patients registered in the RB registry with 343 affected eyes. In 2018, 23 new patients were registered. Data from the RB registry showed that there is no change in the spectrum of presenting symptoms which were similar to those reported elsewhere. Leukocoria was the most common presentation followed by strabismus.

Late presentation was still a problem. Majority of patients presented with advanced stage Group E which necessitate enucleation. 83.1 % of unilateral RB were enucleated. In bilateral RB, 37.1% of the patients had at least 1 eye enucleated. About 10.5% of eyes showed extraocular extension on CT scan imaging, involving mainly the optic pathway. HPE of the enucleated eyes showed 36.4% of unilaterally affected eye, and 11.2% of the bilaterally affected, had histopathological evidence of extraocular extension.

Chemoreduction is the mainstay of treatment especially in bilateral RB. Apart from systemic chemotherapy, periocular and intraocular chemotherapy are also used as treatment especially in bilateral RB. We have initiated intra-arterial chemotherapy (IAC) for recalcitrant retinoblastoma and the service was provided by interventional radiologist since July 2015. Until end of 2018, there were 16 patients received the IAC. 8 patients needed external beam radiation due to the advanced stage of the disease.

9.6% of bilateral RB and 2.4% of unilateral RB reported recurrence of the disease with the mean duration of 12 months in unilateral cases and 15.6 months in bilateral cases after the initial treatment. About 9.1% of patients were lost to follow up, whereas death was reported in 12 patients.

As with other cancers, early detection of retinoblastoma for instance during postnatal screening and routine examination would facilitate early diagnosis and appropriate treatment can improve outcome.