
# The 8th Report of the National Eye Database 2014

**Included reports on**

**Cataract Surgery Registry 2002, 2003, 2004, 2007, 2008, 2009, 2010, 2011, 2012, 2013 and 2014**

**Klinik Katarak 1Malaysia, MAIWP-Hospital Selayang, Retinoblastoma Registry and Ophthalmology Service Census 2015**

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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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NED Steering Committee Members

May 2016

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# 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 six patient registries and a monthly ophthalmology service census. The patient registries are Cataract Surgery Registry, Diabetic Eye Registry, Contact Lens-Related Corneal Ulcer Surveillance, Glaucoma Registry, Retinoblastoma Registry, and Age Related Macular Degeneration Registry. The source data producers are eye care providers, currently from the public. 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 Databases**

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 for the year 2002, 2003, 2004 and 2007 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.

**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 study trends in service output and service patterns.
3. To get baseline and norm from services provided by MOH ophthalmology departments.
4. 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 possibly 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 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 | ≥ 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 | ≥ 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 | ≥ 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 (850 cases 1000 operations) | > 85% (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 lens may have defect during the manufacturing process and implantation into the patients' eyes. This ranges 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 results 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 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 for 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 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 quite consistent and outcome is measured by visual acuity. Cataract surgery outcome depends greatly 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-mine data on occurrence of posterior capsular rupture and patients with post-operative vision worse then 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 most 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.

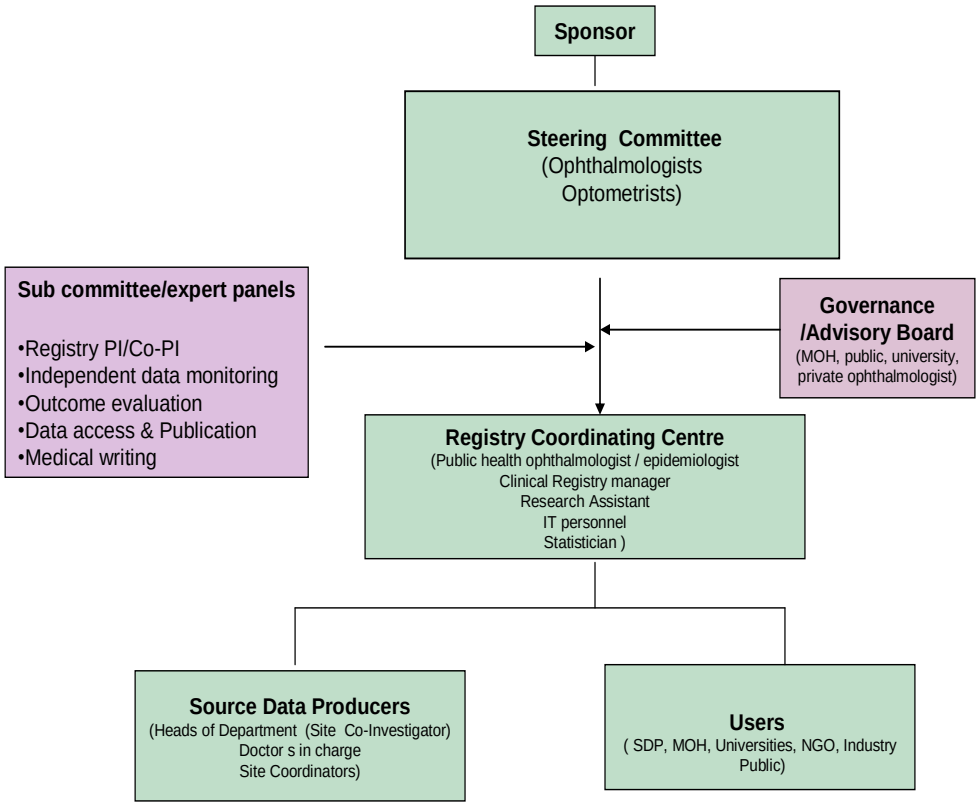
Data collection and data entry are done at SDP sites. Data are collected either using case report forms (CRF) which are later entered into the web application, or are directly entered into the web application during the course of clinical work.

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-in-charge and site coordinators 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.

# NED ORGANIZATION

## Organisation Chart



# NED SOURCE DATA PROVIDERS

**LIST OF SITE COORDINATOR FOR 2015**

| **NORTHERN ZONE** | | |
|---|---|---|
| **No.** | **SDP** | **Site Coordinator** |
| 1. | Hospital Kangar | Roslinda bt Rahman |
| 2. | Hospital Sultanah Bahiyah | Nur Diana Mohd Zani |
| 3. | Hospital Sungai Petani | Juliana Md Desa |
| 4. | Hospital Pulau Pinang | Noor Asmah Md Azmi |
| 5. | Hospital Bukit Mertajam | Marhaini Othman |
| 6. | Hospital Ipoh | Noraini Harith |
| 7. | Hospital Taiping | Rohaiza bt Abdul Hamid |
| 8. | Hospital Teluk Intan | Adawiyah Ismail |
| 9. | Hospital Sri Manjung | Juhaida bt Zahri |
| **EASTERN ZONE** | | |
| **No.** | **SDP** | **Site Coordinator** |
| 1. | Hospital Kuantan | Noor Azhari bin Ahmad |
| 2. | Hospital Temerloh | Nor Hanim Ahmad Adnan |
| 3. | Hospital Kuala Terengganu | Noor Hayati Mohammad |
| 4. | Hospital Kota Bharu | Rossaidah bt Mustapa |
| 5. | Hospital Kuala Krai | Farawahida Fakaruddin |
| **CENTRAL ZONE** | | |
| **No.** | **SDP** | **Site Coordinator** |
| 1. | Hospital Kuala Lumpur | Intan Khusiah Abd Rahman |
| 2. | Hospital Putrajaya | Lily Muhanifa Mustafa |
| 3. | Hospital Selayang | Nurul Aini Yusoff |
| 4. | Hospital Klang | Najihah Muhammad Sharif |
| 5. | Hospital Serdang | Yusrina Mohamat Hata |

| CENTRAL ZONE | | |
|---|---|---|
| **No.** | **SDP** | **Site Coordinator** |
| 6. | Hospital Sungai Buloh | Majidah Zainal Abidin |
| 7. | Hospital Ampang | Noriah binti Abdullah |
| 8. | Hospital Seremban | Normalisa Muhammad Som |
| 9. | Hospital Kuala Pilah | Nazura Selamat |
| **SOUTHERN ZONE** | | |
| **No.** | **SDP** | **Site Coordinator** |
| 1. | Hospital Melaka | Eryanti Md Omar |
| 2. | Hospital Johor Baru | Nurazilah Ismail |
| 3. | Hospital Muar | Roziana Sumardi |
| 4. | Hospital Batu Pahat | Nur Adilah Abdullah |
| 5. | Hospital Sultan Ismail | Nursalinah bt Adam |
| **SARAWAK** | | |
| **No** | **SDP** | **Site Coordinator** |
| 1. | Hospital Umum Sarawak | Nazirin bin Arshad |
| 2. | Hospital Sibu | Mohammad Ridzwan Bihem |
| 3. | Hospital Bintulu | Mohd Zharif Mohd Nor |
| 4. | Hospital Miri | Nur Hafizah Mat Jalil |
| 5 | Hospital Sarikei | |
| **SABAH** | | |
| **No** | **SDP** | **Site Coordinator** |
| 1. | Hospital Queen Elizabeth | Iramayanah Ambo Mase |
| 2. | Hospital Duchess Of Kent | Norhafizah Abd Razik |
| 3. | Hospital Tawau | Arni Rehny Ahmad Rakhli |
| 4. | Hospital Keningau | Hr Shredznear |

# FOREWORD

The overall data submission for Cataract Surgery Registry (CSR) has increased over the years. This indicates an increasing awareness regarding the importance of CSR data and readiness among SDPs to submit data for service improvement and publication. However, this trend has to be sustained to ensure representativeness of data in the National Eye Database (NED). The effort to sustain this will require colossal contribution and commitment from each individual at all level of eye care providers. Let us also hope that the ascertainment will further increase following the implementation of NED medical officership in most SDPs beginning January 2015. These Medical Officers (MOs) are given tasks within dedicated working hours in a week by 1-2 monthly rotation to monitor data entry for CSR and completeness of all data fields in various registries and department service/census in the NED.

Results from the National Eye Survey (NES) II in 2014 has produced an estimate on the number of people with cataract blindness in the country by WHO definition (corrected vision <3/60 in the better eye). In order to effectively address this issue over time, we have set a target to increase the country's Cataract Surgical Rate to up to 20% from the current rate each year. This target projects a 10 000 cataract surgeries increase per year by the Ministry of Health (MOH) alone. Data in CSR have been showing an increasing total yearly output by MOH although it has not reached the target yet. It is indeed an uphill battle for us to achieve this desired target in the years to come especially during the time when we are facing health care budget cut. However, this is not the main national concern. As we progress over the years putting a concerted effort to improve cataract surgical services in the country, some of us are still unaware about the alarming issue of cataract tsunami therefore comfortable operating below their individual capacities. Some hospitals are complacent by the label of "high output" hospital based on yearly cataract surgery number by ignoring the cost-efficiency aspect of the cataract surgery. If we take into account capacity and cost-efficiency, these hospitals could actually be under-performing because they had more manpower and resources as compared to other "high output" hospitals which probably had only one operating table with limited manpower and resources. In future, we will hopefully be able to overcome this by projecting the number of cataract surgery per cataract hour per year rather than number of cataract surgery per year alone.

As part of an eye care planning cycle, NED will continue its role in monitoring and evaluating our performance in our mission to improve the country's eye health. This can potentially be achieved by sharing and disseminating results in NED to all individuals at all levels of eye care to encourage data cleaning and utility. NED Newsletters publishing NED results in segments have come to its fourth year of publication. NED MO regular presentation within individual department and roadshows are the novel process of reaching the users. Let us complement and enhance these roles by giving our full commitment and ideas in making NED central in the national eye health agenda.

Steering Committee Members

National Eye Database 2014/2015

## ABBREVIATION

| | | | |
|---|---|---|---|
| ADED | Advanced Diabetic Eye Disease | NED | National Eye Database |
| AMD | Age related Macular Degeneration | NPDR | Non Proliferative Diabetic Retinopathy |
| CAI | Carbonic Anhydrase Inhibitor | NPL | No Perception Of Light |
| CF | Counting Finger | OT | Operating Theatre |
| CLRCU | Contact Lens-Related Corneal Ulcer | PCO | Posterior Capsule Opacification |
| CSMO | Clinically Significant Macular Odema | PCR | Posterior Capsule Rapture |
| CMO | Cystoid Macular Oedema | PDR | Proliferative Diabetic Retinopathy |
| CSR | Cataract Surgery Registry | Phaco | Phacoemulsification |
| DER | Diabetic Eye Registry | PL | Perception Of Light |
| DM | Diabetes Mellitus | PI | Principal Investigator |
| DR | Diabetic Retinopathy | RB | Retinoblastoma |
| ECCE | Extracapsular Cataract Extraction | RCC | Registry Coordinating Centre |
| FU | Follow Up | SD | Standard Division |
| HM | Hand Movement | SDP | Source Data Producers |
| HPT | Hypertension | VA | Visual Acuity |
| ICCE | Intracapsular Cataract Extraction | VR | Vitreoretinal Surgery |
| IOL | Intraocular Lens | ZD | Zonular Dialysis |
| MOH | Ministry Of Health | | |

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# EXECUTIVE SUMMARY

The ascertainment for the submission of both operative and outcome data increased over the years denoting an increasing representativeness of data in NED. In general, the cataract surgical output per SDP increased throughout the years with Hospital Alor Setar, Hospital Ipoh, Hospital Pulau Pinang, Hospital Melaka and Hospital Umum Sarawak leading the way by producing more than 2000 surgeries per year. Similar to past years, the issue of increasing percentages of patients with Hypertension and Diabetes Mellitus and the low percentage of patients who had second eye cataract surgery need to be acknowledged and addressed by optimising pre-operative care and increasing population awareness. The implementation of day care surgery concept also has to be strengthened as only 66.7% of surgery was done as Day Care in 2014. The percentage of surgery using Phaco technique however, was increasing (39.7% in 2002 to 87.4% in 2014) with a parallel increase in the use of topical anaesthesia and foldable acrylic Intraocular Lens. There was also an increasing trend in the combined usage of intracameral anaesthesia for cataract surgery. Although the percentage of Posterior Capsular Rupture remained at 2.7%, the percentage of intra-operative complications in general was in a decreasing trend. The percentage of eye with post-operative infectious endophthalmitis also decreased from 0.08% in 2013 to 0.05% in 2014.

# REPORT SUMMARY

## CATARACT SURGERY REGISTRY

### 1. Stock and Flow

- The number of SDP increased from 25 SDPs in 2002 to 43 SDPs in 2014 onwards.
- The total number of cataract surgery registered to CSR increased from 12798 in 2002 to 40532 in 2014.
- The CSR ascertainment slightly increased from 94.3% in 2013 to 96.7% in 2014.

### 2. Characteristics of Patients

- The mean age of patients at the time of cataract surgery was 65.9 in 2014. This age was younger than data published by the Swedish cataract surgery register (74 years old).
- Up to 1/5 of patients presented within the age group of 65-69 years old (21.1% in 2014).
- The proportion of patients with systemic co-morbidity increased from 56.8% in 2002 to 75.6% in 2014.
- There was an increase in the proportion of patients presented for cataract surgery who had hypertension (from 35.4% in 2002 to 60.3% in 2014) and diabetes mellitus (from 28.9% in 2002 to 44.4% in 2014).
- Senile cataract was the commonest cause of primary cataract (99.3 % in 2014).
- Trauma was the commonest cause for secondary cataract (63.4% in 2014).
- The proportion of patients who returned for cataract surgery in the fellow eye remained the same from 2002 to 2014, i.e. only one third (35.2% in 2014).
- Majority of the eyes had no prior ocular surgery (97.4% in 2014).The commonest prior ocular surgery was pterygium excision (1.0% in 2014).
- One third of the eyes had ocular co-morbidity (39.8% in 2014). The commonest ocular co-morbidity was diabetic retinopathy in any forms (10.9% in 2014).
- About half of the eyes had unaided vision <3/60 (43.2% in 2014).
- Refraction was not done in more than 2/3 of the eyes (76.5% in 2014). Most of them had VA<3/60 (46.8% in 2014).
- 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.
- 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 2014 was -0.4D (SD 0.3)

**3. Cataract Surgery Practice Patterns**

- The number of cataract surgery performed by SDPs varied. In 2014, out of the 43 SDPs, 13 SDPs performed 500 surgeries or less, 14 performed between 501 to 1000 and 16 performed more than 1000 cataract surgeries a year.
- Selangor (5 main SDPs), Perak (4 main SDPS) and Sarawak (5 main SDPS), performed higher number of cataract surgeries compared to other state.
- More than 2/3 of the cataract surgery was performed by specialists (89.3% in 2014).
- The percentage of Phaco surgery done by medical officers was decreasing (3.6% in 2013 to 3.4% in 2014)
- The median duration taken to do a cataract surgery was 25 min for phaco and 45 min for ECCE in 2014.
- Though there is an increasing trend for day care surgery, from 39.3% in 2002 to 66.7% in 2014, the percentage varied among SDPs.
- Phaco was the preferred method of cataract surgery and the proportion increased from 39.7% in 2002 to 87.4% in 2014. Percentage of ECCE decreased from 54.0% in 2002 to 8.9% in 2014.
- The preferred IOL material was acrylic and foldable type.
- The percentage of phaco converted to ECCE was 2.0% in 2014. It remained the same over the years.
- Among combined surgery, VR surgery was the highest. It showed a decreasing trend.
- Majority of cases were done under local anaesthesia (92.9% in 2014). The preferred type of local anesthesia was topical (66.6% in 2014).
- The use of topical anesthesia increased from 11.7% in 2002 to 66.6% in 2014.
- The use of intracameral anesthesia increased from 1.5% in 2007 to 16.8% in 2014.
- The use of retrobulbar anesthesia decreased from 25.9% in 2002 to 1.2% in 2014.
- Majority of the patient operated had IOL implantation (98.7% in 2014). Among these patients who had IOL, 96.1% had posterior chamber IOL.

**4. Intra-operative Complications**

- The percentage of intra-operative complication decreased from 5.2% in 2012 to 5.3% in 2014
- PCR was maintained at 2.7% in 2014.
- Intra-op complication was seen among 49.9% of patients who had phaco converted to ECCE and 39.8% who had ICCE in 2014.
- In 2014, the percentage of intra-operative complication was higher in cataract surgeries performed by gazetting specialists (10.2%), followed by MO (8.4%) as compared to specialist (4.9%). For phaco surgeries, gazetting specialists (7.4%, MO (7.0%),) and specialist (3.3%)

**5. Cataract Surgery Outcome**

- In average, more than 85.0% of patient registered to CSR had cataract surgery outcome data.
- The percentage of patients with post-operative endophthalmitis reduced from 0.08% in 2013 (27 patients) to 0.05% in 2014 (19 patients).
- The percentage of patients with unplanned return to OT showed a decreasing trend, 0.26% in 2014.
- Iris prolapse showed a decreasing trend but wound dehiscence, high post- operative IOP and IOL related problem showed no specific trend.
- In eyes without ocular co-morbidity, only ½ of eyes had post-op unaided visual acuity 6/12 or better (58.5% in 2014) and the patterns were consistent over the years. With refraction, more than 80.0% achieved post-op vision

6/12 or better (81.0% in 2002, 89.0% in 2003, 90.0% in 2004, 84.0% in 2007, 88.0% in 2008, 90.9% in 2009, 92.0% in 2010, 92.4% in 2011, 92.6% in 2012, 93.3% in 2013 and 93.8% in 2014). This observation suggested that poor post- op unaided vision was due to refractive error and patients' vision could be improved with glasses.

- Patients who had phaco had better post-op visual outcome when compared to other type of surgeries. 94.8% of phaco patients had refracted vision of 6/12 or better in 2014 as compared to ECCE (84.3.0%), phaco convert to ECCE (74.6%), lens aspiration (85.6%) and ICCE (57.1%).
- 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 94.8% in 2014 and among ECCE patients from 78.0% in 2002 to 84.3% in 2014.
- In all type of surgeries, visual outcome became less favourable when there were intra-operative complications.
- 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 and Cystoid Macula Edema.
- When patients with preexisting ocular co-morbidity were excluded from analysis, high astigmatism followed by preexisting ocular co-morbidity (not detected preoperatively) were the major causes of poor visual outcome.
- In 2014, with the mean target refraction (all eyes) of -0.4D, the mean actual refraction was -0.6D for phaco eyes, and -0.9D for ECCE eyes. Thus, eyes which had undergone ECCE had more myopic shift than eyes which had phaco.
- In 2014, there was disparity between the targeted and the actual refraction. 81.7% of eyes had a different in target and actual refraction of between ±1.0D.

## KLINIK KATARAK 1MALAYSIA

### 1. Stock and Flow

- The number of SDP increased from 2 SDPs in 2013 to 4 SDPs in 2014.
- The total number of cataract surgery registered to CSR increased from 140 in 2013 to 1055 in 2014.

### 2. Characteristics of Patients

- The mean age of patients at the time of cataract surgery was 68.6 in 2014. This age was older than total MOH (65.9 years old).
- Up to 1/5 of patients presented within the age group of 65-69 years old (22.8% in 2014).
- In 2014, there proportion of patients presented for cataract surgery who had hypertension was 47.4% and diabetes mellitus was 24.5%.
- Senile cataract was the commonest cause of primary cataract (99.6 % in 2014).
- Trauma was the cause for secondary cataract (100% in 2014).
- The proportion of patients who returned for cataract surgery in the fellow eye was only 1/5 (19.4% in 2014).
- Majority of the eyes had no prior ocular surgery (99.5% in 2014).
- Less than one third of the eyes had ocular co-morbidity (24.3% in 2014). The commonest ocular co-morbidity was diabetic retinopathy in any forms (1.6% in 2014) and pterygium significantly involving the cornea (1.6% in 2014)
- More than half of the eyes had unaided vision <3/60 (59.2% in 2014).
- Refraction was not done in most of the eyes (94.0% in 2014). Most of them had VA<3/60 (60.1% in 2014).

- 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.
- 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 2014 was -0.3D (SD 0.2)

**3. Cataract Surgery Practice Patterns**

- The number of cataract surgery performed by SDPs varied depending on location, period of service and availability of the bus (for KK1M mobile)
- The median duration taken to do a cataract surgery was 20 min for phaco and 35 min for ECCE in 2014.
- The percentage of surgeries performed under daycare setting increased from 55.5% in 2013 to 97.3% in 2014.
- Phaco was the preferred method of cataract surgery and the proportion increased from 88.5% in 2013 to 88.5% in 2014. Percentage of ECCE slightly increased from 8.6% in 2013 to 9.5% in 2014.
- The preferred IOL material was acrylic and non-foldable type.
- Majority of cases were done under local anaesthesia (98.8% in 2014). The preferred type of local anesthesia was topical (84.4% in 2014).
- The use of topical anesthesia increased from 64.7% in 2013 to 84.4% in 2014.
- Majority of the patient operated had IOL implantation (97.3% in 2014). Among these patients who had IOL, 94.9% had posterior chamber IOL.

**4. Intra-operative Complications**

- The percentage of intra-operative complication decreased from 7.1% in 2013 to 4.93% in 2014
- PCR increased from 1.4% in 2014 to 2.7% in 2014.

**5. Cataract Surgery Outcome**

- In average, more than 80.0% of patient registered to CSR had cataract surgery outcome data.
- The percentage of patients with post-operative endophthalmitis was 0%.
- In eyes without ocular co-morbidity, only ½ of eyes had post-op unaided visual acuity 6/12 or better (46.1% in 2014). With refraction, more than 90.0% achieved post-op vision 6/12 or better (90.5% in 2014). This observation suggested that poor post- op unaided vision was due to refractive error and patients' vision could be improved with glasses.
- Patients who had phaco had better post-op visual outcome when compared to other type of surgeries. 90.7% of phaco patients had refracted vision of 6/12 or better in 2014 as compared to ECCE (88.6%).
- The main contributing factor for eyes with post-operative refracted VA worse than 6/12 was high astigmatism followed by pre-existing ocular co-morbidity.
- When patients with preexisting ocular co-morbidity were excluded from analysis, preexisting ocular co-morbidity (not detected preoperatively) followed by high astigmatism were the major causes of poor visual outcome.
- In 2014, with the mean target refraction (all eyes) of -0.3D, the mean actual refraction was -1.0D for phaco eyes, and -1.2D for ECCE eyes. Thus, eyes which had undergone ECCE had more myopic shift than eyes which had phaco.

- In 2014, there was disparity between the targeted and the actual refraction. 62.2%of eyes had a different in target and actual refraction of between ±1.0D.

## MAIWP-HOSPITAL SELAYANG

### 1. Stock and Flow

- The total number of cataract surgery registered to CSR increased from 1506 in 2013 to 2266 in 2014.

### 2. Characteristics of Patients

- The mean age of patients at the time of cataract surgery was 65.2 in 2014. This age was younger than total MOH (65.9 years old).
- Up to 1/5 of patients presented within the age group of 65-69 years old (23.6% in 2014).
- In 2014, there proportion of patients presented for cataract surgery who had hypertension was 62.0% and diabetes mellitus was 46.0%.
- Senile cataract was the commonest cause of primary cataract (99.7 % in 2014).
- The proportion of patients who returned for cataract surgery in the fellow eye was almost half (40.3% in 2014).
- Majority of the eyes had no prior ocular surgery (97.8% in 2014).
- Less than one third of the eyes had ocular co-morbidity (16.9% in 2014). The commonest ocular co-morbidity was diabetic retinopathy in any forms (7.3% in 2014) and glaucoma (2.0% in 2014)
- One third of the eyes had unaided vision <3/60 (33.3% in 2014).
- Refraction was not done in most of the eyes (94.0% in 2014). Most of them had VA<3/60 (60.1% in 2014).
- 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.
- 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 2014 was -0.4D (SD 0.3)

### 3. Cataract Surgery Practice Patterns

- The median duration taken to do a cataract surgery was 20 min for phaco and 38 min for ECCE in 2014.
- Phaco was the preferred method of cataract surgery and the proportion increased from 95.1% in 2013 to 96.9% in 2014. Percentage of ECCE decreased from 2.5% in 2013 to 0.8% in 2014.
- The preferred IOL material was acrylic and non-foldable type.
- The use of topical anesthesia increased from 85.1% in 2013 to 95.8% in 2014.
- Majority of the patient operated had IOL implantation (99.6% in 2014). Among these patients who had IOL, 98.2% had posterior chamber IOL.

### 4. Intra-operative Complications

- The percentage of intra-operative complication decreased from 7.1% in 2013 to 4.93% in 2014
- PCR was 1.3% in 2014.

**5. Cataract Surgery Outcome**

- In average, more than 90.0% of patient registered to CSR had cataract surgery outcome data.
- The percentage of patients with post-operative endophthalmitis was 0%.
- In eyes without ocular co-morbidity, almost 2/3 eyes had post-op unaided visual acuity 6/12 or better (69.7% in 2014). With refraction, more than 90.0% achieved post-op vision 6/12 or better (96.6% in 2014). This observation suggested that poor post- op unaided vision was due to refractive error and patients' vision could be improved with glasses.
- Patients who had phaco had better post-op visual outcome when compared to other type of surgeries. 96.9% of phaco patients had refracted vision of 6/12 or better in 2014 as compared to ECCE (85.7%).
- The main contributing factor for eyes with post-operative refracted VA worse than 6/12 was high astigmatism followed by pre-existing ocular co-morbidity.
- When patients with preexisting ocular co-morbidity were excluded from analysis, preexisting ocular co-morbidity (not detected preoperatively) followed by high astigmatism were the major causes of poor visual outcome.
- In 2014, with the mean target refraction (all eyes) of -0.3D, the mean actual refraction was -0.5D for phaco eyes, and -0.3D for ECCE eyes. Thus, eyes which had undergone ECCE had more myopic shift than eyes which had phaco.
- In 2014, there was disparity between the targeted and the actual refraction. 93.9% of eyes had a different in target and actual refraction of between ±1.0D.

**COMPARISON BETWEEN ALL MOH AND KK1M (2014)**

| | | **All MOH** | **PPKM-HS** | **KK1M Mobile and Transit** |
|---|---|---|---|---|
| Concept of Service | | | Outreach<br>Low risk patients<br>Fully day care<br>Fully certified surgeons | Outreach<br>Multilevel risk of patients<br>Fully certified surgeons |
| Patient Profile | Age | Mean 65.9 | 65.2 | Mean 68.6 |
| | Systemic Co-morbidity | 75.6%<br>(Hypertension 61.3%)<br>(Diabetis Mellitus 44.4%) | 77.3%<br>(Hypertension 62.0%)<br>(Diabetis Mellitus 46.0%) | 57.3%<br>(Hypertension 47.4%)<br>(Diabetis Mellitus 24.5%) |
| | First eye vs Second Eye Surgery | First eye 64.3%<br>Second eye 35.2% | First eye 53.5%<br>Second eye 40.3% | First eye 80.6%<br>Second eye 19.4% |
| | Past Ocular Surgery | 97.4% no past ocular surgery | 97.8% no past ocular surgery | 99.5% no past ocular surgery |
| | Ocular Co-morbidity | 39.8%.<br>The commonest was diabetic retinopathy in any forms (10.9%) | 16.9&<br>The commonest was diabetic retinopathy in any forms (7.3%) and glaucoma (2.0%) | 24.3%<br>The commonest was diabetic retinopathy in any forms and pterygium significantly involving the cornea (1.6%) |

| | | All MOH | PPKM-HS | KK1M Mobile and Transit |
|---|---|---|---|---|
| | Pre-operative VA | <6/60 (50.7%) | <6/60 (45.0%) | <6/60 (63.4%) |
| | Bimodal VA | 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. | Similar pattern | Similar pattern |
| Surgical Practices | Day Care | 66.7% | NA | 97.3% |
| | Method of Cataract Extraction | Phaco 87.4% ECCE 8.9% | Phaco 96.9% ECCE 0.8% | Phaco 88.5% ECCE 9.5% |
| | Topical anaesthesia | 66.6% | 95.8% | 84.4 |
| | Subtenon anaesthesia | 24.8% | 5.4% | 14.7% |
| | Intracameral anaesthesia | 16.8% | 21.8% | 0.5% |
| Intraoperative Complication | Overall percentage of intra-operative complication | 5.3% | 2.69% | 5.0% |
| | PCR | 2.7% | 1.3% (may not be accurate due to data mapping error) | 2.7% |
| Outcome | Surgeries with outcome data | 93.0% | 99.0% | 80.0% |
| | Post-operative Endophthalmitis | 0.05% (19 patients). | 0% | 0% |
| | Percentage of unaided VA 6/12 or better in eye without ocular co-morbidity | 58.5% | 69.7% | 46.1% |
| | Percentage of refracted VA 6/12 or better in eye without ocular co-morbidity | 93.8% | 96.6% | 90.5% |

| | | All MOH | PPKM-HS | KK1M Mobile and Transit |
|---|---|---|---|---|
| | Percentage of surgery using phaco achieving BCVA 6/12 or better in eyes without ocular co-morbidity | 94.8% | 96.9% | 90.7% |
| | Myopic shift | Mean target = -0.4D<br>Mean actual (phaco) = -0.6<br>Mean actual (ECCE) = -0.9D | Mean target = -0.3D<br>Mean actual (phaco) = -0.5D<br>Mean actual (ECCE) = -0.3D | Mean target = -0.3D<br>Mean actual (phaco) = -1.0D<br>Mean actual (ECCE) = -1.2D |
| | Percentage of eyes achieving difference of target and actual refraction within **±1.0D** | 81.7% | 93.9% | 62.2% |

*Limitation: All MOH includes PPKM-HS and KK1M*

## RETINOBLASTOMA REGISTRY

### 1. Stock and Flow

- A total of 170 patients registered, of which 17 patients were diagnosed in 2014.

### 2. Patients Demography

- Mean age at presentation was 2.2 years.
- Youngest age was 27 days and the oldest was 13 years old.
- About a third (31.8%) of these patients was in the age group of 13 to 24 months and 24.7% were less than 12 months at presentation.
- More boys (55.9%) than girls were affected.
- Majority were of Malay ethnicity (57.7%), followed by Chinese (15.3%) and Indians (7.1%).

### 3. Ocular History and Presentation

- The most common presentation was leukocoria (81.8%)
- Mean duration of disease from onset of symptoms to presentation was 4.4 months with the majority (80.2%) within 1 to 6 months.
- 60 patients (35.3%) had bilateral disease.
- Two patients had positive family history of retinoblastoma.

**4. Investigation and Classification**

- The presence of calcified mass was detected in 68.7% by CT scan.
- In patients who underwent MRI, 10.0% showed presence of mass but only 8.3% had calcification.
- Extraocular extension detected by CT scan in 23 eyes, 10% and 2.6% through CT scan and MRI respectively, the majority involved the optic pathway.
- More than half (54.8%) of the patients presented with Group E Retinoblastoma.

**5. Management**

- 60.6% of patients had systemic chemotherapy with a mean of 7 cycles (maximum 15 chemotherapy cycles).
- In bilateral cases, 10 patients had ocular (7 subtenon and 3 intravitreal injection) chemotherapy combined with systemic chemotheraphy
- 82 affected eyes out of 110 eyes (74.5%) with unilateral RB were enucleated with 41.8% of these eyes showed histopathological extension outside eyeball.
- Among eyes with bilateral involvement, 40.0% of eyes were enucleated**,** 9 patients had external beam radiotherapy.

# CHAPTER 1

# CATARACT SURGERY REGISTRY 2014

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# CHAPTER 1: CATARACT SURGERY REGISTRY

## 1.1 Stock and Flow

### 1.1.1 Stock and Flow

The number of CSR source data provider (SDP) continued to increase. In 2014, there were in total 43 SDPs. The number of cataract surgeries being registered to CSR also increased from 18426 in 2007 to 40532 in 2014.

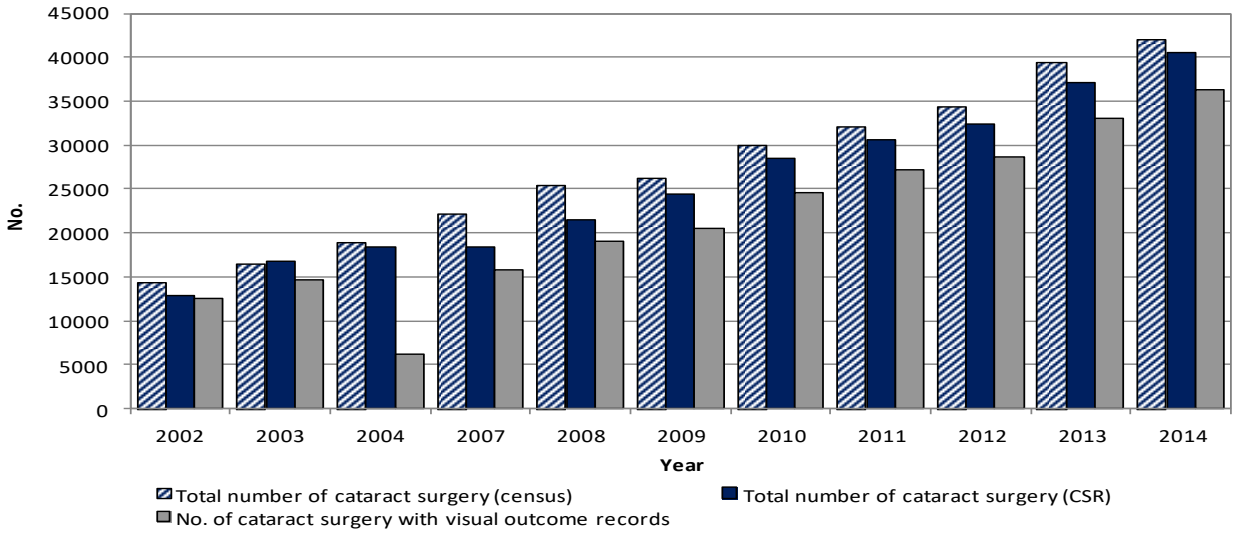
Table 1.1.1-1: Stock and Flow, CSR 2007-2014

| Year | No. of SDP | Total no. of cataract surgery registered to CSR | Cataract surgery with visual outcome records | |
|---|---|---|---|---|
| | | | n | % |
| 2007 | 32 | 18426 | 15786 | 85.7 |
| 2008 | 36 | 21496 | 19063 | 88.7 |
| 2009 | 36 | 24438 | 20590 | 84.3 |
| 2010 | 36 | 28506 | 24521 | 86.0 |
| 2011 | 36 | 30611 | 27219 | 88.0 |
| 2012 | 36 | 32473 | 28589 | 88.0 |
| 2013 | 41 | 37150 | 33063 | 89 |
| 2014 | 43 | 40532 | 36251 | 89.4 |

Table 1.1.1-2: Ascertainment for MOH Hospitals, CSR 2007-2014

| 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 (%) |
|---|---|---|---|
| 2007 | 22051 | 18426 | 83.6% |
| 2008 | 25393 | 21496 | 84.6% |
| 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% |

Figure 1.1.1-1: Stock and Flow, CSR 2002-2014




1.1.1-3: Ascertainment by SDP, CSR 2014

| Ascertainment | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total no. of cataract surgery (based on census) (a) | Total no. of cataract surgery registered to CSR (based on operative record) (b) | Total no. of outcome form submitted (c) | Total no. of outcome form with unaided vision (d) | Total no. of outcome form with refracted vision (e) | % Ascertainment for CSR (b/a*100) | % Ascertainment for Outcome form submitted (c/b*100) | % Ascertainment for Outcome with unaided vision (d/c*100) | % Ascertainment for Outcome with refracted vision (e/c*100) |
| **All Centres** | 41927 | 40532 | 37946 | 36251 | 33532 | 96.7 | 93.6 | 95.5 | 88.4 |
| Alor Setar | 2106 | 2106 | 2106 | 2054 | 1778 | 100.0 | 100.0 | 97.5 | 84.4 |
| Ampang | 950 | 946 | 946 | 936 | 812 | 99.6 | 100.0 | 98.9 | 85.8 |
| Batu Pahat | 458 | 467 | 467 | 420 | 420 | 102.0 | 100.0 | 89.9 | 89.9 |
| Bintulu | 349 | 374 | 302 | 291 | 285 | 107.2 | 80.7 | 96.4 | 94.4 |
| Bukit Mertajam | 1056 | 998 | 998 | 916 | 821 | 94.5 | 100.0 | 91.8 | 82.3 |
| Sandakan | 527 | 237 | 235 | 182 | 180 | 45.0 | 99.2 | 77.4 | 76.6 |
| Ipoh | 2786 | 2759 | 2574 | 2524 | 2302 | 99.0 | 93.3 | 98.1 | 89.4 |
| Kangar | 496 | 426 | 335 | 334 | 305 | 85.9 | 78.6 | 99.7 | 91.0 |
| Keningau | 133 | 133 | 133 | 128 | 119 | 100.0 | 100.0 | 96.2 | 89.5 |
| Kota Bharu | 285 | 285 | 141 | 140 | 83 | 100.0 | 49.5 | 99.3 | 58.9 |
| Kuala Krai | 582 | 365 | 355 | 353 | 303 | 62.7 | 97.3 | 99.4 | 85.4 |
| Kuala Lumpur | 1777 | 1932 | 938 | 920 | 905 | 108.7 | 48.6 | 98.1 | 96.5 |
| Kuala Pilah | 520 | 493 | 492 | 481 | 468 | 94.8 | 99.8 | 97.8 | 95.1 |
| Kuala Terengganu | 961 | 900 | 850 | 848 | 835 | 93.7 | 94.4 | 99.8 | 98.2 |
| Melaka | 2148 | 2139 | 2139 | 1979 | 1781 | 99.6 | 100.0 | 92.5 | 83.3 |
| Miri | 1003 | 949 | 902 | 859 | 847 | 94.6 | 95.0 | 95.2 | 93.9 |
| Muar | 734 | 729 | 648 | 640 | 606 | 99.3 | 88.9 | 98.8 | 93.5 |

| Ascertainment | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total no. of cataract surgery (based on census) (a) | Total no. of cataract surgery registered to CSR (based on operative record) (b) | Total no. of outcome form submitted (c) | Total no. of outcome form with unaided vision (d) | Total no. of outcome form with refracted vision (e) | % Ascertainment for CSR (b/a*100) | % Ascertainment for Outcome form submitted (c/b*100) | % Ascertainment for Outcome with unaided vision (d/c*100) | % Ascertainment for Outcome with refracted vision (e/c*100) |
| Pulau Pinang | 2074 | 1791 | 1769 | 1759 | 1572 | 86.4 | 98.8 | 99.4 | 88.9 |
| Putrajaya | 444 | 367 | 367 | 362 | 330 | 82.7 | 100.0 | 98.6 | 89.9 |
| Kota Kinabalu | 1187 | 1040 | 951 | 939 | 844 | 87.6 | 91.4 | 98.7 | 88.7 |
| Selayang | 899 | 899 | 899 | 875 | 831 | 100.0 | 100.0 | 97.3 | 92.4 |
| Serdang | 1151 | 1265 | 1265 | 1252 | 1118 | 109.9 | 100.0 | 99.0 | 88.4 |
| Sibu | 852 | 866 | 862 | 814 | 774 | 101.6 | 99.5 | 94.4 | 89.8 |
| Sri Manjung | 628 | 625 | 624 | 613 | 574 | 99.5 | 99.8 | 98.2 | 92.0 |
| Sultan Ismail | 610 | 609 | 609 | 594 | 594 | 99.8 | 100.0 | 97.5 | 97.5 |
| Johor Bahru | 1470 | 1381 | 1056 | 1003 | 923 | 93.9 | 76.5 | 95.0 | 87.4 |
| Sungai Buloh | 792 | 693 | 693 | 662 | 650 | 87.5 | 100.0 | 95.5 | 93.8 |
| Sungei Petani | 1021 | 1022 | 1022 | 1008 | 859 | 100.1 | 100.0 | 98.6 | 84.1 |
| Taiping | 1233 | 1233 | 1233 | 1221 | 1165 | 100.0 | 100.0 | 99.0 | 94.5 |
| Tawau | 589 | 540 | 501 | 449 | 309 | 91.7 | 92.8 | 89.6 | 61.7 |
| Teluk Intan | 1035 | 1013 | 1013 | 922 | 854 | 97.9 | 100.0 | 91.0 | 84.3 |
| Temerloh | 1046 | 1047 | 1047 | 828 | 909 | 100.1 | 100.0 | 79.1 | 86.8 |
| Kuantan | 706 | 576 | 551 | 517 | 498 | 81.6 | 95.7 | 93.8 | 90.4 |
| Klang | 1683 | 1461 | 1461 | 1370 | 1291 | 86.8 | 100.0 | 93.8 | 88.4 |
| Seremban | 1332 | 1585 | 1416 | 1409 | 1328 | 119.0 | 89.3 | 99.5 | 93.8 |
| Kuching | 2089 | 2068 | 2000 | 1825 | 1641 | 99.0 | 96.7 | 91.3 | 82.1 |
| Kemaman | 72 | 72 | 24 | 23 | 18 | 100.0 | 33.3 | 95.8 | 75.0 |
| Sarikei | 555 | 555 | 524 | 519 | 475 | 100.0 | 94.4 | 99.0 | 90.6 |
| Kulim | 267 | 265 | 265 | 236 | 234 | 99.3 | 100.0 | 89.1 | 88.3 |
| KK1M Terengganu | 37 | 37 | 36 | 35 | 35 | 100.0 | 97.3 | 97.2 | 97.2 |
| KK1M Kelantan | 186 | 186 | 130 | 117 | 101 | 100.0 | 69.9 | 90.0 | 77.7 |
| KK1M Sarawak | 832 | 832 | 815 | 711 | 707 | 100.0 | 98.0 | 87.2 | 86.7 |
| MAIWP | 2266 | 2266 | 2252 | 2183 | 2048 | 100.0 | 99.4 | 96.9 | 90.9 |

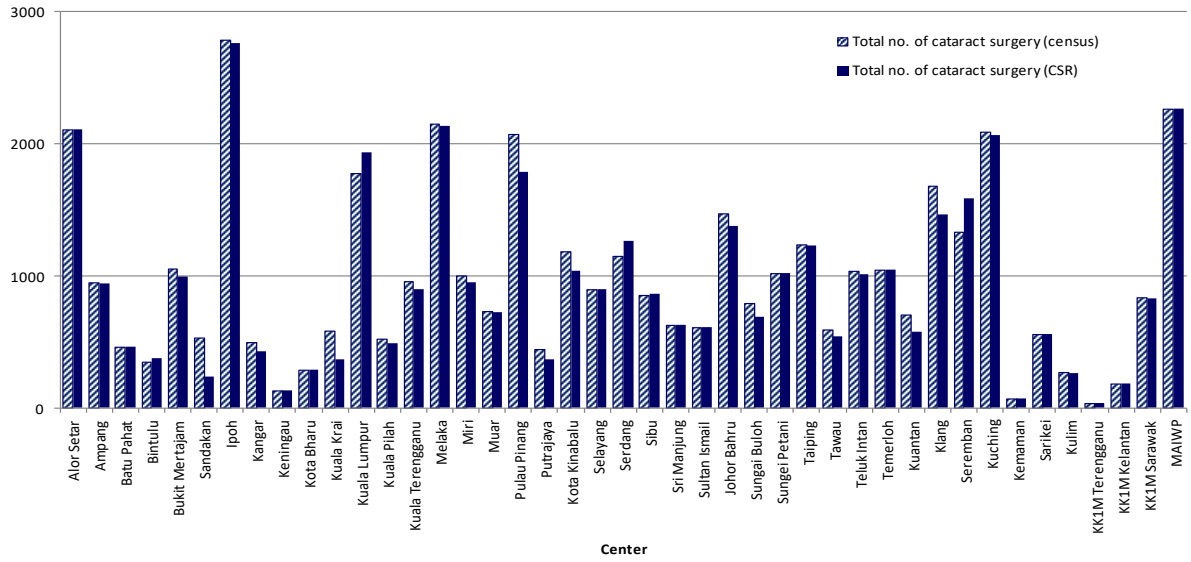



Figure 1.1.1-2: Ascertainment by SDP, CSR 2014

## 1.2 Characteristics of Patient

### 1.2.1 Demography

The mean age for patients presented for cataract surgery was 65. A larger percentage of patients presented within the age group of 65-74 years old. There was no marked gender difference over the years.

Table 1.2.1-1: Age and Gender Distribution, CSR 2007-2014

| **Year** | **2007** | | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total number of cataract surgery | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| **Age** | | | | | | | | | | | | | | | | |
| Mean (yrs) | 64.3 | | 64.6 | | 64.7 | | 65 | | 65 | | 65 | | 65.7 | | 65.9 | |
| Median (yrs) | 66 | | 66 | | 66 | | 66 | | 66 | | 66 | | 67 | | 67 | |
| Minimum (month) | 1 | | 1 | | 1.2 | | 1.8 | | 2.6 | | 0.8 | | 0.8 | | 3.3 | |
| Maximum (yrs) | 97 | | 102 | | 99 | | 99 | | 104 | | 99 | | 105 | | 101 | |
| **% Distribution** | | | | | | | | | | | | | | | | |
| **Age group, years** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| 0-4 | 54 | 0.3 | 49 | 0.2 | 56 | 0.2 | 60 | 0.2 | 49 | 0.2 | 64 | 0.2 | 20 | 0.1 | 25 | 0.1 |
| 5-9 | 54 | 0.3 | 59 | 0.3 | 66 | 0.3 | 70 | 0.3 | 74 | 0.2 | 81 | 0.3 | 41 | 0.1 | 40 | 0.1 |
| 10-14 | 51 | 0.3 | 42 | 0.2 | 43 | 0.2 | 47 | 0.2 | 57 | 0.2 | 61 | 0.2 | 64 | 0.2 | 49 | 0.1 |
| 15-19 | 49 | 0.3 | 49 | 0.2 | 52 | 0.2 | 70 | 0.3 | 72 | 0.2 | 64 | 0.2 | 82 | 0.2 | 77 | 0.2 |
| 20-24 | 71 | 0.4 | 84 | 0.4 | 77 | 0.3 | 73 | 0.3 | 103 | 0.3 | 75 | 0.2 | 94 | 0.3 | 86 | 0.2 |
| 25-29 | 77 | 0.4 | 67 | 0.3 | 104 | 0.4 | 90 | 0.3 | 90 | 0.3 | 96 | 0.3 | 113 | 0.3 | 106 | 0.3 |
| 30-34 | 80 | 0.4 | 100 | 0.5 | 106 | 0.4 | 137 | 0.5 | 125 | 0.4 | 146 | 0.5 | 133 | 0.4 | 128 | 0.3 |
| 35-39 | 180 | 1.0 | 162 | 0.8 | 180 | 0.7 | 198 | 0.7 | 224 | 0.7 | 196 | 0.6 | 219 | 0.6 | 212 | 0.5 |
| 40-44 | 314 | 1.7 | 377 | 1.8 | 377 | 1.5 | 457 | 1.6 | 408 | 1.3 | 474 | 1.5 | 459 | 1.2 | 469 | 1.2 |
| 45-49 | 727 | 4.0 | 777 | 3.6 | 881 | 3.6 | 966 | 3.4 | 984 | 3.2 | 988 | 3.0 | 1110 | 3.0 | 1035 | 2.6 |
| 50-54 | 1409 | 7.7 | 1630 | 7.6 | 1816 | 7.4 | 2077 | 7.3 | 2186 | 7.1 | 2089 | 6.4 | 2220 | 6.0 | 2365 | 5.8 |
| 55-59 | 2128 | 11.6 | 2540 | 11.8 | 2868 | 11.7 | 3379 | 11.9 | 3646 | 11.9 | 3758 | 11.6 | 4158 | 11.2 | 4507 | 11.1 |
| 60-64 | 2895 | 15.7 | 3497 | 16.3 | 4088 | 16.7 | 4846 | 17.0 | 5341 | 17.5 | 5689 | 17.5 | 6443 | 17.3 | 7272 | 17.9 |
| 65-69 | 3675 | 19.9 | 4169 | 19.4 | 4656 | 19.1 | 5069 | 17.8 | 5609 | 18.3 | 6372 | 19.6 | 7556 | 20.3 | 8563 | 21.1 |
| 70-74 | 3425 | 18.6 | 4138 | 19.3 | 4878 | 20.0 | 5651 | 19.8 | 5870 | 19.2 | 6102 | 18.8 | 7045 | 19.0 | 7444 | 18.4 |
| 75-79 | 2059 | 11.2 | 2456 | 11.4 | 2789 | 11.4 | 3446 | 12.1 | 3816 | 12.5 | 4135 | 12.7 | 5077 | 13.7 | 5502 | 13.6 |
| ≥80 | 1128 | 6.1 | 1279 | 6.0 | 1401 | 5.7 | 1868 | 6.6 | 1957 | 6.4 | 2083 | 6.4 | 2316 | 6.2 | 2652 | 6.5 |
| Missing | 50 | 0.3 | 21 | 0.1 | 0 | 0 | 2 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Gender** | | | | | | | | | | | | | | | | |
| Male | 8820 | 47.9 | 10295 | 47.9 | 11829 | 48.4 | 13631 | 47.8 | 14696 | 48 | 15506 | 47.8 | 17604 | 47.4 | 19109 | 47.2 |
| Female | 9606 | 52.1 | 11168 | 52 | 12609 | 51.6 | 14871 | 52.2 | 15915 | 52 | 16966 | 52.3 | 19546 | 52.6 | 21423 | 52.8 |
| Missing | 0 | 0 | 33 | 0.2 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

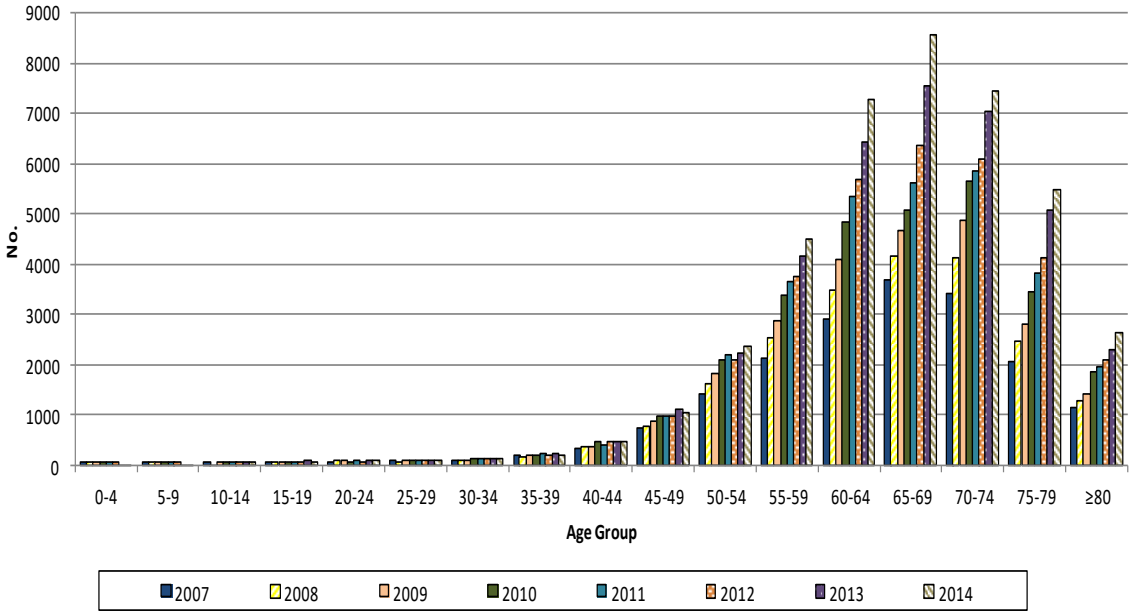



Figure 1.2.1-1: Age Distribution, CSR 2007-2014

### 1.2.2 Systemic Co-morbidity

The common systemic co-morbidity encountered in patients presenting for cataract surgery were hypertension, diabetes mellitus, ischemic heart disease and renal failure The overall percentage of such patients showed an increasing trend over the years. The percentages of patients with hypertension and diabetes mellitus were increasing.

Table 1.2.2-1: Distribution of Systemic Co-morbidity, CSR 2007-2014

| **Year** | **2007** | | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| Percentage of patients with any systemic co-morbidity | 67.5 | | 68.7 | | 71 | | 70.6 | | 72 | | 72.4 | | 74.8 | | 75.6 | |
| **Percentage of patients with specific systemic co-morbidity** | | | | | | | | | | | | | | | | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| 1. Hypertension | 8630 | 46.8 | 10932 | 50.9 | 13050 | 53.4 | 15630 | 54.8 | 17238 | 56.3 | 18655 | 57.5 | 22327 | 60.1 | 24832 | 61.3 |
| 2. Diabetes Mellitus | 6869 | 37.3 | 8188 | 38.1 | 9556 | 39.1 | 11598 | 40.7 | 12778 | 41.7 | 13635 | 42.0 | 16073 | 43.3 | 17976 | 44.4 |
| 3. Ischaemic Heart Disease | 1668 | 9.1 | 2037 | 9.5 | 2294 | 9.4 | 2441 | 8.6 | 2515 | 8.2 | 2565 | 7.9 | 3026 | 8.1 | 3283 | 8.1 |
| 4. Renal Failure | 461 | 2.5 | 624 | 2.9 | 679 | 2.8 | 804 | 2.8 | 814 | 2.7 | 822 | 2.5 | 1021 | 2.7 | 1160 | 2.9 |
| 5. Cerebrovascular accident | 0 | 0 | 29 | 0.1 | 305 | 1.2 | 302 | 1.1 | 380 | 1.2 | 352 | 1.1 | 444 | 1.2 | 571 | 1.4 |
| 6. COAD/Asthma | 798 | 4.3 | 955 | 4.4 | 1039 | 4.3 | 1024 | 3.6 | 1088 | 3.6 | 1104 | 3.4 | 1340 | 3.6 | 1543 | 3.8 |
| 7. Others | 1399 | 7.6 | 1974 | 9.2 | 2460 | 10.1 | 2891 | 10.1 | 3538 | 11.6 | 3916 | 12.1 | 5766 | 15.5 | 6797 | 16.8 |

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

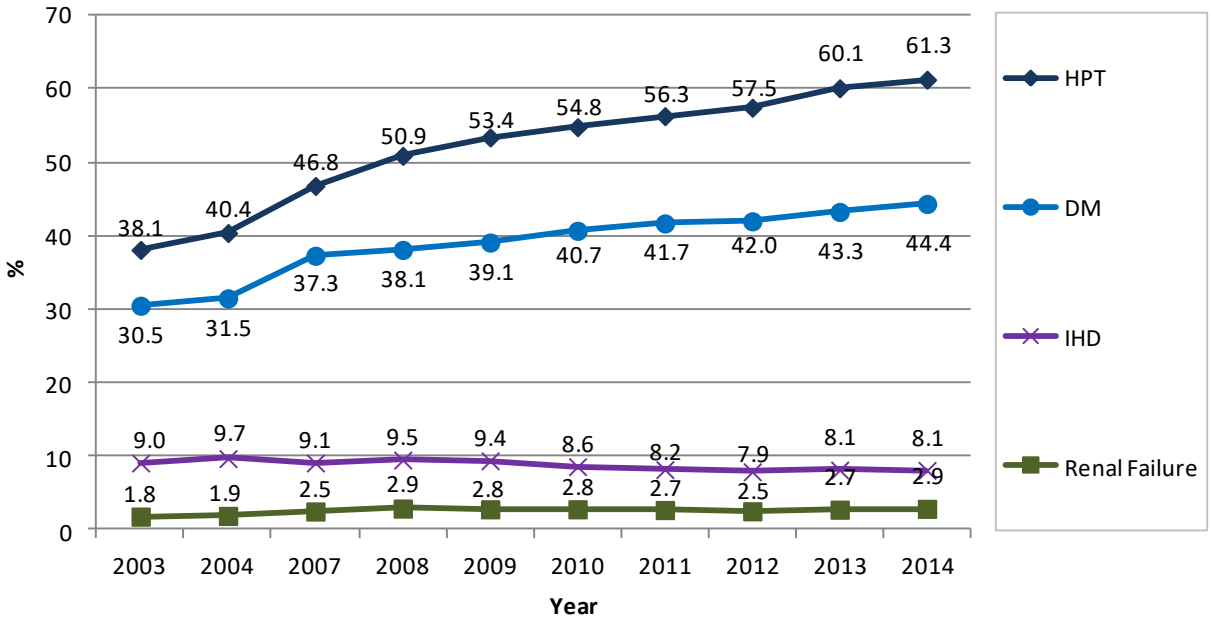



Figure 1.2.2-1: Percentage of Patients with Specific Ocular Co-morbidity, CSR 2002-2014

### 1.2.3 Cause of Cataract

Majority of the patients presented with primary cataract. In eyes with primary cataract, senile or age-related cataract was the commonest. In eyes with secondary cataract, trauma was the commonest. This pattern remained unchanged over the years.

Table 1.2.3-1: Causes of Cataract, CSR 2007-2014

| **Year** | **2007** | | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Primary cataract | 17410 | 94.4 | 20329 | 94.6 | 23117 | 94.6 | 26981 | 94.7 | 29050 | 94.9 | 30813 | 94.9 | 35116 | 94.5 | 38908 | 96.0 |
| Secondary cataract | 557 | 3 | 530 | 2.5 | 587 | 2.4 | 660 | 2.3 | 764 | 2.5 | 608 | 1.9 | 547 | 1.5 | 568 | 1.4 |
| Missing value | 460 | 2.5 | 637 | 3 | 734 | 3 | 865 | 3 | 797 | 2.6 | 1052 | 3.2 | 1487 | 4.0 | 1056 | 2.6 |
| **Primary Cataract (N)** | **17410** | | **20329** | | **23117** | | **26981** | | **29050** | | **30813** | | **35116** | | **38168** | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Senile/age related | 17075 | 98.1 | 19995 | 98.4 | 22782 | 98.6 | 26671 | 98.9 | 28736 | 98.9 | 30299 | 98.3 | 34841 | 99.2 | 37904 | 99.3 |
| Congenital | 129 | 0.7 | 124 | 0.6 | 124 | 0.5 | 44 | 0.2 | 34 | 0.1 | 57 | 0.2 | 11 | 0.0 | 13 | 0.0 |
| Development | 169 | 1 | 156 | 0.8 | 166 | 0.7 | 236 | 0.9 | 249 | 0.9 | 419 | 1.4 | 233 | 0.7 | 215 | 0.6 |
| Others | 37 | 0.2 | 54 | 0.3 | 45 | 0.2 | 30 | 0.1 | 31 | 0.1 | 38 | 0.1 | 31 | 0.1 | 36 | 0.1 |
| **Secondary Cataract (N)** | **557** | | **530** | | **587** | | **660** | | **764** | | **608** | | **547** | | **541** | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Trauma | 355 | 63.7 | 330 | 62.3 | 330 | 56.2 | 346 | 52.4 | 383 | 50.1 | 313 | 51.5 | 322 | 58.9 | 343 | 63.4 |
| Drug induced | 55 | 9.9 | 76 | 14.3 | 79 | 13.5 | 64 | 9.7 | 60 | 7.9 | 46 | 7.6 | 48 | 8.8 | 71 | 13.1 |
| Surgery induced | 82 | 14.7 | 39 | 7.4 | 107 | 18.2 | 93 | 14.1 | 101 | 13.2 | 122 | 20.1 | 88 | 16.1 | 78 | 14.4 |
| Others | 65 | 11.7 | 85 | 16 | 71 | 12.1 | 157 | 23.8 | 220 | 28.8 | 127 | 20.9 | 89 | 16.3 | 49 | 9.1 |

### 1.2.4 First or Second Eye Surgery

Two third of patients were operated for the first time. Only one third of the patients returned for second surgery (for the fellow eye). This pattern remained unchanged since 2007. This was despite the declining percentage of eyes with intra-operative complications during surgery in the previous eye surgery (from 5.6% in 2002 to 2.7% in 2014).

The mean duration between the first and fellow eye showed an increasing trend, from 23.4 months in 2007 to 47.5 months in 2014.

Table 1.2.4-1: First of Second/Fellow eye Surgery, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| First eye surgery | 12810 | 69.5 | 14610 | 68.0 | 16446 | 67.3 | 18919 | 66.4 | 20466 | 66.9 | 21539 | 66.3 | 23986 | 64.6 | 26080 | 64.3 |
| Fellow eye surgery | 5559 | 30.2 | 6849 | 31.9 | 7938 | 32.5 | 9441 | 33.1 | 10088 | 33.0 | 10896 | 33.6 | 13045 | 35.1 | 14267 | 35.2 |
| Missing | 57 | 0.3 | 37 | 0.2 | 54 | 0.2 | 146 | 0.5 | 57 | 0.2 | 38 | 0.1 | 119 | 0.3 | 185 | 0.5 |
| Patients who had second surgery in the same year | 759 | 4.1 | 1135 | 5.3 | 2702 | 11.1 | 2129 | 7.5 | 2246 | 7.3 | 2545 | 7.8 | 3214 | 8.7 | 3336 | 8.2 |
| **Period of time between first and fellow eye surgery (months)** | | | | | | | | | | | | | | | | |
| N | 4860 | | 5953 | | 7353 | | 9378 | | 10009 | | 10784 | | 12922 | | 14170 | |
| Mean | 23.4 | | 22 | | 24.4 | | 36.1 | | 39.2 | | 40.9 | | 42.3 | | 47.5 | |
| SD | 24.3 | | 22.8 | | 31.5 | | 43.6 | | 49.3 | | 52.4 | | 58.4 | | 59.6 | |
| Median | 13.3 | | 13.1 | | 12.1 | | 15.1 | | 15.4 | | 14.7 | | 14.3 | | 15.0 | |
| Patients who had cataract surgery before | 5559 | | 6849 | | 7938 | | 9441 | | 10088 | | 10896 | | 13045 | | 14267 | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Eyes with intra-operative complications during surgery in the first eye | 313 | 5.6 | 298 | 4.4 | 346 | 4.4 | 324 | 3.4 | 302 | 3.0 | 281 | 2.6 | 341 | 2.6 | 386 | 2.7 |

### 1.2.5 Past Ocular Surgery of the Operated Eye

Most eyes to be operated had no prior ocular surgery. The commonest past ocular surgery was vitreoretinal (VR) surgery and pterygium surgery. The percentage of eye with past history of filtering surgery and penetrating keratoplasty remained low.

Table 1.2.5-1: Past Ocular Surgery of the Operated Eye, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| No. of eyes with past ocular surgery record (N) | 17379 | | 20674 | | 23109 | | 26711 | | 28349 | | 30687 | | 34625 | | 37935 | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Patients with no past ocular surgery | 16545 | 95.2 | 20010 | 96.8 | 22387 | 96.9 | 25870 | 96.9 | 27400 | 96.7 | 29770 | 97.0 | 33721 | 97.4 | 36938 | 97.4 |
| Vitreoretinal surgery | 261 | 1.4 | 161 | 0.8 | 267 | 1.2 | 352 | 1.3 | 325 | 1.1 | 326 | 1.1 | 350 | 1.0 | 329 | 0.9 |
| Pterygium excision | 869 | 0.5 | 140 | 0.7 | 164 | 0.7 | 212 | 0.8 | 207 | 0.7 | 208 | 0.7 | 268 | 0.8 | 386 | 1.0 |
| Filtering surgery | 1043 | 0.4 | 57 | 0.3 | 69 | 0.3 | 65 | 0.2 | 80 | 0.3 | 75 | 0.2 | 66 | 0.2 | 60 | 0.2 |
| Penetrating keratoplasty | 1738 | 0.1 | 14 | 0.1 | 18 | 0.1 | 21 | 0.1 | 11 | 0 | 11 | 0.0 | 18 | 0.1 | 8 | 0.0 |
| Others | 417 | 2.4 | 304 | 1.5 | 216 | 0.9 | 203 | 0.8 | 332 | 1.2 | 305 | 1.0 | 220 | 0.6 | 236 | 0.6 |

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

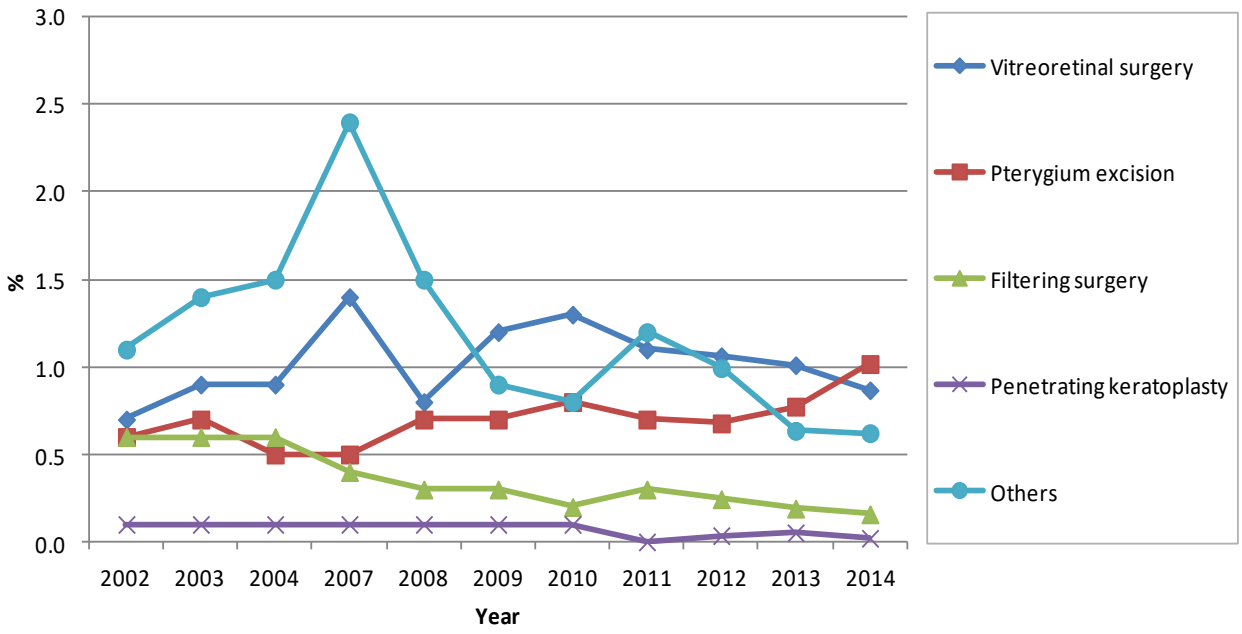



Figure 1.2.5-1: Percentage Distribution of Past Ocular Surgery of the Operated Eye, CSR 2002-2014

1.2.6 Pre-existing Ocular Co-morbidity

One third of the eyes to be operated had ocular co-morbidities. The commonest was diabetic retinopathy (DR) in any forms then followed by glaucoma.. The percentage of eyes presented with lens related complications (phacolytic and phacomorphic) appeared to be decreasing.

Table 1.2.6-1: Distribution of Pre-existing Ocular Co-Morbidity, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Patients with any ocular co-morbidity | 5973 | 32.4 | 7269 | 33.8 | 9442 | 38.6 | 11977 | 42.0 | 12756 | 41.7 | 13024 | 40.1 | 15088 | 40.6 | 16142 | 39.8 |
| Patients with specific ocular co-morbidity | | | | | | | | | | | | | | | | |
| **Anterior segment** | | | | | | | | | | | | | | | | |
| 1. Glaucoma | 1126 | 6.1 | 1408 | 6.6 | 1655 | 6.8 | 1799 | 6.3 | 1976 | 6.5 | 2095 | 6.5 | 2349 | 6.3 | 2385 | 5.9 |
| 2. Pterygium involving the cornea | 288 | 1.6 | 319 | 1.5 | 345 | 1.4 | 387 | 1.4 | 405 | 1.3 | 405 | 1.3 | 477 | 1.3 | 540 | 1.3 |
| 3. Pseudoexfoliation | 221 | 1.2 | 253 | 1.2 | 318 | 1.3 | 289 | 1 | 312 | 1 | 365 | 1.1 | 381 | 1.0 | 445 | 1.1 |
| 4. Corneal opacity | 176 | 1 | 194 | 0.9 | 231 | 0.9 | 251 | 0.9 | 299 | 1 | 311 | 1 | 338 | 0.9 | 447 | 1.1 |
| 5. Chronic uveitis | 81 | 0.4 | 63 | 0.3 | 80 | 0.3 | 89 | 0.3 | 98 | 0.3 | 70 | 0.2 | 96 | 0.3 | 100 | 0.2 |
| **Len related complication** | | | | | | | | | | | | | | | | |
| 1. Phacomorphic | 89 | 0.5 | 85 | 0.4 | 83 | 0.3 | 120 | 0.4 | 114 | 0.4 | 138 | 0.4 | 90 | 0.2 | 110 | 0.3 |
| 2. Phacolytic | 44 | 0.2 | 45 | 0.2 | 47 | 0.2 | 59 | 0.2 | 69 | 0.2 | 41 | 0.1 | 56 | 0.2 | 63 | 0.2 |
| 3. Subluxated/Disclosed | 101 | 0.5 | 89 | 0.4 | 83 | 0.3 | 95 | 0.3 | 119 | 0.4 | 120 | 0.4 | 112 | 0.3 | 119 | 0.3 |
| **Posterior segment** | | | | | | | | | | | | | | | | |
| 1. Diabetic Retinopathy: Non Proliferative | 1125 | 6.1 | 1273 | 5.9 | 916 | 3.7 | 996 | 3.5 | 1783 | 5.8 | 1915 | 5.9 | 2214 | 6.0 | 2471 | 6.1 |
| 2. Diabetic Retinopathy: Proliferative | 465 | 2.5 | 614 | 2.9 | 1307 | 5.3 | 1973 | 6.9 | 1031 | 3.4 | 933 | 2.9 | 1021 | 2.7 | 1134 | 2.8 |
| 3. Diabetic Retinopathy: CSME* | 198 | 1.1 | 221 | 1 | 278 | 1.1 | 346 | 1.2 | 384 | 1.3 | 368 | 1.1 | 473 | 1.3 | 544 | 1.3 |
| 4. Diabetic Retinopathy: Vitreous haemorrhage | 176 | 1 | 165 | 0.8 | 230 | 0.9 | 250 | 0.9 | 296 | 1 | 258 | 0.8 | 237 | 0.6 | 275 | 0.7 |
| 5. ARMD | 231 | 1.3 | 259 | 1.2 | 387 | 1.6 | 462 | 1.6 | 494 | 1.6 | 521 | 1.6 | 609 | 1.6 | 695 | 1.7 |
| 6. Other macular disease (includes hole or scar) | 118 | 0.6 | 148 | 0.7 | 188 | 0.8 | 277 | 1 | 251 | 0.8 | 308 | 1.0 | 309 | 0.8 | 375 | 0.9 |
| 7. Optic nerve disease, any type | 71 | 0.4 | 69 | 0.3 | 118 | 0.5 | 149 | 0.5 | 123 | 0.4 | 182 | 0.6 | 191 | 0.5 | 206 | 0.5 |
| 8. Retinal detachment | 218 | 1.2 | 204 | 0.9 | 294 | 1.2 | 308 | 1.1 | 432 | 1.4 | 341 | 1.1 | 295 | 0.8 | 270 | 0.7 |
| 9. Cannot be assessed | 1357 | 7.4 | 2092 | 9.7 | 3139 | 12.8 | 4457 | 15.6 | 5053 | 16.5 | 4914 | 15.1 | 5881 | 15.8 | 6238 | 15.4 |
| **Miscellaneous** | | | | | | | | | | | | | | | | |
| 1. Amblyopia | 71 | 0.4 | 65 | 0.3 | 62 | 0.3 | 75 | 0.3 | 99 | 0.3 | 98 | 0.3 | 97 | 0.3 | 93 | 0.2 |
| 2. Significant previous eye trauma | 41 | 0.2 | 39 | 0.2 | 39 | 0.2 | 51 | 0.2 | 45 | 0.2 | 49 | 0.2 | 48 | 0.1 | 61 | 0.2 |
| 3. Pre-existing non glaucoma field defect | 4 | 0 | 2 | 0 | 6 | 0 | 3 | 0 | 4 | 0 | 6 | 0.0 | 4 | 0.0 | 8 | 0.0 |
| 4. Others | 668 | 3.6 | 755 | 3.5 | 1053 | 4.3 | 1321 | 4.6 | 1505 | 4.9 | 1729 | 5.3 | 2119 | 5.7 | 2065 | 5.1 |

*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*

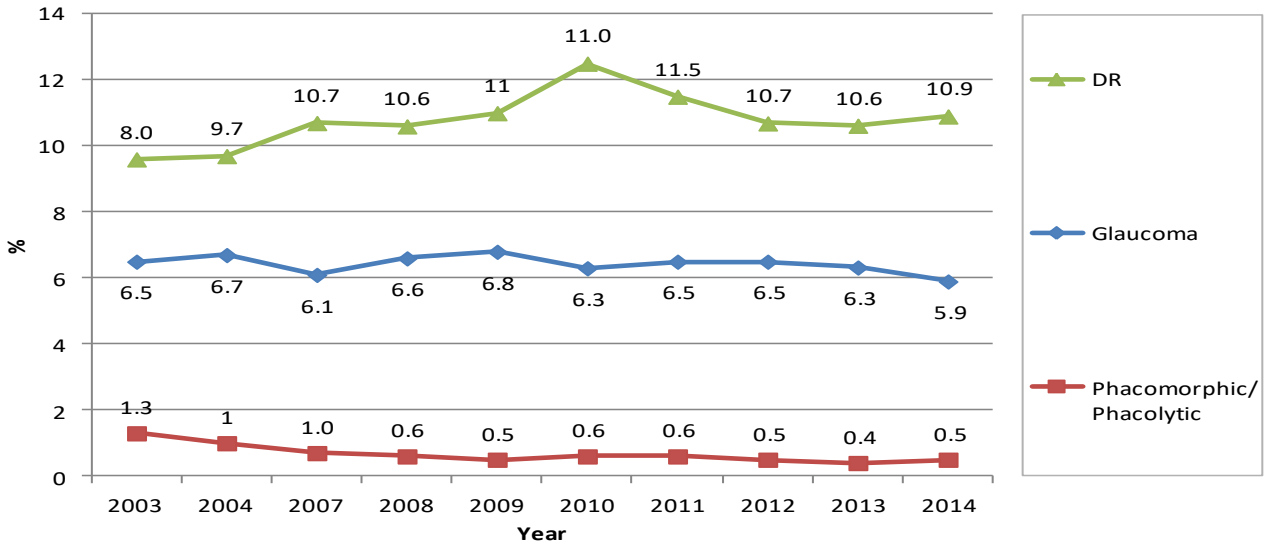



Figure 1.2.6-1: Percentage Distribution of Eyes with Diabetic Retinopathy, Glaucoma and Lens-induced Glaucoma, CSR 2002-2014

## 1.2.7 Pre-operative Vision

In each year, more than 70% of all patients did not have refraction pre-operatively. The proportion of eyes operated (with unaided vision) in the category of <3/60 appeared to be decreasing but the percentages were still high. The bimodal pattern of pre-operative vision remained the same over the years. The first peak was at 6/18 and the second peak was at CF/HM. There was a low proportion of patients between 5/60 to1/60.

Table 1.2.7-1: Distribution of Pre-Operative Vision, CSR 2007-2014

| Year | | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Patients with unaided VA | | 18356 | 99.6 | 21212 | 98.7 | 23796 | 97.4 | 27977 | 98.1 | 30018 | 98.1 | 31833 | 98.0 | 35988 | 96.9 | 39019 | 96.3 |
| Patients with refracted VA | | 5071 | 27.8 | 5683 | 26.4 | 5150 | 21.1 | 7895 | 27.7 | 7932 | 25.9 | 7315 | 22.5 | 8418 | 22.7 | 9524 | 23.5 |
| Patients with no refraction | | 13355 | 72.5 | 15813 | 73.6 | 19288 | 78.9 | 20611 | 72.3 | 22679 | 74.1 | 25158 | 77.5 | 28732 | 77.3 | 31008 | 76.5 |
| 6/12 and better | Unaided | 602 | 3.3 | 646 | 3.0 | 788 | 3.3 | 1016 | 3.6 | 1133 | 3.8 | 1397 | 4.4 | 1865 | 5.2 | 1855 | 4.8 |
| | Refracted | 678 | 13.4 | 935 | 16.5 | 944 | 18.3 | 1474 | 18.7 | 1712 | 21.6 | 1840 | 25.2 | 2297 | 27.3 | 2280 | 23.9 |
| <6/12 - 6/18 | Unaided | 1010 | 5.5 | 1172 | 5.5 | 1392 | 5.8 | 1750 | 6.3 | 2087 | 7.0 | 2311 | 7.3 | 2701 | 7.5 | 2958 | 7.6 |
| | Refracted | 625 | 12.3 | 851 | 15.0 | 838 | 16.3 | 1262 | 16.0 | 1481 | 18.7 | 1503 | 20.5 | 1564 | 18.6 | 1832 | 19.2 |
| <6/18 - 6/60 | Unaided | 5638 | 30.7 | 6840 | 32.2 | 7869 | 33.1 | 9238 | 33.0 | 10255 | 34.2 | 11296 | 35.5 | 12787 | 35.5 | 14404 | 36.9 |
| | Refracted | 1497 | 29.5 | 1800 | 31.7 | 1729 | 33.6 | 2672 | 33.8 | 2731 | 34.4 | 2531 | 34.6 | 2788 | 33.1 | 3243 | 34.1 |
| <6/60 - 3/60 | Unaided | 1086 | 5.9 | 1363 | 6.4 | 1588 | 6.7 | 2085 | 7.5 | 2227 | 7.4 | 2316 | 7.3 | 2686 | 7.5 | 2954 | 7.6 |
| | Refracted | 253 | 5.0 | 241 | 4.2 | 229 | 4.4 | 390 | 4.9 | 324 | 4.1 | 228 | 3.1 | 361 | 4.3 | 383 | 4.0 |
| <3/60 | Unaided | 9920 | 54.0 | 11180 | 52.7 | 12159 | 51.1 | 13888 | 49.6 | 14316 | 47.7 | 14513 | 45.6 | 15949 | 44.3 | 16848 | 43.2 |
| | Refracted | 2018 | 39.8 | 1845 | 32.5 | 1410 | 27.4 | 2097 | 26.6 | 1684 | 21.2 | 1213 | 16.6 | 1408 | 16.7 | 1786 | 18.8 |
| Unaided VA for patient with no refraction | | | | | | | | | | | | | | | | | |
| N | | 13355 | | 15813 | | 19288 | | 20611 | | 22679 | | 25158 | | 28732 | | 31008 | |
| 6/12 and better | | 396 | 3.0 | 414 | 2.6 | 553 | 2.9 | 651 | 3.2 | 702 | 3.1 | 887 | 3.5 | 1210 | 4.2 | 1228 | 4.0 |
| <6/12 - 6/18 | | 643 | 4.8 | 726 | 4.6 | 992 | 5.1 | 1062 | 5.2 | 1217 | 5.4 | 1431 | 5.7 | 1704 | 5.9 | 1893 | 6.1 |
| <6/18 - 6/60 | | 3794 | 28.4 | 4509 | 28.5 | 5654 | 29.3 | 5795 | 28.1 | 6624 | 29.2 | 7762 | 30.9 | 8755 | 30.5 | 9875 | 31.8 |
| <6/60 - 3/60 | | 696 | 5.2 | 920 | 5.8 | 1182 | 6.1 | 1382 | 6.7 | 1509 | 6.7 | 1755 | 7.0 | 1943 | 6.8 | 2056 | 6.6 |
| <3/60 | | 7666 | 57.4 | 9009 | 57.0 | 10412 | 54.0 | 11302 | 54.8 | 12134 | 53.5 | 12777 | 50.8 | 14091 | 49.0 | 14525 | 46.8 |

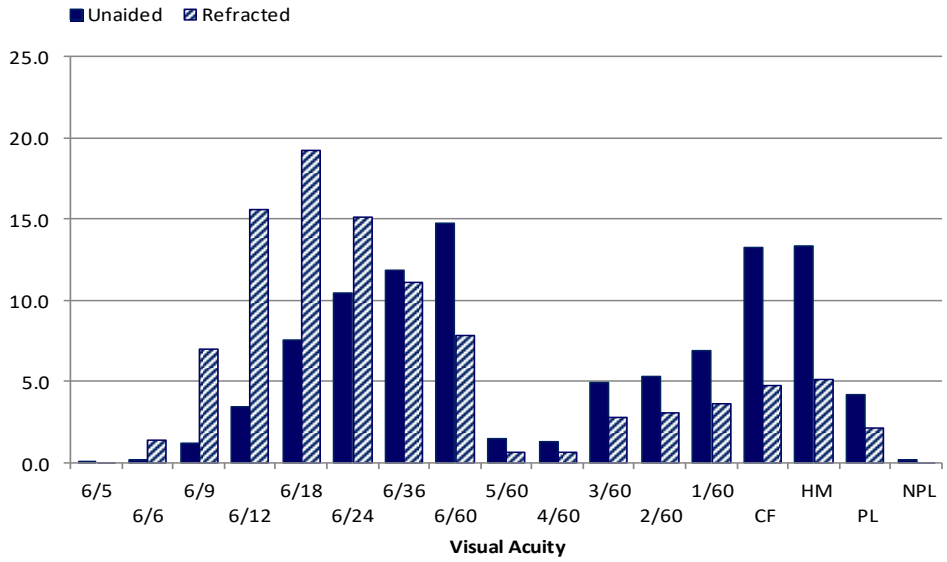



Figure 1.2.7-1: Distribution of Pre-operative Vision (Unaided and Refracted) CSR 2014

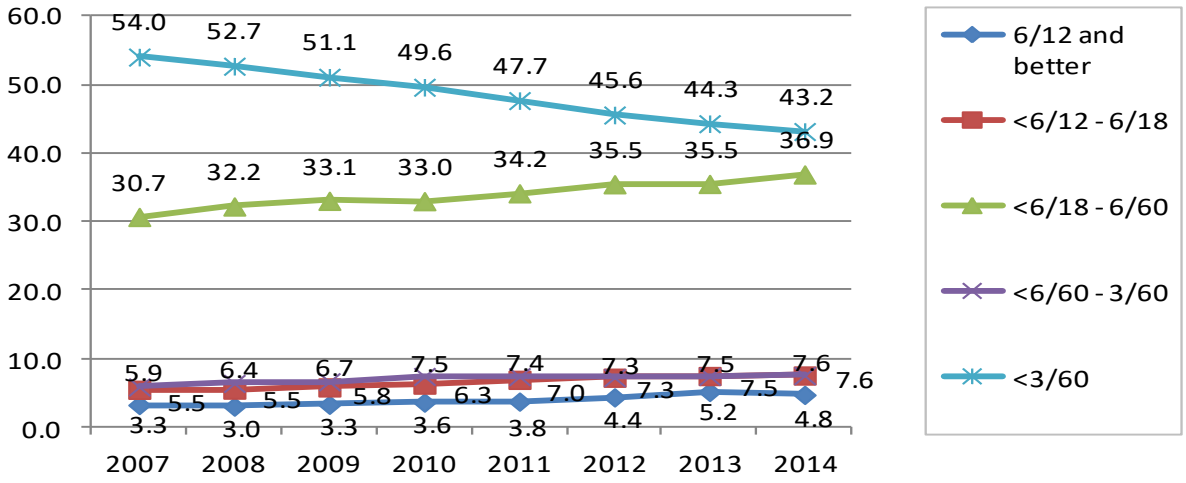



Figure 1.2.7-2: Distribution of Pre-operative Vision (Unaided), CSR 2002-2014

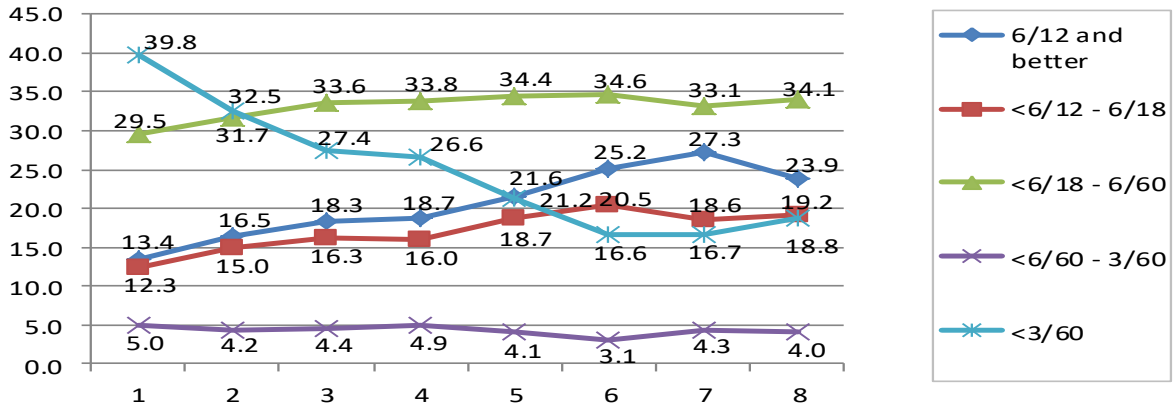



Figure 1.2.7-3: Distribution of Pre-operative Vision (Refracted), CSR 2002-2014

## 1.2.8 Target Refractive Power

The mean target refractive power in 2014 was -0.4D (SD 0.3), with minimum at -8.1D and maximum at +6.0D. The percentage of eyes aimed to have target refraction within (-0.5 to 0 D) increased to 75.1% in 2014. Overall data demonstrated that most surgeons participated in CSR aimed to give patient either emmetropic or slightly myopic refraction post- operatively.

Table 1.2.8-1: Distribution of Target Refractive Power, CSR 2007-2014

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Operated eye ( N) | 11876 | 15083 | 20279 | 24524 | 25885 | 26059 | 28685 | 32256 |
| Mean | -0.5 | -0.1 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 |
| SD | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 |
| Median | -0.5 | -0.5 | -0.5 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 |
| Minimum | -9 | -9.9 | -9.9 | -9.1 | -9.1 | -8 | -8.5 | -8.1 |
| Maximum | 5 | 9.5 | 5.9 | 6 | 4.8 | 9 | 9 | 6.0 |

Table 1.2.8-2: Distribution of Target Refractive Power (excluding age 0-5 years), CSR 2009-2014

| Year | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| Operated eye ( N) | 20236 | 24490 | 25848 | 26017 | 28678 | 32236 |
| Mean | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 |
| SD | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 |
| Median | -0.5 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 |
| Minimum | -9.9 | -9.1 | -9.1 | -8 | -8.5 | -8.1 |
| Maximum | 4.9 | 6 | 4.8 | 9 | 9 | 2.8 |

Table 1.2.8-3: Distribution of Target Refractive Power, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Target refractive power Dioptres | Operated eye N=11876 | | Operated eye N=15083 | | Operated eye N=20279 | | Operated eye N=24524 | | Operated eye N=25885 | | Operated eye N=26059 | | Operated eye N=28685 | | Operated eye N=32256 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| -10-<(-9.5) | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -9.5-<(-9) | 2 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -9-<(-8.5) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| -8.5-<(-8) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| -8-<(-7.5) | 2 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| -7.5-<(-7) | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| -7-<(-6.5) | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| -6.5-<(-5) | 1 | 0 | 2 | 0 | 7 | 0 | 4 | 0 | 10 | 0 | 10 | 0 | 9 | 0 | 10 | 0 |
| -5-<(-4.5) | 3 | 0 | 4 | 0 | 7 | 0 | 3 | 0 | 3 | 0 | 5 | 0 | 5 | 0 | 1 | 0 |
| -4.5-<(-4) | 1 | 0 | 3 | 0 | 5 | 0 | 10 | 0 | 3 | 0 | 5 | 0 | 3 | 0 | 4 | 0 |
| -4-<(-3.5) | 7 | 0.1 | 8 | 0.1 | 11 | 0.1 | 5 | 0 | 11 | 0 | 5 | 0 | 1 | 0 | 5 | 0 |
| -3.5-<(-3) | 6 | 0.1 | 7 | 0 | 11 | 0.1 | 15 | 0.1 | 12 | 0.1 | 6 | 0 | 8 | 0 | 5 | 0 |
| -3-<(-2.5) | 12 | 0.1 | 22 | 0.1 | 18 | 0.1 | 29 | 0.1 | 15 | 0.1 | 15 | 0.1 | 15 | 0.1 | 9 | 0.0 |
| -2.5-<(-2) | 26 | 0.2 | 21 | 0.1 | 29 | 0.1 | 33 | 0.1 | 26 | 0.1 | 38 | 0.2 | 35 | 0.1 | 27 | 0.1 |
| -2-<(-1.5) | 77 | 0.6 | 48 | 0.3 | 58 | 0.3 | 46 | 0.2 | 54 | 0.2 | 67 | 0.3 | 55 | 0.2 | 52 | 0.2 |
| -1.5-<(-1) | 414 | 3.5 | 373 | 2.5 | 260 | 1.3 | 292 | 1.2 | 201 | 0.8 | 226 | 0.9 | 174 | 0.6 | 209 | 0.7 |
| -1-<(-0.5) | 4299 | 36.2 | 6151 | 40.8 | 7972 | 39.3 | 7590 | 31 | 7507 | 29 | 7190 | 27.6 | 6241 | 21.8 | 6840 | 21.2 |
| -0.5-<0 | 6077 | 51.2 | 7480 | 49.6 | 10604 | 52.3 | 15218 | 62.1 | 16913 | 65.3 | 17421 | 66.9 | 21135 | 73.7 | 24210 | 75.1 |
| 0-<0.5 | 821 | 6.9 | 731 | 4.8 | 977 | 4.8 | 920 | 3.8 | 849 | 3.3 | 629 | 2.4 | 697 | 2.4 | 790 | 2.5 |
| 0.5-<1 | 91 | 0.8 | 158 | 1 | 182 | 0.9 | 237 | 1 | 234 | 0.9 | 216 | 0.8 | 187 | 0.7 | 73 | 0.2 |
| 1-<1.5 | 8 | 0.1 | 31 | 0.2 | 17 | 0.1 | 23 | 0.1 | 20 | 0.1 | 32 | 0.1 | 8 | 0 | 4 | 0 |
| 1.5-<2 | 5 | 0 | 14 | 0.1 | 22 | 0.1 | 19 | 0.1 | 9 | 0 | 52 | 0.2 | 28 | 0.1 | 5 | 0.0 |
| 2-<2.5 | 13 | 0.1 | 10 | 0.1 | 85 | 0.4 | 69 | 0.3 | 12 | 0.1 | 123 | 0.5 | 69 | 0.2 | 5 | 0.0 |
| 2.5-<3 | 1 | 0 | 6 | 0 | 4 | 0 | 3 | 0 | 2 | 0 | 10 | 0 | 11 | 0 | 2 | 0 |
| 3-<3.5 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 3.5-<4 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4-<4.5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 4.5-<5 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5-<5.5 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5.5-<6 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6-<6.5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6.5-<7 | 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 |
| 7.5-<8 | 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 | 1 | 0 | 0 | 0 | 0 | 0 |
| 8.5-<9 | 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 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| 9.5-10 | 0 | 0 | 1 | 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 1.2.8-4: Distribution of Target Refractive Power (excluding age 0-5 years), CSR 2007-2014

| Year | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| -10-<(-9.5) | 2 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -9.5-<(-9) | 1 | 0.0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -9-<(-8.5) | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| -8.5-<(-8) | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| -8-<(-7.5) | 1 | 0.0 | 1 | 0 | 0 | 0.0 | 1 | 0.0 | 0 | 0 | 1 | 0 |
| -7.5-<(-7) | 1 | 0.0 | 1 | 0 | 0 | 0.0 | 2 | 0.0 | 0 | 0 | 0 | 0 |
| -7-<(-6.5) | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0 | 1 | 0 |
| -6.5-<(-5) | 6 | 0.0 | 4 | 0.0 | 10 | 0.0 | 10 | 0.0 | 9 | 0 | 10 | 0 |
| -5-<(-4.5) | 7 | 0.0 | 3 | 0.0 | 3 | 0.0 | 5 | 0.0 | 5 | 0 | 1 | 0 |
| -4.5-<(-4) | 5 | 0.0 | 10 | 0.0 | 3 | 0.0 | 5 | 0.0 | 3 | 0 | 4 | 0 |
| -4-<(-3.5) | 9 | 0.0 | 5 | 0.0 | 11 | 0.0 | 5 | 0.0 | 1 | 0 | 5 | 0 |
| -3.5-<(-3) | 10 | 0.1 | 15 | 0.1 | 12 | 0.1 | 6 | 0.0 | 8 | 0 | 5 | 0 |
| -3-<(-2.5) | 18 | 0.1 | 29 | 0.1 | 15 | 0.1 | 15 | 0.1 | 15 | 0.1 | 9 | 0.0 |
| -2.5-<(-2) | 29 | 0.1 | 33 | 0.1 | 26 | 0.1 | 37 | 0.1 | 33 | 0.1 | 27 | 0.1 |
| -2-<(-1.5) | 58 | 0.3 | 46 | 0.2 | 53 | 0.2 | 67 | 0.3 | 55 | 0.2 | 52 | 0.2 |
| -1.5-<(-1) | 259 | 1.3 | 291 | 1.2 | 199 | 0.8 | 226 | 0.9 | 174 | 0.6 | 209 | 0.7 |
| -1-<(-0.5) | 7968 | 39.4 | 7587 | 31.0 | 7503 | 29.0 | 7186 | 27.6 | 6240 | 21.8 | 6839 | 21.2 |
| -0.5-<0 | 10587 | 52.3 | 15210 | 62.1 | 16903 | 65.4 | 17406 | 66.9 | 21132 | 73.7 | 24202 | 75.1 |
| 0-<0.5 | 970 | 4.8 | 910 | 3.7 | 836 | 3.2 | 623 | 2.4 | 696 | 2.4 | 788 | 2.4 |
| 0.5-<1 | 177 | 0.9 | 235 | 1.0 | 232 | 0.9 | 215 | 0.8 | 187 | 0.7 | 69 | 0.2 |
| 1-<1.5 | 17 | 0.1 | 19 | 0.1 | 16 | 0.1 | 25 | 0.1 | 8 | 0 | 4 | 0 |
| 1.5-<2 | 20 | 0.1 | 16 | 0.1 | 8 | 0.0 | 49 | 0.2 | 28 | 0.1 | 3 | 0.0 |
| 2-<2.5 | 85 | 0.4 | 68 | 0.3 | 12 | 0.1 | 121 | 0.5 | 69 | 0.2 | 5 | 0.0 |
| 2.5-<3 | 4 | 0.0 | 3 | 0.0 | 2 | 0.0 | 8 | 0.0 | 11 | 0 | 1 | 0 |
| 3-<3.5 | 1 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 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-<4.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 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 |
| 5-<5.5 | 0 | 0.0 | 1 | 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-<6.5 | 0 | 0.0 | 1 | 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 |
| 7-<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 |
| 8-<8.5 | 0 | 0.0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 8.5-<9 | 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 |
| 9.5-10 | 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

The number of SDPs performing between >1000 cataract surgeries per year appeared to be increasing.

Table 1.3.1-1: Range of Cataract Surgery Registered by SDP per year, Census versus CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **No. of SDP** | | | | | | | | | | | | | | | | |
| **Census** | 33 | | 36 | | 36 | | 36 | | 36 | | 36 | | 41 | | 43 | |
| **CSR** | 36 | | 36 | | 36 | | 36 | | 36 | | 36 | | 41 | | 43 | |
| **Year** | **<100** | | | | **100-500** | | | | **501-1000** | | | | **>1000** | | | |
| | **Census** | | **CSR** | | **Census** | | **CSR** | | **Census** | | **CSR** | | **Census** | | **CSR** | |
| **2007** | 1 | | 1 | | 15 | | 10 | | 8 | | 14 | | 9 | | 11 | |
| **2008** | 1 | | 1 | | 10 | | 15 | | 14 | | 11 | | 11 | | 9 | |
| **2009** | 1 | | 1 | | 12 | | 12 | | 14 | | 12 | | 9 | | 8 | |
| **2010** | 1 | | 1 | | 10 | | 13 | | 14 | | 12 | | 11 | | 10 | |
| **2011** | 1 | | 1 | | 9 | | 9 | | 16 | | 16 | | 10 | | 10 | |
| **2012** | 1 | | 1 | | 8 | | 8 | | 15 | | 16 | | 12 | | 11 | |
| **2013** | 4 | | 4 | | 7 | | 9 | | 14 | | 13 | | 16 | | 15 | |
| **2014** | 2 | | 2 | | 8 | | 11 | | 15 | | 14 | | 18 | | 16 | |

Table 1.3.1-2: Number of Cataract Surgery by Month, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| **Month** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| January | 1579 | 8.6 | 1862 | 8.7 | 1668 | 6.8 | 2347 | 8.2 | 2241 | 7.3 | 2460 | 7.6 | 2844 | 7.7 | 3161 | 7.8 |
| February | 1290 | 7.0 | 1653 | 7.7 | 1884 | 7.7 | 1985 | 7.0 | 1815 | 5.9 | 2762 | 8.5 | 2448 | 6.6 | 3258 | 8.0 |
| March | 1782 | 9.7 | 1812 | 8.4 | 2122 | 8.7 | 2850 | 10.0 | 2676 | 8.7 | 3055 | 9.4 | 2997 | 8.1 | 3924 | 9.7 |
| April | 1625 | 8.8 | 2321 | 10.8 | 2295 | 9.4 | 2714 | 9.5 | 2634 | 8.6 | 2612 | 8.0 | 3378 | 9.1 | 3855 | 9.5 |
| May | 1618 | 8.8 | 1871 | 8.7 | 2036 | 8.3 | 2559 | 9.0 | 2576 | 8.4 | 3004 | 9.3 | 3233 | 8.7 | 3153 | 7.8 |
| June | 1476 | 8.0 | 1950 | 9.1 | 2086 | 8.5 | 2591 | 9.1 | 2686 | 8.8 | 2652 | 8.2 | 3119 | 8.4 | 3501 | 8.6 |
| July | 1808 | 9.8 | 2049 | 9.5 | 2322 | 9.5 | 2670 | 9.4 | 2845 | 9.3 | 3121 | 9.6 | 3557 | 9.6 | 3122 | 7.7 |
| August | 1814 | 9.8 | 1791 | 8.3 | 1975 | 8.1 | 2401 | 8.4 | 2570 | 8.4 | 2237 | 6.9 | 2591 | 7.0 | 3403 | 8.4 |
| September | 1486 | 8.1 | 1462 | 6.8 | 1572 | 6.4 | 1659 | 5.8 | 2468 | 8.1 | 2454 | 7.6 | 3372 | 9.1 | 3433 | 8.5 |
| October | 1376 | 7.5 | 1552 | 7.2 | 2266 | 9.3 | 2447 | 8.6 | 2794 | 9.1 | 3064 | 9.4 | 3421 | 9.2 | 3163 | 7.8 |
| November | 1443 | 7.8 | 1646 | 7.7 | 2006 | 8.2 | 2102 | 7.4 | 2632 | 8.6 | 2625 | 8.1 | 3162 | 8.5 | 3477 | 8.6 |
| December | 1129 | 6.1 | 1527 | 7.1 | 2206 | 9.0 | 2181 | 7.6 | 2674 | 8.7 | 2427 | 7.5 | 3028 | 8.2 | 3082 | 7.6 |

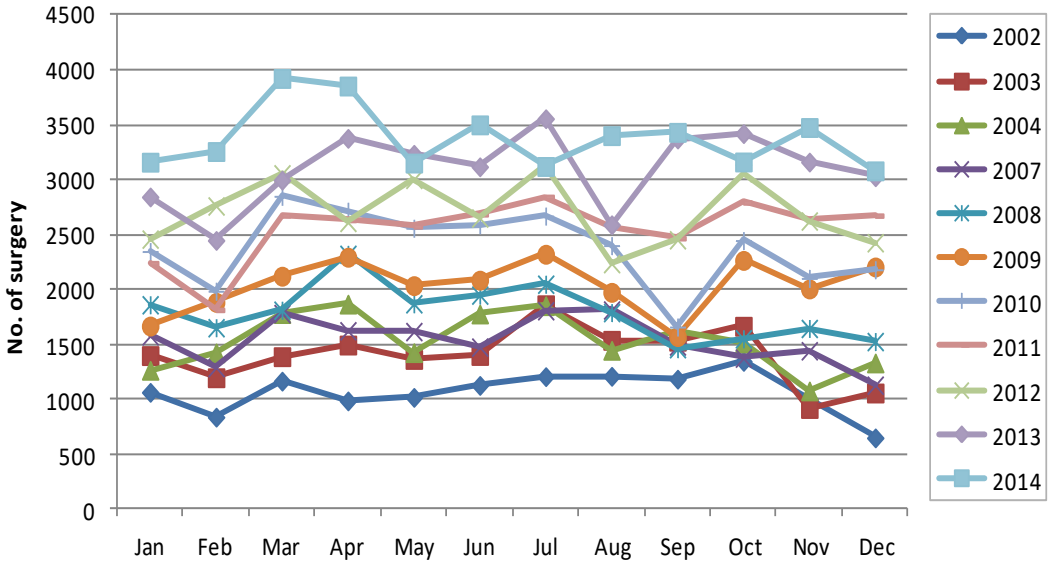



Figure 1.3.1-1: Number of Cataract Surgeries by Month, CSR 2002-2014

## 1.3.2 Number of Cataract Surgery Registered to CSR by State

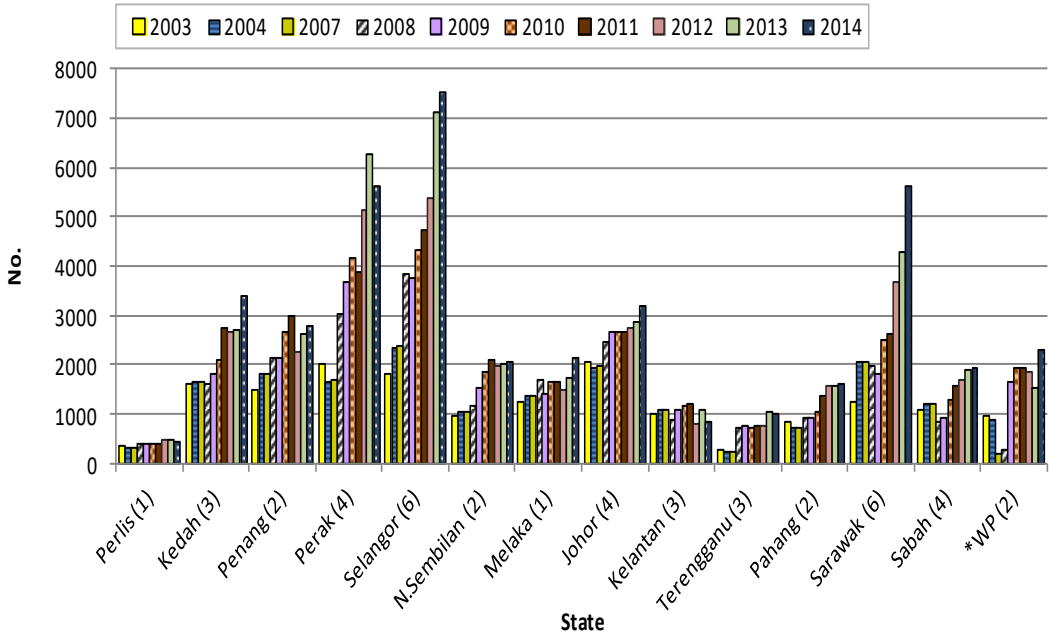



Figure 1.3.2-1: Number of Cataract Surgeries by State, CSR 2003-2014

**Wilayah Persekutuan in 2007 and 2008 for Putrajaya Hospital only*

## 1.3.3 Surgeon Status

Specialists performed the highest number of cataract surgery followed by the medical officers (MO) and the gazetting specialists. This trend remained unchanged throughout the years. The percentage of eyes operated by the specialists appeared to be increasing corresponding to the decrease in the percentage operated by the MOs.

Table 1.3.3-1: Surgeon Status, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Specialist | 14327 | 77.8 | 16846 | 78.4 | 19400 | 79.4 | 24216 | 84.9 | 25590 | 83.6 | 27684 | 85.3 | 32861 | 88.5 | 36197 | 89.3 |
| Gazetting Specialist | 1276 | 6.9 | 1399 | 6.5 | 2053 | 8.4 | 1405 | 4.9 | 2487 | 8.1 | 2411 | 7.4 | 2014 | 5.4 | 2034 | 5.02 |
| Medical Officer | 2690 | 14.6 | 2697 | 12.5 | 2750 | 11.3 | 2871 | 10.1 | 2478 | 8.1 | 2354 | 7.3 | 2244 | 6.0 | 2249 | 5.55 |
| Missing/NA | 133 | 1.0 | 554 | 2.6 | 235 | 1.0 | 14 | 0.1 | 56 | 0.2 | 24 | 0.1 | 31 | 0.1 | 52 | 0.13 |

Table 1.3.3-2: Surgeon Status for Phaco, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | 11960 | | 14781 | | 17717 | | 21810 | | 23872 | | 26345 | | 31625 | | 35429 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Specialist | 10294 | 86.1 | 12458 | 84.3 | 15206 | 85.8 | 19797 | 90.8 | 20963 | 87.8 | 23291 | 88.4 | 28774 | 91.0 | 32417 | 91.5 |
| Gazetting Specialist | 805 | 6.7 | 882 | 6.0 | 1422 | 8.0 | 929 | 4.3 | 1845 | 7.7 | 1850 | 7.0 | 1694 | 5.4 | 1776 | 5.0 |
| Medical Officer | 780 | 8.5 | 1064 | 7.2 | 923 | 5.2 | 1078 | 4.9 | 1050 | 4.4 | 1182 | 4.5 | 1132 | 3.6 | 1189 | 3.4 |
| Missing/NA | 81 | 0.7 | 377 | 2.6 | 166 | 0.9 | 6 | 0.0 | 14 | 0.1 | 22 | 0.1 | 25 | 0.1 | 47 | 0.1 |

Table 1.3.3-3: Surgeon Status for ECCE, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | 5524 | | 5627 | | 5457 | | 5363 | | 5291 | | 4784 | | 4086 | | 3613 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Specialist | 3240 | 58.7 | 3528 | 62.7 | 3133 | 57.4 | 3237 | 60.4 | 3406 | 64.4 | 3231 | 67.5 | 2794 | 68.4 | 2434 | 67.4 |
| Gazetting Specialist | 391 | 7.1 | 403 | 7.2 | 516 | 9.5 | 405 | 7.6 | 513 | 9.7 | 435 | 9.1 | 218 | 5.3 | 170 | 4.7 |
| Medical Officer | 1848 | 33.5 | 1555 | 27.6 | 1754 | 32.1 | 1718 | 32.0 | 1369 | 25.9 | 1116 | 23.3 | 1072 | 26.2 | 1007 | 27.9 |
| Missing/NA | 45 | 0.8 | 141 | 2.5 | 54 | 1.0 | 3 | 0.0 | 3 | 0.1 | 2 | 0.0 | 2 | 0.1 | 2 | 0.1 |

Table 1.3.3-4: Specialist by SDP, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 14327 | 77.8 | 16846 | 78.4 | 19400 | 79.4 | 24216 | 85.0 | 25590 | 83.6 | 27684 | 85.3 | 32861 | 88.5 | 36197 | 89.3 |
| Alor Setar | 334 | 81.3 | 765 | 77.6 | 846 | 76.2 | 1376 | 90.1 | 1742 | 89.8 | 1595 | 86.9 | 1429 | 81.3 | 1839 | 87.3 |
| Ampang | 4 | 100.0 | 200 | 96.2 | 421 | 97.2 | 491 | 78.3 | 620 | 87.6 | 809 | 90.3 | 813 | 82.7 | 722 | 76.3 |
| Batu Pahat | 511 | 91.9 | 500 | 87.3 | 336 | 55.8 | 290 | 70.6 | 410 | 74.0 | 262 | 43.1 | 405 | 93.5 | 467 | 100.0 |
| Bintulu | - | - | 25 | 83.3 | 101 | 81.5 | 219 | 84.9 | 330 | 99.4 | 389 | 99.5 | 375 | 97.9 | 374 | 100.0 |
| Bukit Mertajam | 620 | 91.0 | 434 | 89.1 | 715 | 96.2 | 782 | 97.3 | 744 | 92.7 | 879 | 94.7 | 853 | 93.8 | 967 | 96.9 |
| Sandakan | | | 100 | 73.0 | 72 | 45.6 | 123 | 59.1 | 98 | 36.2 | 128 | 48.3 | 404 | 98.3 | 235 | 99.2 |
| Ipoh | 1068 | 68.2 | 1392 | 80.8 | 1460 | 68.3 | 1859 | 84.5 | 1479 | 81.0 | 2459 | 83.9 | 2741 | 90.4 | 2614 | 94.7 |
| Kangar | 317 | 97.8 | 390 | 97.5 | 395 | 99.0 | 395 | 98.8 | 402 | 99.8 | 445 | 98.0 | 386 | 82.8 | 365 | 85.7 |
| Keningau | - | - | 34 | 100.0 | 31 | 100.0 | 16 | 21.1 | 32 | 61.5 | 5 | 29.4 | 6 | 40.0 | 22 | 16.5 |
| Kota Bharu | 680 | 83.5 | 583 | 78.9 | 804 | 88.3 | 858 | 89.4 | 862 | 91.1 | 485 | 89.0 | 625 | 91.6 | 279 | 97.9 |
| Kuala Krai | 99 | 79.2 | 168 | 98.8 | 169 | 96.6 | 211 | 97.2 | 230 | 95.8 | 226 | 91.5 | 397 | 100.0 | 354 | 97.0 |
| Kuala Lumpur | - | - | 28 | 70.0 | 871 | 62.0 | 1359 | 82.5 | 1265 | 78.0 | 1387 | 91.5 | 1090 | 94.8 | 1750 | 90.6 |
| Kuala Pilah | 180 | 84.1 | 225 | 79.8 | 257 | 88.6 | 310 | 96.3 | 465 | 96.3 | 424 | 98.8 | 425 | 86.4 | 461 | 93.5 |
| Kuala Terengganu | 371 | 70.4 | 611 | 84.2 | 665 | 89.5 | 612 | 85.7 | 629 | 81.7 | 700 | 91.5 | 890 | 87.8 | 712 | 79.1 |
| Melaka | 1112 | 72.8 | 1119 | 66.6 | 1098 | 79.2 | 1342 | 80.9 | 1367 | 83.3 | 1392 | 93.5 | 1550 | 90.2 | 1968 | 92.0 |
| Miri | 12 | 75.0 | 356 | 89.9 | 404 | 100.0 | 576 | 99.8 | 501 | 76.3 | 513 | 56.9 | 904 | 98.8 | 888 | 93.6 |
| Muar | 332 | 94.3 | 237 | 70.1 | 388 | 71.6 | 606 | 98.2 | 405 | 58.5 | 493 | 74.1 | 699 | 97.5 | 445 | 61.0 |
| Pulau Pinang | 754 | 68.2 | 1142 | 84.2 | 1024 | 74.5 | 1516 | 80.8 | 1816 | 83.1 | 1079 | 81.1 | 1320 | 77.8 | 1639 | 91.5 |
| Putrajaya | 196 | 96.6 | 254 | 99.2 | 251 | 100.0 | 282 | 100.0 | 329 | 100.0 | 349 | 98.3 | 386 | 98.7 | 360 | 98.1 |
| Kota Kinabalu | 423 | 79.4 | 265 | 75.5 | 344 | 79.4 | 552 | 88.5 | 540 | 78.7 | 551 | 72.2 | 658 | 67.3 | 737 | 70.9 |
| Selayang | 1221 | 86.2 | 1190 | 83.3 | 1164 | 82.1 | 1414 | 83.2 | 1523 | 81.9 | 1465 | 80.1 | 1088 | 81.4 | 730 | 81.2 |
| Serdang | 532 | 87.9 | 620 | 89.1 | 567 | 94.8 | 506 | 97.3 | 610 | 91.6 | 677 | 95.5 | 957 | 93.5 | 1233 | 97.5 |
| Sibu | 337 | 88.0 | 254 | 96.6 | 130 | 33.6 | 345 | 75.8 | 230 | 45.5 | 675 | 90.6 | 759 | 84.3 | 859 | 99.2 |
| Sri Manjung | 121 | 79.6 | 285 | 81.4 | 318 | 97.2 | 375 | 96.9 | 417 | 99.3 | 464 | 99.6 | 820 | 98.6 | 623 | 99.7 |
| Sultan Ismail | 101 | 94.4 | 180 | 100.0 | 183 | 98.9 | 203 | 78.7 | 283 | 100.0 | 279 | 100.0 | 353 | 94.4 | 609 | 100.0 |
| Johor Bahru | 1031 | 66.8 | 825 | 60.0 | 1079 | 81.9 | 1097 | 79.7 | 770 | 68.3 | 1079 | 90.3 | 1177 | 87.2 | 1362 | 98.6 |
| Sungai Buloh | 144 | 98.6 | 273 | 85.6 | 361 | 93.3 | 467 | 99.8 | 450 | 100.0 | 514 | 100.0 | 579 | 99.8 | 686 | 99.0 |
| Sungei Petani | 488 | 98.2 | 626 | 98.9 | 683 | 99.9 | 546 | 97.8 | 731 | 90.1 | 740 | 87.6 | 859 | 92.4 | 932 | 91.2 |
| Taiping | 279 | 100.0 | 378 | 99.7 | 610 | 99.7 | 683 | 76.8 | 853 | 89.5 | 899 | 80.4 | 1195 | 93.1 | 1231 | 99.8 |
| Tawau | 184 | 91.5 | 312 | 98.4 | 296 | 99.3 | 399 | 99.5 | 574 | 99.8 | 648 | 100.0 | 503 | 100.0 | 540 | 100.0 |
| Teluk Intan | 504 | 75.1 | 511 | 86.9 | 539 | 88.1 | 642 | 93.0 | 397 | 59.9 | 439 | 71.3 | 677 | 61.4 | 684 | 67.5 |
| Temerloh | 244 | 55.0 | 405 | 76.3 | 382 | 59.7 | 290 | 64.4 | 651 | 95.6 | 827 | 95.3 | 837 | 96.7 | 954 | 91.1 |
| Kuantan | 21 | 87.5 | 306 | 77.5 | 235 | 80.2 | 553 | 89.9 | 614 | 90.3 | 607 | 88.7 | 490 | 79.2 | 497 | 86.3 |
| Klang | 841 | 80.8 | 841 | 69.1 | 690 | 76.3 | 833 | 82.7 | 966 | 91.0 | 1317 | 93.3 | 1523 | 94.5 | 1363 | 93.3 |
| Seremban | 547 | 57.2 | 249 | 27.7 | 812 | 66.1 | 1147 | 75.5 | 1262 | 78.6 | 1109 | 71.1 | 1167 | 76.8 | 1078 | 68.0 |
| Kuching | 719 | 71.8 | 763 | 75.5 | 698 | 78.2 | 941 | 78.0 | 993 | 87.8 | 1375 | 83.0 | 1490 | 86.6 | 1514 | 73.2 |
| Kemaman | | | | | | | | | | | | | 47 | 100.0 | 72 | 100.0 |
| Sarikei | | | | | | | | | | | | | 285 | 99.7 | 554 | 99.8 |
| Kulim | | | | | | | | | | | | | - | - | 265 | 100.0 |
| KK1M Pahang | | | | | | | | | | | | | 59 | 92.2 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 33 | 86.8 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 185 | 99.5 |
| KK1M Sarawak | | | | | | | | | | | | | 76 | 100.0 | 798 | 96.0 |
| MAIWP | | | | | | | | | | | | | 1564 | 98.8 | 2197 | 97.0 |

Table 1.3.3-5: GazettingSpecialist by SDP, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 1276 | 6.9 | 1399 | 6.5 | 2053 | 8.4 | 1405 | 4.9 | 2487 | 8.1 | 2411 | 7.4 | 2014 | 5.4 | 2034 | 5.0 |
| Alor Setar | 0 | 0.0 | 74 | 7.5 | 30 | 2.7 | 7 | 0.5 | 3 | 0.2 | 131 | 7.1 | 165 | 9.4 | 96 | 4.6 |
| Ampang | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 0.6 | 6 | 0.8 | 18 | 2.0 | 7 | 0.7 | 0 | 0.0 |
| Batu Pahat | 0 | 0.0 | 60 | 10.5 | 197 | 32.7 | 75 | 18.2 | 135 | 24.4 | 329 | 54.1 | 26 | 6.0 | 0 | 0.0 |
| Bintulu | - | - | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 8 | 2.1 | 0 | 0.0 |
| Bukit Mertajam | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 | 0 | 0.0 | 40 | 5.0 | 33 | 3.6 | 13 | 1.4 | 0 | 0.0 |
| Sandakan | - | - | 1 | 0.7 | 1 | 0.6 | 0 | 0.0 | 55 | 20.3 | 17 | 6.4 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 10 | 0.6 | 0 | 0.0 | 118 | 5.5 | 0 | 0.0 | 63 | 3.5 | 230 | 7.8 | 156 | 5.1 | 43 | 1.6 |
| Kangar | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 66 | 14.2 | 14 | 3.3 |
| Keningau | - | - | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kota Bharu | 41 | 5.0 | 42 | 5.7 | 2 | 0.2 | 2 | 0.2 | 4 | 0.4 | 6 | 1.1 | 5 | 0.7 | 0 | 0.0 |
| Kuala Krai | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 10 | 4.2 | 21 | 8.5 | 0 | 0.0 | 0 | 0.0 |
| Kuala Lumpur | - | - | 8 | 20.0 | 368 | 26.2 | 15 | 0.9 | 86 | 5.3 | 20 | 1.3 | 15 | 1.3 | 62 | 3.2 |
| Kuala Pilah | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 53 | 10.8 | 30 | 6.1 |
| Kuala Terengganu | 97 | 18.4 | 35 | 4.8 | 9 | 1.2 | 28 | 3.9 | 93 | 12.1 | 8 | 1.0 | 50 | 4.9 | 133 | 14.8 |
| Melaka | 216 | 14.1 | 267 | 15.9 | 44 | 3.2 | 66 | 4.0 | 147 | 9.0 | 14 | 0.9 | 2 | 0.1 | 4 | 0.2 |
| Miri | 0 | 0.0 | 4 | 1.0 | 0 | 0.0 | 0 | 0.0 | 148 | 22.5 | 383 | 42.5 | 11 | 1.2 | 58 | 6.1 |
| Muar | 0 | 0.0 | 93 | 27.5 | 149 | 27.5 | 6 | 1.0 | 287 | 41.5 | 172 | 25.9 | 13 | 1.8 | 282 | 38.7 |
| Pulau Pinang | 141 | 12.8 | 26 | 1.9 | 226 | 16.4 | 220 | 11.7 | 186 | 8.5 | 30 | 2.3 | 63 | 3.7 | 22 | 1.2 |
| 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 |
| Kota Kinabalu | 0 | 0.0 | 9 | 2.6 | 44 | 10.2 | 42 | 6.7 | 92 | 13.4 | 152 | 19.9 | 173 | 17.7 | 202 | 19.4 |
| Selayang | 47 | 3.3 | 34 | 2.4 | 118 | 8.3 | 24 | 1.4 | 3 | 0.2 | 60 | 3.3 | 40 | 3.0 | 24 | 2.7 |
| Serdang | 35 | 5.8 | 58 | 8.3 | 29 | 4.8 | 6 | 1.2 | 33 | 5.0 | 16 | 2.3 | 31 | 3.0 | 3 | 0.2 |
| Sibu | 1 | 0.3 | 0 | 0.0 | 194 | 50.1 | 92 | 20.2 | 254 | 50.3 | 68 | 9.1 | 138 | 15.3 | 0 | 0.0 |
| Sri Manjung | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 | 7 | 0.8 | 0 | 0.0 |
| Sultan Ismail | 0 | 0.0 | 0 | 0.0 | 2 | 1.1 | 55 | 21.3 | 0 | 0.0 | 0 | 0.0 | 21 | 5.6 | 0 | 0.0 |
| Johor Bahru | 273 | 17.7 | 232 | 16.9 | 136 | 10.3 | 202 | 14.7 | 320 | 28.4 | 82 | 6.9 | 158 | 11.7 | 8 | 0.6 |
| Sungai Buloh | 0 | 0.0 | 46 | 14.4 | 9 | 2.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 |
| Sungei Petani | 6 | 1.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 47 | 5.8 | 3 | 0.4 | 0 | 0.0 | 0 | 0.0 |
| Taiping | 0 | 0.0 | 1 | 0.3 | 2 | 0.3 | 206 | 23.2 | 100 | 10.5 | 219 | 19.6 | 89 | 6.9 | 2 | 0.2 |
| Tawau | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Teluk Intan | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 0.6 | 221 | 33.3 | 133 | 21.6 | 362 | 32.8 | 282 | 27.8 |
| Temerloh | 115 | 25.9 | 64 | 12.1 | 139 | 21.7 | 99 | 22.0 | 0 | 0.0 | 25 | 2.9 | 16 | 1.8 | 82 | 7.8 |
| Kuantan | 0 | 0.0 | 27 | 6.8 | 17 | 5.8 | 1 | 0.2 | 1 | 0.1 | 0 | 0.0 | 38 | 6.1 | 12 | 2.1 |
| Klang | 104 | 10.0 | 194 | 15.9 | 142 | 15.7 | 109 | 10.8 | 92 | 8.7 | 94 | 6.7 | 68 | 4.2 | 79 | 5.4 |
| Seremban | 43 | 4.5 | 28 | 3.1 | 18 | 1.5 | 46 | 3.0 | 6 | 0.4 | 4 | 0.3 | 32 | 2.1 | 74 | 4.7 |
| Kuching | 147 | 14.7 | 96 | 9.5 | 56 | 6.3 | 96 | 8.0 | 54 | 4.8 | 141 | 8.5 | 175 | 10.2 | 483 | 23.4 |
| Kemaman | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| Sarikei | | | | | | | | | | | | | 1 | 0.3 | 0 | 0.0 |
| Kulim | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Pahang | | | | | | | | | | | | | 5 | 7.8 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 3 | 7.9 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Sarawak | | | | | | | | | | | | | 0 | 0.0 | 32 | 3.9 |
| MAIWP | | | | | | | | | | | | | 7 | 0.4 | 2 | 0.1 |

Table 1.3.3-6: Medical Officer by SDP, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 2690 | 14.6 | 2697 | 12.5 | 2750 | 11.3 | 2871 | 10.1 | 2478 | 8.1 | 2354 | 7.2 | 2244 | 6.0 | 2249 | 5.5 |
| Alor Setar | 76 | 18.5 | 146 | 14.8 | 234 | 21.1 | 144 | 9.4 | 194 | 10.0 | 109 | 5.9 | 164 | 9.3 | 169 | 8.0 |
| Ampang | 0 | 0.0 | 2 | 1.0 | 12 | 2.8 | 132 | 21.1 | 82 | 11.6 | 69 | 7.7 | 163 | 16.6 | 224 | 23.7 |
| Batu Pahat | 45 | 8.1 | 13 | 2.3 | 69 | 11.5 | 46 | 11.2 | 9 | 1.6 | 17 | 2.8 | 2 | 0.5 | 0 | 0.0 |
| Bintulu | - | - | 5 | 16.7 | 23 | 18.5 | 39 | 15.1 | 2 | 0.6 | 2 | 0.5 | 0 | 0.0 | 0 | 0.0 |
| Bukit Mertajam | 59 | 8.7 | 53 | 10.9 | 26 | 3.5 | 22 | 2.7 | 19 | 2.4 | 16 | 1.7 | 43 | 4.7 | 31 | 3.1 |
| Sandakan | | | 35 | 25.5 | 85 | 53.8 | 85 | 40.9 | 118 | 43.5 | 120 | 45.3 | 7 | 1.7 | 2 | 0.8 |
| Ipoh | 441 | 28.2 | 291 | 16.9 | 335 | 15.7 | 330 | 15.0 | 230 | 12.6 | 220 | 7.5 | 114 | 3.8 | 102 | 3.7 |
| Kangar | 5 | 1.5 | 6 | 1.5 | 3 | 0.8 | 5 | 1.3 | 0 | 0.0 | 9 | 2.0 | 14 | 3.0 | 47 | 11.0 |
| Keningau | - | - | 0 | 0.0 | 0 | 0.0 | 60 | 78.9 | 20 | 38.5 | 12 | 70.6 | 9 | 60.0 | 111 | 83.5 |
| Kota Bharu | 91 | 11.2 | 114 | 15.4 | 105 | 11.5 | 100 | 10.4 | 80 | 8.5 | 54 | 9.9 | 52 | 7.6 | 6 | 2.1 |
| Kuala Krai | 26 | 20.8 | 2 | 1.2 | 6 | 3.4 | 6 | 2.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 11 | 3.0 |
| Kuala Lumpur | - | - | 3 | 7.5 | 166 | 11.8 | 274 | 16.6 | 271 | 16.7 | 108 | 7.1 | 44 | 3.8 | 120 | 6.2 |
| Kuala Pilah | 31 | 14.5 | 57 | 20.2 | 33 | 11.4 | 12 | 3.7 | 18 | 3.7 | 5 | 1.2 | 14 | 2.8 | 2 | 0.4 |
| Kuala Terengganu | 59 | 11.2 | 78 | 10.7 | 69 | 9.3 | 74 | 10.4 | 48 | 6.2 | 57 | 7.5 | 74 | 7.3 | 55 | 6.1 |
| Melaka | 198 | 13.0 | 285 | 17.0 | 244 | 17.6 | 250 | 15.1 | 128 | 7.8 | 82 | 5.5 | 167 | 9.7 | 166 | 7.8 |
| Miri | 4 | 25.0 | 36 | 9.1 | 0 | 0.0 | 1 | 0.2 | 8 | 1.2 | 5 | 0.6 | 0 | 0.0 | 3 | 0.3 |
| Muar | 17 | 4.8 | 8 | 2.4 | 5 | 0.9 | 5 | 0.8 | 0 | 0.0 | 0 | 0.0 | 5 | 0.7 | 2 | 0.3 |
| Pulau Pinang | 208 | 18.8 | 188 | 13.9 | 124 | 9.0 | 140 | 7.5 | 184 | 8.4 | 221 | 16.6 | 312 | 18.4 | 130 | 7.3 |
| Putrajaya | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 6 | 1.7 | 5 | 1.3 | 7 | 1.9 |
| Kota Kinabalu | 104 | 19.5 | 76 | 21.7 | 45 | 10.4 | 30 | 4.8 | 54 | 7.9 | 60 | 7.9 | 147 | 15.0 | 100 | 9.6 |
| Selayang | 139 | 9.8 | 199 | 13.9 | 136 | 9.6 | 261 | 15.4 | 333 | 17.9 | 304 | 16.6 | 209 | 15.6 | 145 | 16.1 |
| Serdang | 38 | 6.3 | 18 | 2.6 | 2 | 0.3 | 8 | 1.5 | 23 | 3.5 | 16 | 2.3 | 35 | 3.4 | 28 | 2.2 |
| Sibu | 44 | 11.5 | 9 | 3.4 | 63 | 16.3 | 18 | 4.0 | 21 | 4.2 | 2 | 0.3 | 3 | 0.3 | 7 | 0.8 |
| Sri Manjung | 24 | 15.8 | 64 | 18.3 | 9 | 2.8 | 12 | 3.1 | 3 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sultan Ismail | 5 | 4.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Johor Bahru | 234 | 15.2 | 313 | 22.7 | 102 | 7.7 | 77 | 5.6 | 37 | 3.3 | 34 | 2.8 | 15 | 1.1 | 11 | 0.8 |
| Sungai Buloh | 0 | 0.0 | 0 | 0.0 | 17 | 4.4 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 5 | 0.7 |
| Sungei Petani | 2 | 0.4 | 0 | 0.0 | 1 | 0.1 | 12 | 2.2 | 33 | 4.1 | 102 | 12.1 | 71 | 7.6 | 90 | 8.8 |
| 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 |
| Tawau | 16 | 8.0 | 5 | 1.6 | 2 | 0.7 | 2 | 0.5 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Teluk Intan | 166 | 24.7 | 77 | 13.1 | 73 | 11.9 | 44 | 6.4 | 45 | 6.8 | 44 | 7.1 | 62 | 5.6 | 46 | 4.5 |
| Temerloh | 81 | 18.2 | 60 | 11.3 | 119 | 18.6 | 61 | 13.6 | 30 | 4.4 | 16 | 1.8 | 13 | 1.5 | 11 | 1.1 |
| Kuantan | 3 | 12.5 | 62 | 15.7 | 41 | 14.0 | 61 | 9.9 | 65 | 9.6 | 77 | 11.3 | 90 | 14.5 | 67 | 11.6 |
| Klang | 89 | 8.5 | 179 | 14.7 | 70 | 7.7 | 63 | 6.3 | 1 | 0.1 | 0 | 0.0 | 20 | 1.2 | 19 | 1.3 |
| Seremban | 351 | 36.7 | 163 | 18.2 | 392 | 31.9 | 326 | 21.5 | 337 | 21.0 | 446 | 28.6 | 321 | 21.1 | 433 | 27.3 |
| Kuching | 134 | 13.4 | 150 | 14.8 | 139 | 15.6 | 170 | 14.1 | 84 | 7.4 | 141 | 8.5 | 56 | 3.3 | 71 | 3.4 |
| Kemaman | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| Sarikei | | | | | | | | | | | | | 0 | 0.0 | 1 | 0.2 |
| Kulim | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Pahang | | | | | | | | | | | | | 0 | 0.0 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 2 | 5.3 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 1 | 0.5 |
| KK1M Sarawak | | | | | | | | | | | | | 0 | 0.0 | 1 | 0.1 |
| MAIWP | | | | | | | | | | | | | 12 | 0.8 | 23 | 1.0 |

### 1.3.4 Duration of Surgery

Table 1.3.4-1: Duration of Surgery by Types of Cataract Surgery, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009* | | 2010* | | 2011* | | 2012* | | 2013* | | 2014* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Median | IQR | Median | IQR | Median | IQR | Median | IQR |
| All eyes | 40.2 | 20.6 | 38.2 | 19.6 | 38.2 | 20.4 | 35.5 | 19.3 | 30 | 20-40 | 30 | 20-40 | 27 | 20-38 | 26 | 20-36 |
| Phaco | 36.8 | 19.7 | 34.1 | 17.7 | 33.6 | 17.7 | 31.3 | 16.4 | 26 | 20-35 | 25 | 19-33 | 25 | 20-33 | 25 | 20-32 |
| ECCE | 45.3 | 19.7 | 45.8 | 19.5 | 49.1 | 20.9 | 47.4 | 20.2 | 43 | 31-60 | 40 | 30-55 | 45 | 33-60 | 45 | 35-61 |
| Phaco → ECCE | 57.8 | 20.6 | 44.8 | 24 | 59.7 | 24.2 | 56.1 | 21.7 | 55 | 40-70 | 55 | 40-70 | 55 | 41-67 | 55 | 43-70 |
| ICCE | 57.6 | 23.7 | 57.5 | 23.7 | 58.1 | 24.4 | 57.6 | 28.3 | 55 | 45-71 | 55 | 40-71 | 52 | 35-69 | 53 | 42-70 |
| Lens Aspiration | 47.8 | 27.2 | 60.0 | 25.6 | 46.1 | 25.9 | 45.4 | 28.9 | 40 | 30-60 | 35 | 25-56 | 31 | 23-50 | 35 | 25-51 |

*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 2007-2014

| Year | | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Median | IQR | Median | IQR | Median | IQR | Median | IQR |
| Phaco | Specialist | 36 | 19.8 | 35.4 | 17.9 | 32.6 | 17.3 | 30.7 | 16.3 | 25 | 20-35 | 25 | 20-34 | 25 | 20-31 | 25 | 20-30 |
| | Gazetting Specialist | 40.2 | 18 | 47.5 | 20.8 | 39.8 | 19.9 | 36.2 | 15.8 | 30 | 24-40 | 28 | 21-37 | 30 | 23-40 | 30 | 25-40 |
| | Medical Officers | 42.2 | 18.2 | 49.2 | 22.8 | 41.5 | 17.7 | 38.2 | 16.6 | 30 | 25-44 | 34 | 25-45 | 32 | 25-44 | 30 | 25-40 |
| ECCE | Specialist | 40.2 | 17.6 | 43.9 | 69.5 | 42.6 | 18 | 42 | 17.3 | 36 | 30-50 | 35 | 30-48 | 40 | 30-53 | 40 | 30-55 |
| | Gazetting Specialist | 45.9 | 17.8 | 54 | 71.5 | 48.4 | 19.1 | 48.6 | 16.1 | 46 | 39-60 | 45 | 35-55 | 50 | 40-60 | 54 | 45-70 |
| | Medical Officers | 53.9 | 20.2 | 63 | 89.8 | 60.5 | 21.4 | 57.4 | 22 | 55 | 45-70 | 57 | 45-66 | 60 | 50-72 | 60 | 50-75 |

### 1.3.5 Distribution of Cataract Surgery Performed as Day Care

The day care cataract surgery percentages were calculated by excluding eyes of children and combined surgeries because surgeries done in these eyes might require general anaesthesia therefore hospital admission.

The total number of eyes (excluding children and combined surgeries) and the total number of eyes operated as day care were increasing corresponding to the increasing numbers of cataract surgery registered to CSR. Although the percentage appeared to be increasing over the years, it varied between SDPs.

Table 1.3.5-1: Distribution of Cataract Surgery Performed as Day Care, CSR 2007-2014

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Number of SDPs | 32 | 36 | 36 | 36 | 36 | 36 | 41 | 43 |
| Total number of cataract surgery registered to CSR | 18426 | 21496 | 24438 | 28506 | 30611 | 32473 | 37150 | 40532 |
| Number of surgery excluding children and combined surgery | 17402 | 19835 | 22517 | 26514 | 28398 | 30144 | 32833 | 37999 |
| | n % | n % | n % | n % | n % | n % | n % | n % |
| Number and % of day care surgery excluding children and combined surgery | 7297 41.9 | 8449 42.6 | 10633 47.2 | 13657 51.5 | 14842 52.3 | 17827 59.1 | 20495 62.4 | 25342 66.7 |

***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 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 7297 | 41.9 | 8449 | 42.6 | 10633 | 47.2 | 13657 | 51.5 | 14842 | 52.3 | 17827 | 59.1 | 20495 | 62.4 | 25342 | 66.7 |
| Alor Setar | 91 | 27.6 | 74 | 8.0 | 3 | 0.3 | 186 | 13.8 | 206 | 11.9 | 265 | 16.1 | 330 | 21.4 | 613 | 33.4 |
| Ampang | 3 | 100.0 | 181 | 99.5 | 412 | 97.4 | 574 | 93.6 | 685 | 98.8 | 832 | 96.4 | 886 | 92.3 | 824 | 91.0 |
| Batu Pahat | 317 | 62.2 | 311 | 56.9 | 303 | 52.0 | 246 | 61.3 | 353 | 65.2 | 367 | 61.2 | 248 | 58.6 | 248 | 54.0 |
| Bintulu | 0 | 0.0 | 2 | 7.7 | 1 | 0.9 | 9 | 3.8 | 18 | 6.1 | 206 | 60.4 | 225 | 71.0 | 204 | 65.2 |
| Bukit Mertajam | 82 | 12.4 | 25 | 5.5 | 650 | 88.8 | 714 | 90.8 | 719 | 93.5 | 846 | 94.3 | 840 | 96.2 | 906 | 95.3 |
| Sandakan | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 92 | 35.7 | 343 | 88.2 | 177 | 95.2 |
| Ipoh | 672 | 48.2 | 896 | 58.1 | 1267 | 66.0 | 1487 | 75.4 | 1104 | 71.5 | 1894 | 78.5 | 2284 | 92.2 | 2058 | 86.6 |
| Kangar | 1 | 0.3 | 2 | 0.5 | 3 | 0.8 | 3 | 0.8 | 5 | 1.3 | 7 | 1.6 | 3 | 0.7 | 3 | 0.7 |
| Keningau | 0 | 0.0 | 1 | 3.5 | 3 | 10.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kota Bharu | 8 | 1.1 | 17 | 2.5 | 124 | 14.8 | 294 | 33.5 | 220 | 24.9 | 102 | 20.5 | 70 | 11.4 | 18 | 6.6 |
| Kuala Krai | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 1.0 | 75 | 33.3 | 133 | 61.6 | 295 | 79.1 | 306 | 89.0 |
| Kuala Lumpur | 0 | 0.0 | 35 | 92.1 | 725 | 53.3 | 684 | 42.4 | 486 | 30.3 | 351 | 24.8 | 46 | 4.5 | 426 | 25.3 |
| Kuala Pilah | 61 | 29.0 | 49 | 19.0 | 10 | 5.1 | 14 | 4.6 | 17 | 4.0 | 87 | 22.1 | 252 | 54.4 | 153 | 33.2 |
| Kuala Terengganu | 142 | 29.5 | 194 | 28.0 | 168 | 24.3 | 222 | 34.2 | 334 | 47.0 | 356 | 50.6 | 488 | 51.0 | 449 | 55.1 |
| Melaka | 1420 | 98.2 | 1483 | 95.9 | 1121 | 89.3 | 1425 | 90.2 | 1530 | 95.7 | 1384 | 95.5 | 1504 | 91.9 | 1983 | 96.7 |
| Miri | 15 | 100.0 | 385 | 99.7 | 397 | 99.7 | 568 | 99.3 | 640 | 100.0 | 868 | 99.9 | 910 | 100.0 | 939 | 100.0 |
| Muar | 2 | 0.6 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 1 | 0.1 | 22 | 3.3 | 4 | 0.6 | 8 | 1.1 |
| Pulau Pinang | 960 | 93.5 | 1193 | 91.9 | 1232 | 92.0 | 1682 | 94.8 | 1946 | 97.1 | 1262 | 96.8 | 1606 | 97.7 | 1599 | 97.7 |
| Putrajaya | 182 | 95.3 | 201 | 81.7 | 191 | 76.7 | 254 | 90.7 | 299 | 92.3 | 335 | 96.3 | 367 | 94.1 | 331 | 90.9 |
| Kota Kinabalu | 326 | 67.2 | 212 | 64.8 | 384 | 97.0 | 500 | 98.4 | 640 | 97.3 | 703 | 97.4 | 918 | 96.0 | 901 | 90.6 |
| Selayang | 1011 | 90.7 | 995 | 78.8 | 1026 | 86.8 | 1219 | 87.0 | 1305 | 91.1 | 1388 | 90.4 | 1088 | 93.5 | 760 | 94.1 |
| Serdang | 313 | 55.0 | 382 | 57.4 | 388 | 67.2 | 310 | 60.5 | 291 | 46.5 | 434 | 62.7 | 415 | 42.7 | 652 | 53.7 |
| Sibu | 0 | 0.0 | 1 | 0.4 | 1 | 0.3 | 2 | 0.4 | 3 | 0.6 | 394 | 59.7 | 630 | 76.1 | 790 | 93.9 |
| Sri Manjung | 10 | 7.0 | 45 | 13.1 | 83 | 25.9 | 194 | 51.2 | 224 | 53.8 | 304 | 66.7 | 556 | 70.7 | 385 | 66.5 |
| Sultan Ismail | 1 | 1.0 | 8 | 4.6 | 1 | 0.5 | 1 | 0.4 | 2 | 0.7 | 1 | 0.4 | 0 | 0.0 | 21 | 3.5 |
| Johor Bahru | 48 | 3.2 | 44 | 3.3 | 42 | 3.5 | 45 | 3.7 | 14 | 1.4 | 26 | 2.5 | 75 | 6.0 | 529 | 40.3 |
| Sungai Buloh | 99 | 78.0 | 230 | 74.4 | 312 | 81.0 | 392 | 85.4 | 377 | 85.9 | 422 | 82.9 | 376 | 65.7 | 442 | 74.9 |
| Sungei Petani | 5 | 1.0 | 2 | 0.4 | 3 | 0.5 | 59 | 11.0 | 377 | 47.3 | 291 | 35.7 | 366 | 41.2 | 297 | 30.6 |
| Taiping | 54 | 20.5 | 46 | 12.7 | 95 | 16.4 | 117 | 13.9 | 130 | 14.3 | 516 | 48.5 | 621 | 50.1 | 689 | 57.4 |
| Tawau | 1 | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 | 1 | 0.2 |
| Teluk Intan | 2 | 0.3 | 66 | 11.5 | 1 | 0.2 | 1 | 0.1 | 5 | 0.8 | 3 | 0.5 | 6 | 0.9 | 4 | 0.4 |
| Temerloh | 1 | 0.2 | 5 | 1.0 | 2 | 0.3 | 1 | 0.2 | 151 | 22.3 | 438 | 52.4 | 456 | 53.3 | 567 | 54.8 |
| Kuantan | 7 | 30.4 | 50 | 14.8 | 20 | 7.9 | 28 | 5.1 | 38 | 5.9 | 168 | 26.5 | 280 | 48.6 | 352 | 63.4 |
| Klang | 11 | 1.1 | 22 | 1.9 | 65 | 7.5 | 87 | 9.6 | 159 | 17.9 | 373 | 28.2 | 631 | 41.1 | 547 | 40.0 |
| Seremban | 589 | 70.3 | 399 | 69.3 | 789 | 85.3 | 1241 | 89.4 | 1433 | 93.7 | 1410 | 96.4 | 1405 | 96.8 | 1442 | 96.1 |
| Kuching | 863 | 91.0 | 893 | 93.6 | 809 | 95.2 | 1096 | 95.0 | 1055 | 97.1 | 1547 | 97.7 | 1575 | 97.9 | 1838 | 95.5 |
| Kemaman | | | | | | | | | | | | | 44 | 100.0 | 69 | 97.2 |
| Sarikei | | | | | | | | | | | | | 274 | 96.1 | 536 | 96.9 |
| Kulim | | | | | | | | | | | | | - | - | 11 | 4.4 |
| KK1M Pahang | | | | | | | | | | | | | 2 | 3.2 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 5 | 15.2 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 184 | 99.5 |
| KK1M Sarawak | | | | | | | | | | | | | 74 | 98.7 | 811 | 99.8 |
| MAIWP | | | | | | | | | | | | | 0 | 0.0 | 2264 | 100.0 |

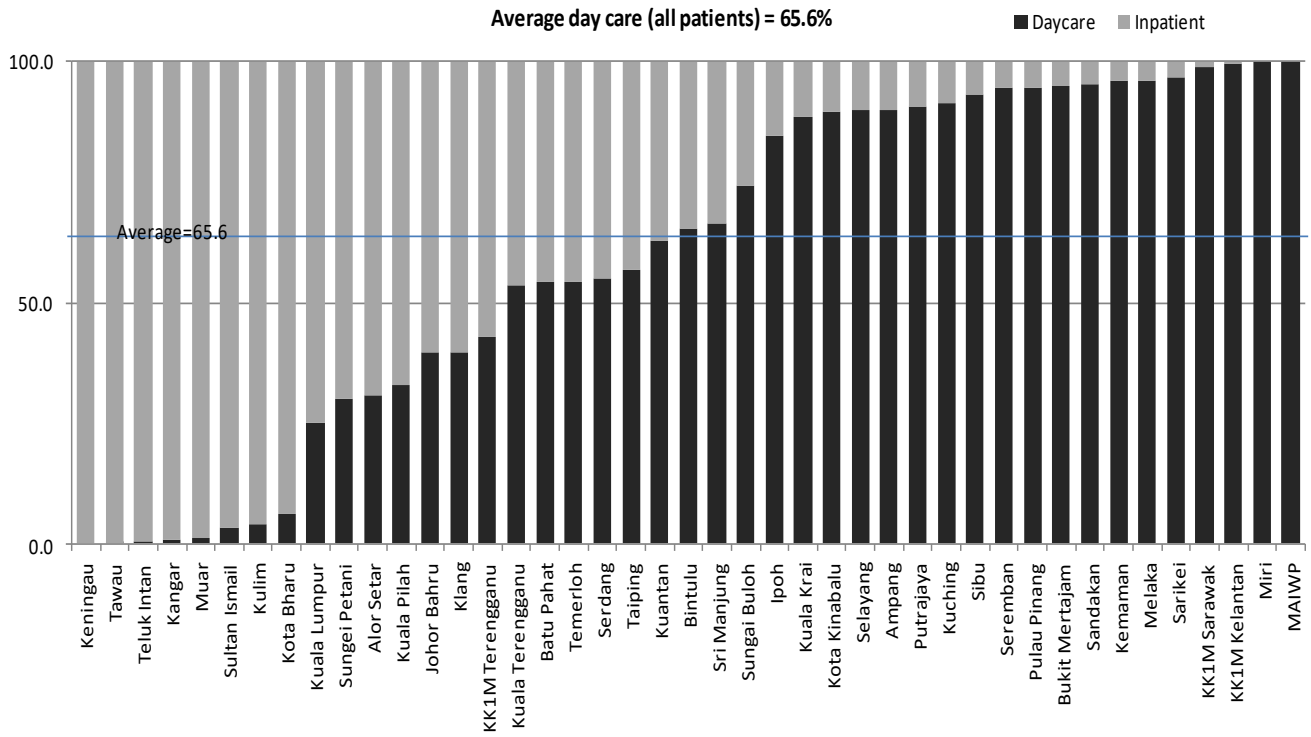



Figure 1.3.5-1: Distribution of Cataract Surgery Performed by SDP (Day Care VS In Patient, Excluding Surgery Done in Children and Combined Surgery), CSR 2014

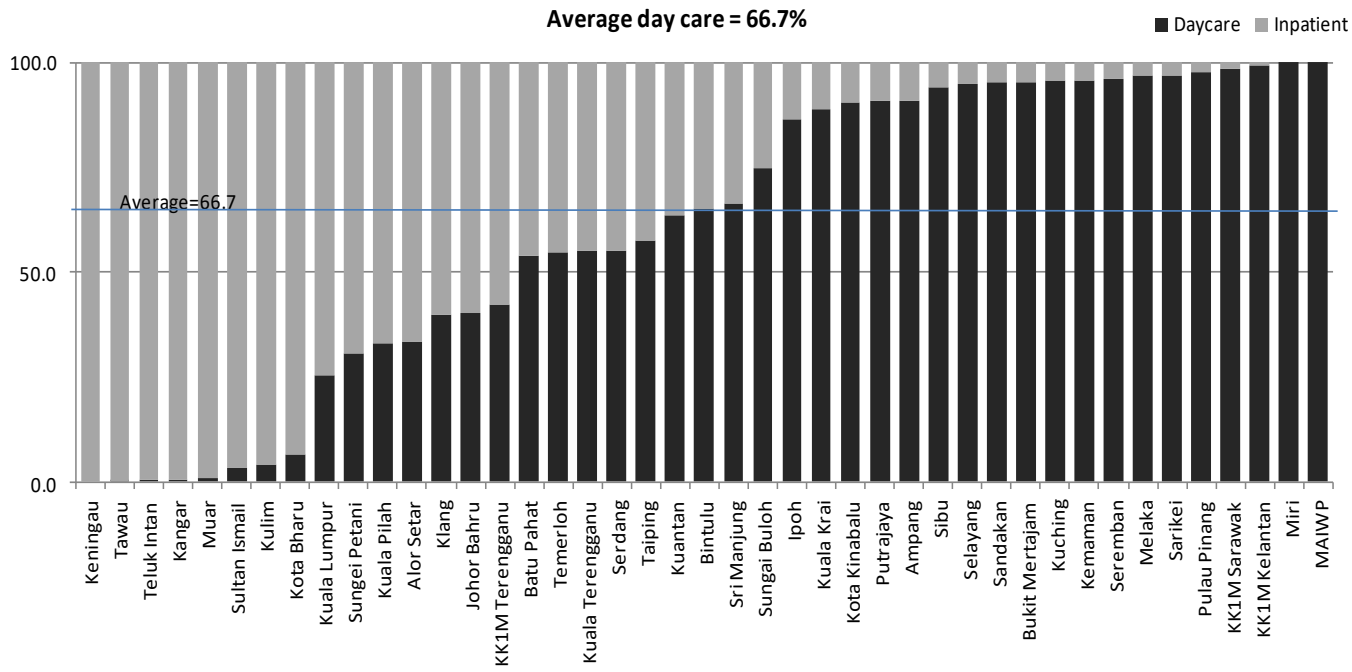



Figure 1.3.5-2: Distribution of Cataract Surgery Performed as Day Care by SDP (Excluding Surgery Done in Children and Combined Surgery), CSR 2002-2014

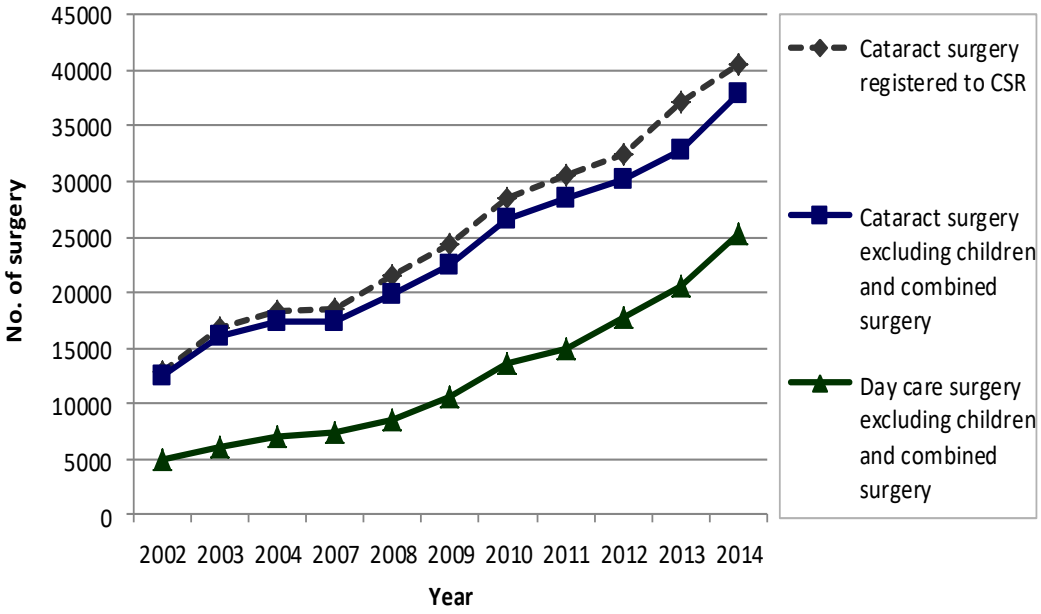



Figure 1.3.5-3: Distribution of Cataract Surgery by SDP (Day Care VS In Patient), CSR 2014

### 1.3.6 Distribution of Types of Cataract Surgery

There is a shift from ECCE to phaco as the preferred method of performing cataract surgery. The percentage of phaco converted to ECCE, the proxy indicator for competency in performing phaco surgery, remained the same over the years.

Table 1.3.5-3: Distribution of Types Cataract Surgery, CSR 2007-2014

| Year | 2007 | | 2008* | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Phaco | 11960 | 65.1 | 14781 | 69.1 | 17717 | 72.5 | 21810 | 76.5 | 23872 | 78 | 26345 | 81.1 | 31625 | 85.1 | 35429 | 87.4 |
| ECCE | 5524 | 30.1 | 5627 | 26.3 | 5457 | 22.3 | 5363 | 18.8 | 5291 | 17.3 | 4784 | 14.7 | 4086 | 11.0 | 3613 | 8.9 |
| Lens Aspiration | 323 | 1.8 | 340 | 1.6 | 400 | 1.6 | 451 | 1.6 | 460 | 1.5 | 444 | 1.4 | 364 | 1.0 | 370 | 0.9 |
| Phaco converted to ECCE | 432 | 2.4 | 524 | 2.4 | 573 | 2.3 | 586 | 2.1 | 652 | 2.1 | 621 | 1.9 | 769 | 2.1 | 805 | 2.0 |
| ICCE | 141 | 0.8 | 129 | 0.6 | 134 | 0.5 | 143 | 0.5 | 123 | 0.4 | 136 | 0.4 | 173 | 0.5 | 176 | 0.4 |

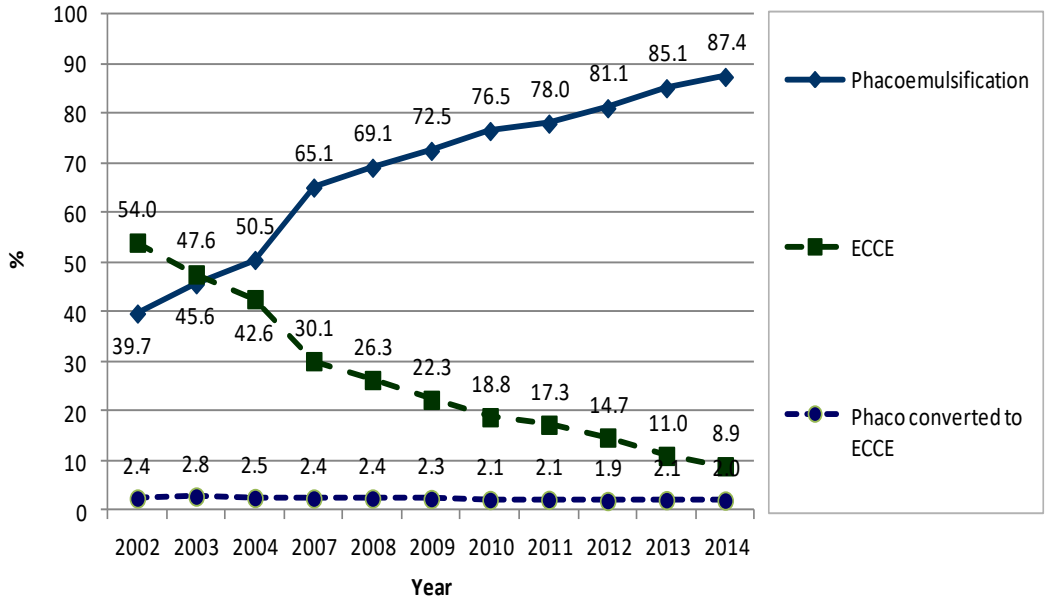



Figure 1.3.5-4: Distribution of Phaco, ECCE and Phaco Converted to ECCE, CSR 2002-2014

Table 1.3.5-4: Distribution of Types Cataract Surgery by SDP, CSR 2007-2014

| | Type of Cataract Surgery | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | Phaco | | ECCE | | Lens Aspiration | | Phaco Converted to ECCE | | ICCE | |
| | **N** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 40532 | 100.0 | 35429 | 87.4 | 3613 | 8.9 | 370 | 0.9 | 805 | 2.0 | 176 | 0.4 |
| Alor Setar | 2,106 | 100.0 | 1,687 | 80.1 | 343 | 16.3 | 29 | 1.4 | 24 | 1.1 | 4 | 0.2 |
| Ampang | 946 | 100.0 | 809 | 85.5 | 105 | 11.1 | 7 | 0.7 | 20 | 2.1 | 1 | 0.1 |
| Batu Pahat | 467 | 100.0 | 341 | 73.0 | 80 | 17.1 | 5 | 1.1 | 38 | 8.1 | 3 | 0.6 |
| Bintulu | 374 | 100.0 | 353 | 94.4 | 6 | 1.6 | 1 | 0.3 | 12 | 3.2 | 0 | 0.0 |
| Bukit Mertajam | 998 | 100.0 | 749 | 75.1 | 237 | 23.7 | 3 | 0.3 | 7 | 0.7 | 1 | 0.1 |
| Sandakan | 237 | 100.0 | 206 | 86.9 | 29 | 12.2 | 2 | 0.8 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 2,759 | 100.0 | 2,566 | 93.0 | 126 | 4.6 | 8 | 0.3 | 40 | 1.4 | 6 | 0.2 |
| Kangar | 426 | 100.0 | 356 | 83.6 | 50 | 11.7 | 8 | 1.9 | 6 | 1.4 | 6 | 1.4 |
| Keningau | 133 | 100.0 | 96 | 72.2 | 33 | 24.8 | 1 | 0.8 | 3 | 2.3 | 0 | 0.0 |
| Kota Bharu | 285 | 100.0 | 162 | 56.8 | 106 | 37.2 | 7 | 2.5 | 8 | 2.8 | 2 | 0.7 |
| Kuala Krai | 365 | 100.0 | 292 | 80.0 | 51 | 14.0 | 4 | 1.1 | 13 | 3.6 | 5 | 1.4 |
| Kuala Lumpur | 1,932 | 100.0 | 1,576 | 81.6 | 289 | 15.0 | 18 | 0.9 | 32 | 1.7 | 1 | 0.1 |
| Kuala Pilah | 493 | 100.0 | 430 | 87.2 | 32 | 6.5 | 6 | 1.2 | 21 | 4.3 | 4 | 0.8 |
| Kuala Terengganu | 900 | 100.0 | 707 | 78.6 | 150 | 16.7 | 18 | 2.0 | 17 | 1.9 | 6 | 0.7 |
| Melaka | 2,139 | 100.0 | 1,919 | 89.7 | 147 | 6.9 | 21 | 1.0 | 35 | 1.6 | 13 | 0.6 |
| Miri | 949 | 100.0 | 893 | 94.1 | 38 | 4.0 | 3 | 0.3 | 7 | 0.7 | 7 | 0.7 |
| Muar | 729 | 100.0 | 628 | 86.1 | 56 | 7.7 | 7 | 1.0 | 26 | 3.6 | 11 | 1.5 |
| Pulau Pinang | 1,791 | 100.0 | 1,712 | 95.6 | 29 | 1.6 | 13 | 0.7 | 24 | 1.3 | 7 | 0.4 |
| Putrajaya | 367 | 100.0 | 289 | 78.7 | 46 | 12.5 | 8 | 2.2 | 21 | 5.7 | 3 | 0.8 |
| Kota Kinabalu | 1040 | 100.0 | 847 | 81.4 | 131 | 12.6 | 16 | 1.5 | 22 | 2.1 | 10 | 1.0 |
| Selayang | 899 | 100.0 | 809 | 90.0 | 34 | 3.8 | 19 | 2.1 | 20 | 2.2 | 4 | 0.4 |
| Serdang | 1265 | 100.0 | 1072 | 84.7 | 122 | 9.6 | 24 | 1.9 | 42 | 3.3 | 3 | 0.2 |
| Sibu | 866 | 100.0 | 826 | 95.4 | 12 | 1.4 | 3 | 0.3 | 8 | 0.9 | 12 | 1.4 |
| Sri Manjung | 625 | 100.0 | 608 | 97.3 | 11 | 1.8 | 2 | 0.3 | 1 | 0.2 | 0 | 0.0 |
| Sultan Ismail | 609 | 100.0 | 496 | 81.4 | 70 | 11.5 | 13 | 2.1 | 29 | 4.8 | 1 | 0.2 |

| Type of Cataract Surgery | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | Phaco | | ECCE | | Lens Aspiration | | Phaco Converted to ECCE | | ICCE | |
| Johor Bahru | 1,381 | 100.0 | 1,303 | 94.4 | 26 | 1.9 | 13 | 0.9 | 26 | 1.9 | 9 | 0.7 |
| Sungai Buloh | 693 | 100.0 | 599 | 86.4 | 58 | 8.4 | 7 | 1.0 | 29 | 4.2 | 0 | 0.0 |
| Sungei Petani | 1022 | 100.0 | 743 | 72.7 | 191 | 18.7 | 36 | 3.5 | 43 | 4.2 | 7 | 0.7 |
| Taiping | 1,233 | 100.0 | 1030 | 83.5 | 190 | 15.4 | 2 | 0.2 | 7 | 0.6 | 4 | 0.3 |
| Tawau | 540 | 100.0 | 354 | 65.6 | 149 | 27.6 | 3 | 0.6 | 32 | 5.9 | 2 | 0.4 |
| Teluk Intan | 1013 | 100.0 | 923 | 91.1 | 68 | 6.7 | 1 | 0.1 | 13 | 1.3 | 3 | 0.3 |
| Temerloh | 1047 | 100.0 | 898 | 85.8 | 101 | 9.6 | 8 | 0.8 | 37 | 3.5 | 3 | 0.3 |
| Kuantan | 576 | 100.0 | 421 | 73.1 | 132 | 22.9 | 10 | 1.7 | 11 | 1.9 | 2 | 0.3 |
| Klang | 1,461 | 100.0 | 1,351 | 92.5 | 76 | 5.2 | 5 | 0.3 | 17 | 1.2 | 5 | 0.3 |
| Seremban | 1,585 | 100.0 | 1,441 | 90.9 | 101 | 6.4 | 10 | 0.6 | 21 | 1.3 | 8 | 0.5 |
| Kuching | 2,068 | 100.0 | 1,986 | 96.0 | 18 | 0.9 | 20 | 1.0 | 29 | 1.4 | 12 | 0.6 |
| Kemaman | 72 | 100.0 | 44 | 61.1 | 25 | 34.7 | 1 | 1.4 | 1 | 1.4 | 0 | 0.0 |
| Sarikei | 555 | 100.0 | 538 | 96.9 | 10 | 1.8 | 0 | 0.0 | 4 | 0.7 | 3 | 0.5 |
| Kulim | 265 | 100.0 | 239 | 90.2 | 17 | 6.4 | 3 | 1.1 | 2 | 0.8 | 3 | 1.1 |
| KK1M Terengganu | 38 | 100.0 | 32 | 84.2 | 6 | 15.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Kelantan | 186 | 100.0 | 94 | 50.5 | 82 | 44.1 | 0 | 0.0 | 9 | 4.8 | 0 | 0.0 |
| KK1M Sarawak | 831 | 100.0 | 808 | 97.2 | 12 | 1.4 | 0 | 0.0 | 9 | 1.1 | 1 | 0.1 |
| MAIWP | 2,266 | 100.0 | 2,196 | 96.9 | 18 | 0.8 | 5 | 0.2 | 39 | 1.7 | 4 | 0.2 |

Table 1.3.5-5: Distribution of Phaco by SDP, CSR 2007-2014

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 11960 | 65.1 | 14781 | 69.1 | 17717 | 72.5 | 21810 | 76.5 | 23872 | 78.0 | 26345 | 81.1 | 31625 | 85.1 | 35429 | 87.4 |
| Alor Setar | 240 | 58.4 | 715 | 72.9 | 702 | 63.2 | 1147 | 75.1 | 1510 | 77.9 | 1451 | 79.1 | 1358 | 77.2 | 1687 | 80.1 |
| Ampang | 3 | 75.0 | 75 | 36.1 | 308 | 71.1 | 558 | 89.0 | 661 | 93.4 | 779 | 86.9 | 822 | 83.6 | 809 | 85.5 |
| Batu Pahat | 453 | 81.6 | 451 | 79.1 | 443 | 73.6 | 307 | 74.7 | 425 | 76.7 | 447 | 73.5 | 332 | 76.7 | 341 | 73.0 |
| Bintulu | - | - | 9 | 31.0 | 75 | 60.5 | 183 | 70.9 | 241 | 72.6 | 245 | 62.7 | 357 | 93.2 | 353 | 94.4 |
| Bukit Mertajam | 403 | 59.2 | 163 | 33.5 | 462 | 62.2 | 503 | 62.6 | 427 | 53.2 | 564 | 60.8 | 620 | 68.2 | 749 | 75.1 |
| Sandakan | NA | NA | 0 | 0.0 | 0 | 0.0 | 4 | 1.9 | 21 | 7.7 | 104 | 39.2 | 354 | 86.1 | 206 | 86.9 |
| Ipoh | 1117 | 71.4 | 1434 | 83.6 | 1801 | 84.3 | 1913 | 87.0 | 1496 | 81.9 | 2596 | 88.5 | 2801 | 92.4 | 2566 | 93.0 |
| Kangar | 91 | 28.1 | 303 | 75.9 | 367 | 92.0 | 342 | 85.5 | 375 | 93.1 | 412 | 90.7 | 421 | 90.3 | 356 | 83.6 |
| Keningau | - | - | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 6 | 40.0 | 96 | 72.2 |
| Kota Bharu | 406 | 49.9 | 383 | 51.8 | 538 | 59.1 | 604 | 62.9 | 580 | 61.3 | 367 | 67.3 | 386 | 56.6 | 162 | 56.8 |
| Kuala Krai | 0 | 0.0 | 78 | 45.9 | 85 | 48.6 | 168 | 77.4 | 211 | 87.9 | 222 | 89.9 | 350 | 88.2 | 292 | 80.0 |
| Kuala Lumpur | NA | NA | 25 | 62.5 | 925 | 65.8 | 1141 | 69.2 | 1091 | 67.3 | 1208 | 79.7 | 956 | 83.1 | 1576 | 81.6 |
| Kuala Pilah | 24 | 11.4 | 58 | 20.6 | 73 | 25.2 | 149 | 46.3 | 376 | 77.8 | 361 | 84.1 | 416 | 84.6 | 430 | 87.2 |
| Kuala Terengganu | 242 | 46.5 | 429 | 59.4 | 473 | 63.7 | 453 | 63.4 | 517 | 67.1 | 537 | 70.2 | 778 | 76.7 | 707 | 78.6 |
| Melaka | 1152 | 75.9 | 1335 | 80.3 | 1111 | 80.1 | 1295 | 78.1 | 1315 | 80.1 | 1203 | 80.8 | 1395 | 81.2 | 1919 | 89.7 |
| Miri | 7 | 46.7 | 296 | 74.7 | 392 | 97.0 | 556 | 96.4 | 593 | 90.3 | 849 | 94.2 | 892 | 97.5 | 893 | 94.1 |
| Muar | 281 | 80.1 | 236 | 70.7 | 452 | 83.4 | 526 | 85.3 | 616 | 89.0 | 608 | 91.4 | 647 | 90.2 | 628 | 86.1 |
| Pulau Pinang | 751 | 68.1 | 1116 | 82.3 | 1208 | 87.9 | 1707 | 91.0 | 2077 | 95.0 | 1260 | 94.7 | 1589 | 93.7 | 1712 | 95.6 |
| Putrajaya | 93 | 45.8 | 166 | 64.8 | 186 | 74.1 | 200 | 70.9 | 263 | 79.9 | 271 | 76.3 | 303 | 77.5 | 289 | 78.7 |
| Kota Kinabalu | 346 | 65.4 | 260 | 74.3 | 331 | 76.4 | 481 | 77.1 | 534 | 77.8 | 529 | 69.3 | 694 | 71.0 | 847 | 81.4 |
| Selayang | 1305 | 92.4 | 1291 | 91.0 | 1255 | 88.5 | 1542 | 90.8 | 1619 | 87.1 | 1625 | 88.8 | 1233 | 92.2 | 809 | 90.0 |
| Serdang | 412 | 68.1 | 521 | 75.0 | 483 | 80.8 | 371 | 71.3 | 466 | 70.0 | 564 | 79.5 | 836 | 81.7 | 1072 | 84.7 |
| Sibu | 0 | 0.0 | 0 | 0.0 | 126 | 32.6 | 386 | 84.8 | 376 | 74.5 | 683 | 91.7 | 835 | 92.8 | 826 | 95.4 |
| Sri Manjung | 14 | 9.3 | 111 | 31.7 | 203 | 62.1 | 314 | 81.1 | 344 | 81.9 | 412 | 88.4 | 799 | 96.0 | 608 | 97.3 |
| Sultan Ismail | 64 | 63.4 | 114 | 63.7 | 131 | 70.8 | 172 | 66.7 | 189 | 66.8 | 208 | 74.6 | 276 | 73.8 | 496 | 81.4 |
| Johor Bahru | 1418 | 91.9 | 1293 | 94.0 | 1166 | 88.5 | 1274 | 92.5 | 986 | 87.5 | 1069 | 89.5 | 1261 | 93.4 | 1303 | 94.4 |
| Sungai Buloh | 121 | 82.9 | 271 | 85.2 | 272 | 70.3 | 346 | 73.9 | 371 | 82.4 | 419 | 81.5 | 450 | 77.6 | 599 | 86.4 |
| Sungei Petani | 410 | 82.5 | 483 | 76.4 | 580 | 84.8 | 455 | 81.5 | 662 | 81.6 | 604 | 71.5 | 704 | 75.7 | 743 | 72.7 |
| Taiping | 100 | 35.8 | 169 | 44.6 | 440 | 71.9 | 552 | 62.1 | 618 | 64.8 | 885 | 79.2 | 1060 | 82.6 | 1030 | 83.5 |
| Tawau | 0 | 0.0 | 3 | 1.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 133 | 26.4 | 354 | 65.6 |
| Teluk Intan | 435 | 64.8 | 358 | 60.9 | 465 | 76.0 | 564 | 81.7 | 571 | 86.1 | 505 | 82.0 | 963 | 87.4 | 923 | 91.1 |
| Temerloh | 210 | 47.3 | 354 | 67.0 | 393 | 61.4 | 317 | 70.4 | 537 | 78.9 | 717 | 82.6 | 718 | 82.9 | 898 | 85.8 |
| Kuantan | 22 | 91.7 | 314 | 80.9 | 218 | 74.4 | 448 | 72.8 | 533 | 78.4 | 555 | 81.1 | 450 | 72.7 | 421 | 73.1 |
| Klang | 570 | 55.0 | 655 | 53.8 | 486 | 53.8 | 617 | 61.3 | 907 | 85.5 | 1224 | 86.7 | 1476 | 91.6 | 1351 | 92.5 |
| Seremban | 589 | 61.9 | 610 | 68.9 | 912 | 74.2 | 1249 | 82.2 | 1368 | 85.2 | 1315 | 84.3 | 1363 | 89.7 | 1441 | 90.9 |
| Kuching | 680 | 68.0 | 702 | 69.4 | 654 | 73.2 | 966 | 80.0 | 996 | 88.1 | 1546 | 93.3 | 1648 | 95.8 | 1986 | 96.0 |
| Kemaman | | | | | | | | | | | | | 37 | 78.7 | 44 | 61.1 |

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sarikei | | | | | | | | | | | | | 281 | 98.3 | 538 | 96.9 |
| Kulim | | | | | | | | | | | | | - | - | 239 | 90.2 |
| KK1M Pahang | | | | | | | | | | | | | 47 | 73.4 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 32 | 84.2 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 94 | 50.5 |
| KK1M Sarawak | | | | | | | | | | | | | 74 | 97.4 | 808 | 97.2 |
| MAIWP | | | | | | | | | | | | | 1504 | 95.0 | 2196 | 96.9 |

Table 1.3.5-6: Distribution of ECCE by SDP, CSR 2007-2014

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 5524 | 30.1 | 5627 | 26.3 | 5457 | 22.3 | 5363 | 18.8 | 5291 | 17.3 | 4784 | 14.7 | 4086 | 11.0 | 3613 | 8.9 |
| Alor Setar | 160 | 38.9 | 247 | 25.2 | 349 | 31.4 | 310 | 20.3 | 349 | 18.0 | 294 | 16.0 | 338 | 19.2 | 343 | 16.3 |
| Ampang | 1 | 25.0 | 106 | 51.0 | 102 | 23.6 | 38 | 6.1 | 28 | 4.0 | 72 | 8.0 | 118 | 12.0 | 105 | 11.1 |
| Batu Pahat | 83 | 15.0 | 95 | 16.7 | 130 | 21.6 | 78 | 19.0 | 104 | 18.8 | 111 | 18.3 | 81 | 18.7 | 80 | 17.1 |
| Bintulu | - | - | 19 | 65.5 | 38 | 30.6 | 70 | 27.1 | 83 | 25.0 | 136 | 34.8 | 14 | 3.7 | 6 | 1.6 |
| Bukit Mertajam | 265 | 38.9 | 315 | 64.7 | 265 | 35.7 | 284 | 35.3 | 350 | 43.6 | 338 | 36.4 | 277 | 30.5 | 237 | 23.7 |
| Sandakan | NA | NA | 130 | 99.2 | 154 | 97.5 | 191 | 91.8 | 231 | 85.2 | 148 | 55.8 | 45 | 10.9 | 29 | 12.2 |
| Ipoh | 396 | 25.3 | 240 | 14.0 | 238 | 11.1 | 208 | 9.5 | 193 | 10.6 | 250 | 8.5 | 146 | 4.8 | 126 | 4.6 |
| Kangar | 223 | 68.8 | 86 | 21.6 | 18 | 4.5 | 46 | 11.5 | 19 | 4.7 | 27 | 5.9 | 34 | 7.3 | 50 | 11.7 |
| Keningau | - | - | 33 | 97.1 | 28 | 90.3 | 72 | 94.7 | 51 | 98.1 | 17 | 100.0 | 9 | 60.0 | 33 | 24.8 |
| Kota Bharu | 337 | 41.4 | 302 | 40.9 | 302 | 33.2 | 280 | 29.2 | 287 | 30.3 | 141 | 25.9 | 246 | 36.1 | 106 | 37.2 |
| Kuala Krai | 119 | 95.2 | 81 | 47.6 | 82 | 46.9 | 33 | 15.2 | 15 | 6.3 | 16 | 6.5 | 24 | 6.0 | 51 | 14.0 |
| Kuala Lumpur | NA | NA | 12 | 30.0 | 403 | 28.7 | 447 | 27.1 | 454 | 28.0 | 263 | 17.3 | 163 | 14.2 | 289 | 15.0 |
| Kuala Pilah | 164 | 77.7 | 190 | 67.6 | 175 | 60.3 | 137 | 42.5 | 81 | 16.8 | 52 | 12.1 | 44 | 8.9 | 32 | 6.5 |
| Kuala Terengganu | 243 | 46.7 | 238 | 33.0 | 226 | 30.4 | 207 | 29.0 | 201 | 26.1 | 177 | 23.1 | 185 | 18.2 | 150 | 16.7 |
| Melaka | 307 | 20.2 | 271 | 16.3 | 205 | 14.8 | 283 | 17.1 | 274 | 16.7 | 248 | 16.7 | 279 | 16.2 | 147 | 6.9 |
| Miri | 7 | 46.7 | 95 | 24.0 | 10 | 2.5 | 15 | 2.6 | 48 | 7.3 | 28 | 3.1 | 11 | 1.2 | 38 | 4.0 |
| Muar | 49 | 14.0 | 81 | 24.3 | 52 | 9.6 | 44 | 7.1 | 38 | 5.5 | 19 | 2.9 | 41 | 5.7 | 56 | 7.7 |
| Pulau Pinang | 270 | 24.5 | 177 | 13.1 | 124 | 9.0 | 127 | 6.8 | 68 | 3.1 | 34 | 2.6 | 47 | 2.8 | 29 | 1.6 |
| Putrajaya | 104 | 51.2 | 79 | 30.9 | 57 | 22.7 | 65 | 23.0 | 42 | 12.8 | 48 | 13.5 | 48 | 12.3 | 46 | 12.5 |
| Kota Kinabalu | 155 | 29.3 | 74 | 21.1 | 62 | 14.3 | 117 | 18.8 | 96 | 14.0 | 163 | 21.4 | 223 | 22.8 | 131 | 12.6 |
| Selayang | 44 | 3.1 | 70 | 4.9 | 106 | 7.5 | 80 | 4.7 | 116 | 6.2 | 75 | 4.1 | 43 | 3.2 | 34 | 3.8 |
| Serdang | 151 | 25.0 | 133 | 19.1 | 79 | 13.2 | 113 | 21.7 | 156 | 23.4 | 109 | 15.4 | 128 | 12.5 | 122 | 9.6 |
| Sibu | 372 | 97.1 | 257 | 97.7 | 258 | 66.7 | 48 | 10.5 | 96 | 19.0 | 43 | 5.8 | 34 | 3.8 | 12 | 1.4 |
| Sri Manjung | 134 | 88.7 | 233 | 66.6 | 122 | 37.3 | 71 | 18.3 | 65 | 15.5 | 40 | 8.6 | 14 | 1.7 | 11 | 1.8 |
| Sultan Ismail | 32 | 31.7 | 61 | 34.1 | 49 | 26.5 | 72 | 27.9 | 83 | 29.3 | 55 | 19.7 | 63 | 16.8 | 70 | 11.5 |
| Johor Bahru | 53 | 3.4 | 30 | 2.2 | 55 | 4.2 | 27 | 2.0 | 72 | 6.4 | 69 | 5.8 | 44 | 3.3 | 26 | 1.9 |
| Sungai Buloh | 8 | 5.5 | 25 | 7.9 | 88 | 22.7 | 89 | 19.0 | 54 | 12.0 | 63 | 12.3 | 89 | 15.3 | 58 | 8.4 |

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sungei Petani | 57 | 11.5 | 99 | 15.7 | 58 | 8.5 | 70 | 12.5 | 101 | 12.5 | 204 | 24.1 | 167 | 18.0 | 191 | 18.7 |
| Taiping | 159 | 57.0 | 194 | 51.2 | 154 | 25.2 | 303 | 34.1 | 315 | 33.1 | 208 | 18.6 | 206 | 16.0 | 190 | 15.4 |
| Tawau | 196 | 97.5 | 305 | 97.1 | 292 | 98.0 | 380 | 94.8 | 557 | 96.9 | 634 | 97.8 | 308 | 61.2 | 149 | 27.6 |
| Teluk Intan | 222 | 33.1 | 193 | 32.8 | 111 | 18.1 | 92 | 13.3 | 72 | 10.9 | 86 | 14.0 | 109 | 9.9 | 68 | 6.7 |
| Temerloh | 210 | 47.3 | 138 | 26.1 | 204 | 31.9 | 104 | 23.1 | 79 | 11.6 | 87 | 10.0 | 81 | 9.4 | 101 | 9.6 |
| Kuantan | 1 | 4.2 | 37 | 9.5 | 46 | 15.7 | 114 | 18.5 | 98 | 14.4 | 89 | 13.0 | 140 | 22.6 | 132 | 22.9 |
| Klang | 403 | 38.9 | 499 | 41.0 | 368 | 40.7 | 341 | 33.9 | 120 | 11.3 | 146 | 10.3 | 64 | 4.0 | 76 | 5.2 |
| Seremban | 319 | 33.5 | 219 | 24.7 | 261 | 21.2 | 226 | 14.9 | 194 | 12.1 | 207 | 13.3 | 128 | 8.4 | 101 | 6.4 |
| Kuching | 276 | 27.6 | 263 | 26.0 | 186 | 20.8 | 181 | 15.0 | 101 | 8.9 | 87 | 5.3 | 33 | 1.9 | 18 | 0.9 |
| Kemaman | | | | | | | | | | | | | 9 | 19.1 | 25 | 34.7 |
| Sarikei | | | | | | | | | | | | | 2 | 0.7 | 10 | 1.8 |
| Kulim | | | | | | | | | | | | | - | - | 17 | 6.4 |
| KK1M Pahang | | | | | | | | | | | | | 11 | 17.2 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 6 | 15.8 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 82 | 44.1 |
| KK1M Sarawak | | | | | | | | | | | | | 1 | 1.3 | 12 | 1.4 |
| MAIWP | | | | | | | | | | | | | 39 | 2.5 | 18 | 0.8 |

### 1.3.6 Distribution of Combined Surgery

Table 1.3.6-1: Distribution of Combined Surgery, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any types of combined surgeries | 891 | 4.8 | 664 | 3.1 | 871 | 3.6 | 1082 | 3.8 | 1194 | 3.9 | 1221 | 3.8 | 1026 | 2.8 | 1028 | 2.6 |
| **Specific types of combined surgery** | | | | | | | | | | | | | | | | |
| Pterygium Surgery | 135 | 0.7 | 94 | 0.4 | 100 | 0.4 | 99 | 0.3 | 133 | 0.4 | 111 | 0.3 | 83 | 0.2 | 115 | 0.3 |
| Filtering Glaucoma Surgery | 131 | 0.7 | 142 | 0.7 | 132 | 0.5 | 121 | 0.4 | 64 | 0.2 | 71 | 0.2 | 114 | 0.3 | 95 | 0.2 |
| Vitreoretinal Surgery | 435 | 2.4 | 237 | 1.1 | 402 | 1.6 | 601 | 2.1 | 672 | 2.2 | 585 | 1.8 | 536 | 1.4 | 532 | 1.3 |
| Penetrating Keratoplasty | 0 | 0.0 | 3 | 0.0 | 6 | 0.0 | 2 | 0.0 | 1 | 0.0 | 3 | 0.0 | 2 | 0.0 | 2 | 0.0 |
| Others | 190 | 1.0 | 188 | 0.9 | 259 | 1.1 | 272 | 1.0 | 344 | 1.1 | 477 | 1.5 | 311 | 0.8 | 304 | 0.8 |

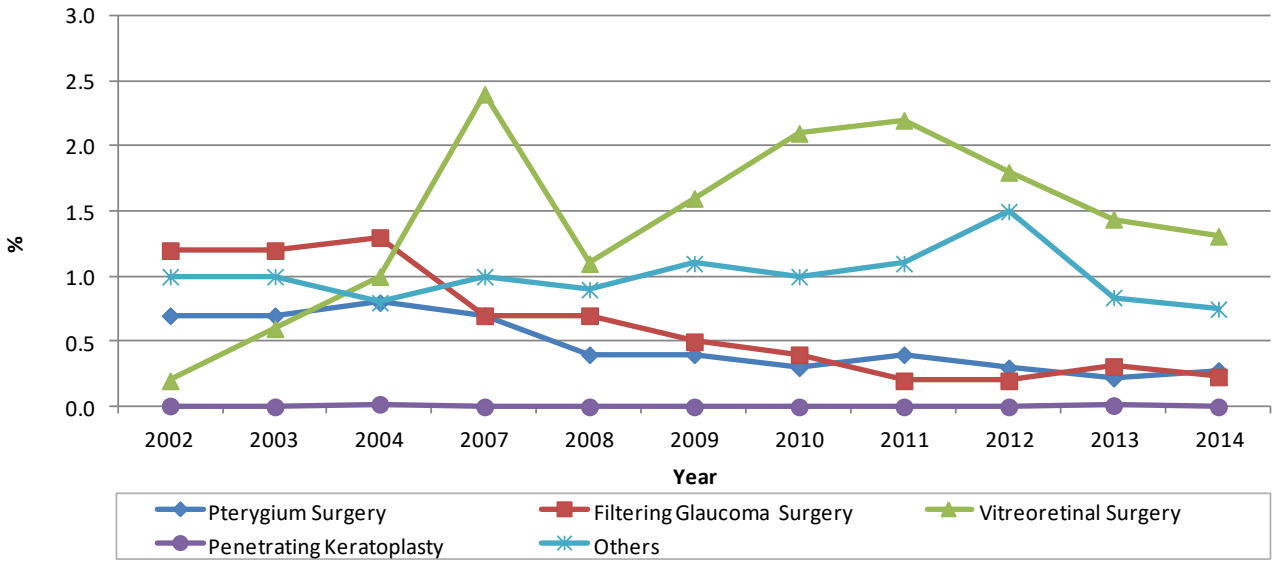



Figure 1.3.6-1: Distribution of Specific Combined Surgery, CSR 2002-2014

Table 1.3.6-2: Distribution of Combined Surgery by SDP, CSR 2007-2014

| | 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** | 40532 | 1028 | 2.5 | 115 | 0.3 | 95 | 0.2 | 532 | 1.3 | 2 | 0.0 | 304 | 0.8 |
| Alor Setar | 2106 | 178 | 8.5 | 6 | 0.3 | 19 | 0.9 | 113 | 5.4 | 0 | 0.0 | 50 | 2.4 |
| Ampang | 946 | 22 | 2.3 | 2 | 0.2 | 18 | 1.9 | 0 | 0.0 | 0 | 0.0 | 2 | 0.2 |
| Batu Pahat | 467 | 6 | 1.3 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 5 | 1.1 |
| Bintulu | 374 | 29 | 7.8 | 25 | 6.7 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 3 | 0.8 |
| Bukit Mertajam | 998 | 7 | 0.7 | 2 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.5 |
| Sandakan | 237 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 2759 | 80 | 2.9 | 3 | 0.1 | 2 | 0.1 | 69 | 2.5 | 0 | 0.0 | 7 | 0.3 |
| Kangar | 426 | 3 | 0.7 | 0 | 0.0 | 3 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 133 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kota Bharu | 285 | 8 | 2.8 | 0 | 0.0 | 0 | 0.0 | 8 | 2.8 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 365 | 10 | 2.7 | 1 | 0.3 | 3 | 0.8 | 0 | 0.0 | 0 | 0.0 | 6 | 1.6 |
| Kuala Lumpur | 1932 | 39 | 2.0 | 2 | 0.1 | 0 | 0.0 | 20 | 1.0 | 2 | 0.1 | 15 | 0.8 |
| Kuala Pilah | 493 | 7 | 1.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 7 | 1.4 |
| Kuala Terengganu | 900 | 58 | 6.4 | 12 | 1.3 | 3 | 0.3 | 13 | 1.4 | 0 | 0.0 | 36 | 4.0 |
| Melaka | 2139 | 38 | 1.8 | 4 | 0.2 | 18 | 0.8 | 11 | 0.5 | 0 | 0.0 | 5 | 0.2 |
| Miri | 949 | 5 | 0.5 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 0.4 |
| Muar | 729 | 4 | 0.5 | 0 | 0.0 | 4 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Pulau Pinang | 1791 | 108 | 6.0 | 2 | 0.1 | 7 | 0.4 | 96 | 5.4 | 0 | 0.0 | 3 | 0.2 |

| | Combined Surgery | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | Any Combined Surgery | | Pterygium Surgery | | Filtering Surgery | | Vitreo-Retinal Surgery | | Penetrating Keratoplasty | | Others | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Putrajaya | 367 | 3 | 0.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 0.8 |
| Kota Kinabalu | 1040 | 22 | 2.1 | 4 | 0.4 | 0 | 0.0 | 14 | 1.3 | 0 | 0.0 | 4 | 0.4 |
| Selayang | 899 | 60 | 6.7 | 0 | 0.0 | 4 | 0.4 | 38 | 4.2 | 0 | 0.0 | 18 | 2.0 |
| Serdang | 1265 | 20 | 1.6 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 20 | 1.6 |
| Sibu | 866 | 10 | 1.2 | 3 | 0.3 | 4 | 0.5 | 0 | 0.0 | 0 | 0.0 | 3 | 0.3 |
| Sri Manjung | 625 | 10 | 1.6 | 6 | 1.0 | 2 | 0.3 | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 |
| Sultan Ismail | 609 | 10 | 1.6 | 3 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 7 | 1.1 |
| Johor Bahru | 1381 | 26 | 1.9 | 1 | 0.1 | 1 | 0.1 | 14 | 1.0 | 0 | 0.0 | 10 | 0.7 |
| Sungai Buloh | 693 | 3 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 0.4 |
| Sungei Petani | 1022 | 13 | 1.3 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 12 | 1.2 |
| Taiping | 1233 | 30 | 2.4 | 4 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 26 | 2.1 |
| Tawau | 540 | 23 | 4.3 | 19 | 3.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 0.7 |
| Teluk Intan | 1013 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Temerloh | 1047 | 6 | 0.6 | 3 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 0.3 |
| Kuantan | 576 | 3 | 0.5 | 0 | 0.0 | 0 | 0.0 | 3 | 0.5 | 0 | 0.0 | 0 | 0.0 |
| Klang | 1461 | 7 | 0.5 | 2 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.3 |
| Seremban | 1585 | 48 | 3.0 | 0 | 0.0 | 0 | 0.0 | 32 | 2.0 | 0 | 0.0 | 16 | 1.0 |
| Kuching | 2068 | 119 | 5.8 | 6 | 0.3 | 6 | 0.3 | 96 | 4.6 | 0 | 0.0 | 11 | 0.5 |
| Kemaman | 72 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sarikei | 555 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Kulim | 265 | 7 | 2.6 | 0 | 0.0 | 0 | 0.0 | 3 | 1.1 | 0 | 0.0 | 6 | 2.3 |
| KK1M Terengganu | 38 | 1 | 2.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 2.6 |
| KK1M Kelantan | 186 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Sarawak | 831 | 3 | 0.4 | 3 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| MAIWP | 2266 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 |

### 1.3.7 Anaesthesia in Cataract Surgery

Majority of cataract surgeries were done under local anaesthesia (LA). There was a shift from subtenon to topical anaesthesia as the preferred method of LA.

The percentage of surgeons using combined, subconjunctival and intracameral LA appeared to be increasing

Table 1.3.7-1: Types of Anaesthesia, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| General Anesthesia | 1207 | 6.6 | 1223 | 5.7 | 1578 | 6.5 | 1884 | 6.6 | 1845 | 6.0 | 2117 | 6.5 | 2229 | 6.0 | 2415 | 6.0 |
| Local Anesthesia | 17143 | 93.4 | 20188 | 94.3 | 22776 | 93.2 | 26440 | 92.8 | 28634 | 93.5 | 30215 | 93.1 | 34622 | 93.2 | 37654 | 92.9 |
| **Type of local anasthesia** | | | | | | | | | | | | | | | | |
| Subtenon | 9990 | 58.3 | 11014 | 54.6 | 11525 | 50.6 | 10952 | 41.4 | 10512 | 36.7 | 9849 | 32.6 | 9913 | 28.6 | 9351 | 24.8 |
| Topical | 4853 | 28.3 | 6680 | 33.1 | 8382 | 36.8 | 13112 | 49.6 | 16825 | 58.8 | 18461 | 61.1 | 22220 | 64.2 | 25068 | 66.6 |
| Peribulbar | 1282 | 7.5 | 1227 | 6.1 | 1244 | 5.5 | 881 | 3.3 | 440 | 1.5 | 279 | 0.9 | 308 | 0.9 | 474 | 1.3 |
| Retrobulbar | 1031 | 6.0 | 1182 | 5.9 | 1037 | 4.6 | 864 | 3.3 | 808 | 2.8 | 667 | 2.2 | 503 | 1.5 | 436 | 1.2 |
| Intracameral | 249 | 1.5 | 710 | 3.5 | 1596 | 7.0 | 2587 | 9.8 | 2933 | 10.2 | 3419 | 11.3 | 4733 | 13.7 | 6311 | 16.8 |
| Subconjunctival | 232 | 1.4 | 251 | 1.2 | 437 | 1.9 | 898 | 3.4 | 771 | 2.7 | 1266 | 4.2 | 1338 | 3.9 | 1352 | 3.6 |
| Facial block | 20 | 0.1 | 143 | 0.7 | 95 | 0.4 | 40 | 0.2 | 43 | 0.2 | 21 | 0.1 | 24 | 0.1 | 14 | 0.0 |
| Others | 0 | 0.0 | NA | NA | 0 | 0.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Combined local anaesthesia | 720 | 4.2 | 1274 | 6.3 | 1918 | 8.4 | 3182 | 12.0 | 4038 | 14.1 | 4375 | 14.5 | 4868 | 14.1 | 5954 | 15.8 |
| **Types of sedation for patients under local anaesthesia** | | | | | | | | | | | | | | | | |
| No sedation | 9668 | 56.4* | 11234 | 55.6 | 12809 | 56.2 | 15970 | 60.4 | 18646 | 65.1 | 19379 | 64.1 | 18685 | 54.0 | 19249 | 51.1 |
| Oral sedation alone | 2387 | 13.9 | 2923 | 14.5 | 3532 | 15.5 | 3171 | 12.0 | 2852 | 10.0 | 1810 | 6.0 | 1391 | 4.0 | 1823 | 4.8 |
| Intravenous alone | 72 | 0.4 | 37 | 0.2 | 35 | 0.2 | 22 | 0.1 | 27 | 0.1 | 36 | 0.1 | 31 | 0.1 | 36 | 0.1 |
| Intravenous plus oral | 0 | 0.0 | NA | NA | NA | NA | 2 | 0.0 | 6 | 0.0 | 6 | 0.0 | 1 | 0.0 | 2 | 0.0 |
| Intramuscular alone | 3 | 0.0 | 121 | 0.6 | 52 | 0.2 | 0 | 0.0 | 3 | 0.0 | 2 | 0.0 | 18 | 0.1 | 1 | 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 1.3.7-2: Types of Anaesthesia (50 years and above), CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 16715 | | 19709 | | 22496 | | 26336 | | 28425 | | 30228 | | 34815 | | 38305 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| General Anesthesia | 628 | 3.8 | 681 | 3.5 | 950 | 6.5 | 1184 | 4.5 | 1173 | 4.1 | 1412 | 4.7 | 1545 | 4.4 | 1760 | 4.6 |
| Local Anesthesia | 16018 | 95.8 | 18946 | 96.1 | 21468 | 93.2 | 24981 | 94.9 | 27131 | 95.5 | 28689 | 94.9 | 32985 | 94.7 | 36107 | 94.3 |
| **Type of local anasthesia** | | | | | | | | | | | | | | | | |
| Subtenon | 9397 | 58.7 | 10354 | 54.7 | 10861 | 50.6 | 10338 | 41.4 | 9979 | 36.8 | 9340 | 32.6 | 9435 | 28.6 | 8938 | 24.8 |
| Topical | 4510 | 28.2 | 6274 | 33.1 | 7952 | 37.0 | 12473 | 49.9 | 16003 | 59.0 | 17557 | 61.2 | 21203 | 64.3 | 24071 | 66.7 |
| Peribulbar | 1224 | 7.6 | 1159 | 6.1 | 1173 | 5.5 | 842 | 3.4 | 415 | 1.5 | 257 | 0.9 | 287 | 0.9 | 441 | 1.2 |
| Retrobulbar | 905 | 5.6 | 1084 | 5.7 | 921 | 4.3 | 749 | 3.0 | 665 | 2.5 | 573 | 2.0 | 430 | 1.3 | 382 | 1.1 |
| Intracameral | 231 | 1.4 | 685 | 3.6 | 1527 | 7.1 | 2447 | 9.8 | 2818 | 10.4 | 3287 | 11.5 | 4539 | 13.8 | 6089 | 16.9 |
| Subconjunctival | 218 | 1.4 | 233 | 1.2 | 412 | 1.9 | 847 | 3.4 | 721 | 2.7 | 1200 | 4.2 | 1272 | 3.9 | 1295 | 3.6 |
| Facial block | 20 | 0.1 | 134 | 0.7 | 86 | 0.4 | 39 | 0.2 | 40 | 0.1 | 20 | 0.1 | 24 | 0.1 | 13 | 0.0 |
| Others | 0 | 0.0 | NA | NA | 0 | 0.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Combined local anaesthesia | 672 | 4.2 | 1219 | 6.4 | 1815 | 8.5 | 3030 | 12.1 | 3830 | 14.1 | 4135 | 14.4 | 4645 | 14.1 | 5700 | 15.8 |
| **Types of sedation for patients under local anaesthesia** | | | | | | | | | | | | | | | | |
| No sedation | 9027 | 56.4 | 10524 | 55.5 | 12056 | 56.2 | 15019 | 60.1 | 17616 | 64.9 | 18386 | 64.1 | 17810 | 54.0 | 18485 | 51.2 |
| Oral sedation alone | 2264 | 14.1 | 2798 | 14.8 | 3355 | 15.6 | 3055 | 12.2 | 2731 | 10.1 | 1748 | 6.1 | 1339 | 4.1 | 1755 | 4.9 |
| Intravenous alone | 55 | 0.3 | 37 | 0.2 | 29 | 0.1 | 18 | 0.1 | 23 | 0.1 | 34 | 0.1 | 28 | 0.1 | 26 | 0.1 |
| Intravenous plus oral | 0 | 0.0 | NA | NA | NA | NA | 2 | 0.0 | 5 | 0.0 | 6 | 0.0 | 1 | 0.0 | 1 | 0.0 |
| Intramuscular alone | 3 | 0.0 | 114 | 0.6 | 47 | 0.2 | 0 | 0.0 | 2 | 0.0 | 2 | 0.0 | 17 | 0.1 | 1 | 0.0 |

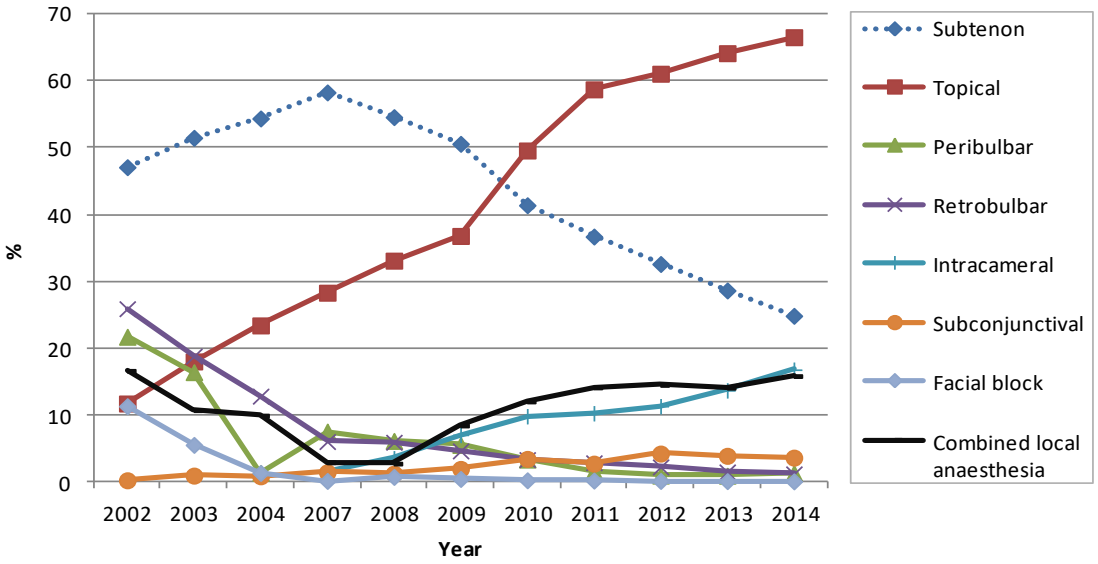



Figure 1.3.7-1: Types of Anaesthesia, CSR 2002-2014

Table 1.3.7-3: Types of Anaesthesia by SDP, CSR 2014

| Types of Anaesthesia | | | | | |
|---|---|---|---|---|---|
| | | General | | Local | |
| | N | n | % | n | % |
| **All Centres** | 40532 | 2415 | 6.0 | 37654 | 92.9 |
| Alor Setar | 2106 | 312 | 14.8 | 1793 | 85.1 |
| Ampang | 946 | 33 | 3.5 | 908 | 96.0 |
| Batu Pahat | 467 | 15 | 3.2 | 452 | 96.8 |
| Bintulu | 374 | 0 | 0.0 | 374 | 100.0 |
| Bukit Mertajam | 998 | 29 | 2.9 | 966 | 96.8 |
| Sandakan | 237 | 3 | 1.3 | 233 | 98.3 |
| Ipoh | 2,759 | 352 | 12.8 | 2,225 | 80.6 |
| Kangar | 426 | 7 | 1.6 | 418 | 98.1 |
| Keningau | 133 | 4 | 3.0 | 129 | 97.0 |
| Kota Bharu | 285 | 9 | 3.2 | 275 | 96.5 |
| Kuala Krai | 365 | 5 | 1.4 | 358 | 98.1 |
| Kuala Lumpur | 1,932 | 166 | 8.6 | 1,734 | 89.8 |
| Kuala Pilah | 493 | 28 | 5.7 | 460 | 93.3 |
| Kuala Terengganu | 900 | 53 | 5.9 | 838 | 93.1 |
| Melaka | 2,139 | 50 | 2.3 | 2,059 | 96.3 |
| Miri | 949 | 1 | 0.1 | 947 | 99.8 |
| Muar | 729 | 31 | 4.3 | 695 | 95.3 |
| Pulau Pinang | 1,791 | 32 | 1.8 | 1,752 | 97.8 |
| Putrajaya | 367 | 12 | 3.3 | 353 | 96.2 |
| Kota Kinabalu | 1040 | 79 | 7.6 | 958 | 92.1 |
| Selayang | 899 | 25 | 2.8 | 781 | 86.9 |
| Serdang | 1,265 | 86 | 6.8 | 1168 | 92.3 |
| Sibu | 866 | 11 | 1.3 | 853 | 98.5 |
| Sri Manjung | 625 | 27 | 4.3 | 597 | 95.5 |
| Sultan Ismail | 609 | 124 | 20.4 | 484 | 79.5 |
| Johor Bahru | 1,381 | 34 | 2.5 | 1,345 | 97.4 |
| Sungai Buloh | 693 | 90 | 13.0 | 592 | 85.4 |
| Sungei Petani | 1022 | 137 | 13.4 | 882 | 86.3 |
| Taiping | 1,233 | 151 | 12.2 | 1,082 | 87.8 |
| Tawau | 540 | 7 | 1.3 | 526 | 97.4 |
| Teluk Intan | 1,013 | 10 | 1.0 | 995 | 98.2 |
| Temerloh | 1047 | 24 | 2.3 | 1019 | 97.3 |
| Kuantan | 576 | 110 | 19.1 | 464 | 80.6 |
| Klang | 1,461 | 195 | 13.3 | 1,251 | 85.6 |
| Seremban | 1,585 | 62 | 3.9 | 1,521 | 96.0 |
| Kuching | 2,068 | 89 | 4.3 | 1,975 | 95.5 |
| Kemaman | 72 | 1 | 1.4 | 71 | 98.6 |
| Sarikei | 555 | 3 | 0.5 | 552 | 99.5 |
| Kulim | 265 | 4 | 1.5 | 261 | 98.5 |
| KK1M Terengganu | 38 | 0 | 0.0 | 35 | 92.1 |
| KK1M Kelantan | 186 | 1 | 0.5 | 183 | 98.4 |
| KK1M Sarawak | 831 | 3 | 0.4 | 824 | 99.2 |
| MAIWP | 2,266 | 0 | 0.0 | 2,266 | 100.0 |

Table 1.3.7-4: Types of Anaesthesia by SDP (50 years and above), CSR 2014

| Types of Anaesthesia | | | | | |
|---|---|---|---|---|---|
| | | General | | Local | |
| | **N** | **n** | **%** | **n** | **%** |
| **All Centres** | 38,305 | 1,760 | 4.6 | 36,107 | 94.3 |
| Alor Setar | 1,958 | 229 | 11.7 | 1,728 | 88.3 |
| Ampang | 904 | 20 | 2.2 | 879 | 97.2 |
| Batu Pahat | 449 | 10 | 2.2 | 439 | 97.8 |
| Bintulu | 341 | 0 | 0.0 | 341 | 100.0 |
| Bukit Mertajam | 947 | 15 | 1.6 | 929 | 98.1 |
| Sandakan | 218 | 2 | 0.9 | 215 | 98.6 |
| Ipoh | 2,629 | 294 | 11.2 | 2,163 | 82.3 |
| Kangar | 402 | 2 | 0.5 | 399 | 99.3 |
| Keningau | 128 | 3 | 2.3 | 125 | 97.7 |
| Kota Bharu | 258 | 4 | 1.6 | 254 | 98.4 |
| Kuala Krai | 351 | 1 | 0.3 | 348 | 99.1 |
| Kuala Lumpur | 1,830 | 133 | 7.3 | 1668 | 91.1 |
| Kuala Pilah | 472 | 18 | 3.8 | 449 | 95.1 |
| Kuala Terengganu | 833 | 29 | 3.5 | 795 | 95.4 |
| Melaka | 2,048 | 31 | 1.5 | 1,989 | 97.1 |
| Miri | 907 | 1 | 0.1 | 906 | 99.9 |
| Muar | 688 | 19 | 2.8 | 667 | 96.9 |
| Pulau Pinang | 1,710 | 21 | 1.2 | 1,682 | 98.4 |
| Putrajaya | 349 | 7 | 2.0 | 340 | 97.4 |
| Kota Kinabalu | 965 | 52 | 5.4 | 912 | 94.5 |
| Selayang | 818 | 8 | 1.0 | 721 | 88.1 |
| Serdang | 1182 | 49 | 4.1 | 1122 | 94.9 |
| Sibu | 819 | 6 | 0.7 | 811 | 99.0 |
| Sri Manjung | 613 | 21 | 3.4 | 591 | 96.4 |
| Sultan Ismail | 562 | 94 | 16.7 | 467 | 83.1 |
| Johor Bahru | 1,292 | 21 | 1.6 | 1,269 | 98.2 |
| Sungai Buloh | 639 | 76 | 11.9 | 552 | 86.4 |
| Sungei Petani | 919 | 81 | 8.8 | 835 | 90.9 |
| Taiping | 1,185 | 135 | 11.4 | 1,050 | 88.6 |
| Tawau | 494 | 1 | 0.2 | 487 | 98.6 |
| Teluk Intan | 988 | 7 | 0.7 | 973 | 98.5 |
| Temerloh | 1008 | 15 | 1.5 | 989 | 98.1 |
| Kuantan | 537 | 88 | 16.4 | 447 | 83.2 |
| Klang | 1,373 | 166 | 12.1 | 1,192 | 86.8 |
| Seremban | 1,503 | 51 | 3.4 | 1,460 | 97.1 |
| Kuching | 1,932 | 53 | 2.7 | 1,875 | 97.0 |
| Kemaman | 66 | 0 | 0.0 | 66 | 100.0 |
| Sarikei | 544 | 2 | 0.4 | 542 | 99.6 |
| Kulim | 251 | 1 | 0.4 | 250 | 99.6 |
| KK1M Terengganu | 38 | 0 | 0.0 | 36 | 94.7 |
| KK1M Kelantan | 180 | 1 | 0.6 | 177 | 98.3 |
| KK1M Sarawak | 806 | 3 | 0.4 | 799 | 99.1 |
| MAIWP | 2,169 | 0 | 0.0 | 2,169 | 100.0 |

Table 1.3.7-5: Types of Local Anaesthesia by SDP, CSR 2014

| | Local Anaesthesia | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | Retrobulbar | | Peribulbar | | Subtenon | | Sub-conjunctival | | Facial block | | Topical | | Intracameral | | Combined | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 37,654 | 436 | 1.2 | 474 | 1.3 | 9,351 | 24.8 | 1,352 | 3.6 | 14 | 0.0 | 25,068 | 66.6 | 6,311 | 16.8 | 5,954 | 15.8 |
| Alor Setar | 1,793 | 79 | 4.4 | 4 | 0.2 | 379 | 21.1 | 3 | 0.2 | 0 | 0.0 | 1107 | 61.7 | 655 | 36.5 | 438 | 24.4 |
| Ampang | 908 | 0 | 0.0 | 1 | 0.1 | 125 | 13.8 | 4 | 0.4 | 0 | 0.0 | 827 | 91.1 | 800 | 88.1 | 829 | 91.3 |
| Batu Pahat | 452 | 5 | 1.1 | 7 | 1.5 | 293 | 64.8 | 148 | 32.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Bintulu | 374 | 0 | 0.0 | 0 | 0.0 | 374 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bukit Mertajam | 966 | 0 | 0.0 | 1 | 0.1 | 283 | 29.3 | 0 | 0.0 | 1 | 0.1 | 2 | 0.2 | 678 | 70.2 | 4 | 0.4 |
| Sandakan | 233 | 0 | 0.0 | 0 | 0.0 | 7 | 3.0 | 0 | 0.0 | 0 | 0.0 | 225 | 96.6 | 0 | 0.0 | 1 | 0.4 |
| Ipoh | 2,225 | 18 | 0.8 | 2 | 0.1 | 198 | 8.9 | 197 | 8.9 | 4 | 0.2 | 2,163 | 97.2 | 961 | 43.2 | 1,153 | 51.8 |
| Kangar | 418 | 1 | 0.2 | 0 | 0.0 | 414 | 99.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 129 | 1 | 0.8 | 35 | 27.1 | 20 | 15.5 | 0 | 0.0 | 1 | 0.8 | 74 | 57.4 | 0 | 0.0 | 2 | 1.6 |
| Kota Bharu | 275 | 0 | 0.0 | 0 | 0.0 | 273 | 99.3 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 358 | 1 | 0.3 | 0 | 0.0 | 248 | 69.3 | 3 | 0.8 | 0 | 0.0 | 161 | 45.0 | 1 | 0.3 | 58 | 16.2 |
| Kuala Lumpur | 1,734 | 21 | 1.2 | 331 | 19.1 | 761 | 43.9 | 11 | 0.6 | 1 | 0.1 | 509 | 29.4 | 397 | 22.9 | 330 | 19.0 |
| Kuala Pilah | 460 | 0 | 0.0 | 0 | 0.0 | 303 | 65.9 | 1 | 0.2 | 0 | 0.0 | 103 | 22.4 | 0 | 0.0 | 10 | 2.2 |
| Kuala Terengganu | 838 | 0 | 0.0 | 0 | 0.0 | 207 | 24.7 | 5 | 0.6 | 0 | 0.0 | 650 | 77.6 | 10 | 1.2 | 42 | 5.0 |
| Melaka | 2,059 | 4 | 0.2 | 2 | 0.1 | 123 | 6.0 | 0 | 0.0 | 0 | 0.0 | 2,008 | 97.5 | 2 | 0.1 | 86 | 4.2 |
| Miri | 947 | 1 | 0.1 | 0 | 0.0 | 364 | 38.4 | 1 | 0.1 | 0 | 0.0 | 627 | 66.2 | 0 | 0.0 | 51 | 5.4 |
| Muar | 695 | 0 | 0.0 | 0 | 0.0 | 53 | 7.6 | 2 | 0.3 | 5 | 0.7 | 644 | 92.7 | 247 | 35.5 | 253 | 36.4 |
| Pulau Pinang | 1,752 | 97 | 5.5 | 8 | 0.5 | 122 | 7.0 | 2 | 0.1 | 0 | 0.0 | 1,573 | 89.8 | 19 | 1.1 | 87 | 5.0 |
| Putrajaya | 353 | 0 | 0.0 | 0 | 0.0 | 77 | 21.8 | 1 | 0.3 | 0 | 0.0 | 4 | 1.1 | 288 | 81.6 | 17 | 4.8 |
| Kota Kinabalu | 958 | 2 | 0.2 | 16 | 1.7 | 248 | 25.9 | 1 | 0.1 | 0 | 0.0 | 796 | 83.1 | 6 | 0.6 | 118 | 12.3 |
| Selayang | 781 | 50 | 6.4 | 10 | 1.3 | 131 | 16.8 | 1 | 0.1 | 0 | 0.0 | 600 | 76.8 | 118 | 15.1 | 145 | 18.6 |
| Serdang | 1168 | 0 | 0.0 | 1 | 0.1 | 362 | 31.0 | 1 | 0.1 | 0 | 0.0 | 752 | 64.4 | 452 | 38.7 | 418 | 35.8 |
| Sibu | 853 | 0 | 0.0 | 0 | 0.0 | 22 | 2.6 | 0 | 0.0 | 0 | 0.0 | 843 | 98.8 | 0 | 0.0 | 14 | 1.6 |
| Sri Manjung | 597 | 0 | 0.0 | 0 | 0.0 | 4 | 0.7 | 0 | 0.0 | 0 | 0.0 | 587 | 98.3 | 1 | 0.2 | 2 | 0.3 |
| Sultan Ismail | 484 | 0 | 0.0 | 0 | 0.0 | 159 | 32.9 | 313 | 64.7 | 0 | 0.0 | 95 | 19.6 | 1 | 0.2 | 84 | 17.4 |
| Johor Bahru | 1,345 | 15 | 1.1 | 0 | 0.0 | 278 | 20.7 | 400 | 29.7 | 1 | 0.1 | 440 | 32.7 | 554 | 41.2 | 339 | 25.2 |
| Sungai Buloh | 592 | 3 | 0.5 | 1 | 0.2 | 158 | 26.7 | 56 | 9.5 | 0 | 0.0 | 193 | 32.6 | 140 | 23.6 | 80 | 13.5 |
| Sungei Petani | 882 | 0 | 0.0 | 0 | 0.0 | 218 | 24.7 | 2 | 0.2 | 0 | 0.0 | 756 | 85.7 | 0 | 0.0 | 95 | 10.8 |
| Taiping | 1,082 | 0 | 0.0 | 0 | 0.0 | 189 | 17.5 | 0 | 0.0 | 0 | 0.0 | 906 | 83.7 | 0 | 0.0 | 14 | 1.3 |
| Tawau | 526 | 0 | 0.0 | 0 | 0.0 | 406 | 77.2 | 6 | 1.1 | 0 | 0.0 | 112 | 21.3 | 0 | 0.0 | 3 | 0.6 |
| Teluk Intan | 995 | 1 | 0.1 | 0 | 0.0 | 986 | 99.1 | 0 | 0.0 | 1 | 0.1 | 33 | 3.3 | 0 | 0.0 | 33 | 3.3 |
| Temerloh | 1019 | 12 | 1.2 | 32 | 3.1 | 491 | 48.2 | 7 | 0.7 | 0 | 0.0 | 243 | 23.8 | 162 | 15.9 | 234 | 23.0 |
| Kuantan | 464 | 11 | 2.4 | 0 | 0.0 | 399 | 86.0 | 1 | 0.2 | 0 | 0.0 | 49 | 10.6 | 0 | 0.0 | 1 | 0.2 |
| Klang | 1,251 | 50 | 4.0 | 0 | 0.0 | 58 | 4.6 | 1 | 0.1 | 0 | 0.0 | 1,138 | 91.0 | 1 | 0.1 | 33 | 2.6 |
| Seremban | 1,521 | 0 | 0.0 | 8 | 0.5 | 240 | 15.8 | 165 | 10.8 | 0 | 0.0 | 1156 | 76.0 | 79 | 5.2 | 126 | 8.3 |
| Kuching | 1,975 | 57 | 2.9 | 15 | 0.8 | 59 | 3.0 | 4 | 0.2 | 0 | 0.0 | 1,855 | 93.9 | 34 | 1.7 | 103 | 5.2 |
| Kemaman | 71 | 0 | 0.0 | 0 | 0.0 | 24 | 33.8 | 1 | 1.4 | 0 | 0.0 | 52 | 73.2 | 1 | 1.4 | 10 | 14.1 |
| Sarikei | 552 | 0 | 0.0 | 0 | 0.0 | 5 | 0.9 | 0 | 0.0 | 0 | 0.0 | 546 | 98.9 | 0 | 0.0 | 2 | 0.4 |
| Kulim | 261 | 1 | 0.4 | 0 | 0.0 | 14 | 5.4 | 0 | 0.0 | 0 | 0.0 | 189 | 72.4 | 205 | 78.5 | 148 | 56.7 |
| KK1M Terengganu | 35 | 0 | 0.0 | 0 | 0.0 | 10 | 28.6 | 0 | 0.0 | 0 | 0.0 | 28 | 80.0 | 0 | 0.0 | 3 | 8.6 |
| KK1M Kelantan | 183 | 0 | 0.0 | 0 | 0.0 | 138 | 75.4 | 2 | 1.1 | 0 | 0.0 | 33 | 18.0 | 5 | 2.7 | 0 | 0.0 |
| KK1M Sarawak | 824 | 0 | 0.0 | 0 | 0.0 | 5 | 0.6 | 0 | 0.0 | 0 | 0.0 | 818 | 99.3 | 0 | 0.0 | 3 | 0.4 |
| MAIWP | 2,266 | 6 | 0.3 | 0 | 0.0 | 123 | 5.4 | 12 | 0.5 | 0 | 0.0 | 2,171 | 95.8 | 494 | 21.8 | 584 | 25.8 |

Table 1.3.7-6: Types of Local Anaesthesia by SDP (50 years and above), CSR 2014

| | Local Anaesthesia | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | Retrobulbar | | Peribulbar | | Subtenon | | Sub-conjunctival | | Facial block | | Topical | | Intracameral | | Combined | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 36,107 | 382 | 1.1 | 441 | 1.2 | 8,938 | 24.8 | 1,295 | 3.6 | 13 | 0.0 | 24,071 | 66.7 | 6,089 | 16.9 | 5,700 | 15.8 |
| Alor Setar | 1,728 | 69 | 4.0 | 4 | 0.2 | 373 | 21.6 | 3 | 0.2 | 0 | 0.0 | 1064 | 61.6 | 628 | 36.3 | 417 | 24.1 |
| Ampang | 879 | 0 | 0.0 | 0 | 0.0 | 121 | 13.8 | 4 | 0.5 | 0 | 0.0 | 801 | 91.1 | 775 | 88.2 | 803 | 91.4 |
| Batu Pahat | 439 | 5 | 1.1 | 7 | 1.6 | 285 | 64.9 | 143 | 32.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Bintulu | 341 | 0 | 0.0 | 0 | 0.0 | 341 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bukit Mertajam | 929 | 0 | 0.0 | 1 | 0.1 | 269 | 29.0 | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 | 656 | 70.6 | 4 | 0.4 |
| Sandakan | 215 | 0 | 0.0 | 0 | 0.0 | 6 | 2.8 | 0 | 0.0 | 0 | 0.0 | 207 | 96.3 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 2,163 | 18 | 0.8 | 2 | 0.1 | 192 | 8.9 | 188 | 8.7 | 4 | 0.2 | 2,104 | 97.3 | 937 | 43.3 | 1,123 | 51.9 |
| Kangar | 399 | 1 | 0.3 | 0 | 0.0 | 395 | 99.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 125 | 1 | 0.8 | 32 | 25.6 | 20 | 16.0 | 0 | 0.0 | 1 | 0.8 | 73 | 58.4 | 0 | 0.0 | 2 | 1.6 |
| Kota Bharu | 254 | 0 | 0.0 | 0 | 0.0 | 252 | 99.2 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 348 | 1 | 0.3 | 0 | 0.0 | 239 | 68.7 | 3 | 0.9 | 0 | 0.0 | 157 | 45.1 | 1 | 0.3 | 55 | 15.8 |
| Kuala Lumpur | 1,668 | 20 | 1.2 | 310 | 18.6 | 737 | 44.2 | 10 | 0.6 | 1 | 0.1 | 494 | 29.6 | 382 | 22.9 | 319 | 19.1 |
| Kuala Pilah | 449 | 0 | 0.0 | 0 | 0.0 | 294 | 65.5 | 1 | 0.2 | 0 | 0.0 | 101 | 22.5 | 0 | 0.0 | 10 | 2.2 |
| Kuala Terengganu | 795 | 0 | 0.0 | 0 | 0.0 | 197 | 24.8 | 5 | 0.6 | 0 | 0.0 | 615 | 77.4 | 10 | 1.3 | 40 | 5.0 |
| Melaka | 1,989 | 3 | 0.2 | 2 | 0.1 | 118 | 5.9 | 0 | 0.0 | 0 | 0.0 | 1,940 | 97.5 | 2 | 0.1 | 81 | 4.1 |
| Miri | 906 | 1 | 0.1 | 0 | 0.0 | 348 | 38.4 | 1 | 0.1 | 0 | 0.0 | 600 | 66.2 | 0 | 0.0 | 48 | 5.3 |
| Muar | 667 | 0 | 0.0 | 0 | 0.0 | 51 | 7.6 | 2 | 0.3 | 5 | 0.7 | 618 | 92.7 | 240 | 36.0 | 246 | 36.9 |
| Pulau Pinang | 1,682 | 85 | 5.1 | 8 | 0.5 | 113 | 6.7 | 2 | 0.1 | 0 | 0.0 | 1,518 | 90.2 | 19 | 1.1 | 81 | 4.8 |
| Putrajaya | 340 | 0 | 0.0 | 0 | 0.0 | 74 | 21.8 | 1 | 0.3 | 0 | 0.0 | 4 | 1.2 | 278 | 81.8 | 17 | 5.0 |
| Kota Kinabalu | 912 | 2 | 0.2 | 16 | 1.8 | 235 | 25.8 | 1 | 0.1 | 0 | 0.0 | 754 | 82.7 | 6 | 0.7 | 109 | 12.0 |
| Selayang | 721 | 39 | 5.4 | 8 | 1.1 | 116 | 16.1 | 1 | 0.1 | 0 | 0.0 | 568 | 78.8 | 109 | 15.1 | 131 | 18.2 |
| Serdang | 1122 | 0 | 0.0 | 1 | 0.1 | 345 | 30.7 | 1 | 0.1 | 0 | 0.0 | 723 | 64.4 | 434 | 38.7 | 400 | 35.7 |
| Sibu | 811 | 0 | 0.0 | 0 | 0.0 | 21 | 2.6 | 0 | 0.0 | 0 | 0.0 | 801 | 98.8 | 0 | 0.0 | 13 | 1.6 |
| Sri Manjung | 591 | 0 | 0.0 | 0 | 0.0 | 4 | 0.7 | 0 | 0.0 | 0 | 0.0 | 581 | 98.3 | 1 | 0.2 | 2 | 0.3 |
| Sultan Ismail | 467 | 0 | 0.0 | 0 | 0.0 | 153 | 32.8 | 303 | 64.9 | 0 | 0.0 | 89 | 19.1 | 1 | 0.2 | 79 | 16.9 |
| Johor Bahru | 1,269 | 13 | 1.0 | 0 | 0.0 | 254 | 20.0 | 378 | 29.8 | 1 | 0.1 | 414 | 32.6 | 532 | 41.9 | 318 | 25.1 |
| Sungai Buloh | 552 | 3 | 0.5 | 0 | 0.0 | 146 | 26.4 | 55 | 10.0 | 0 | 0.0 | 181 | 32.8 | 128 | 23.2 | 75 | 13.6 |
| Sungei Petani | 835 | 0 | 0.0 | 0 | 0.0 | 212 | 25.4 | 2 | 0.2 | 0 | 0.0 | 712 | 85.3 | 0 | 0.0 | 92 | 11.0 |
| Taiping | 1,050 | 0 | 0.0 | 0 | 0.0 | 182 | 17.3 | 0 | 0.0 | 0 | 0.0 | 879 | 83.7 | 0 | 0.0 | 12 | 1.1 |
| Tawau | 487 | 0 | 0.0 | 0 | 0.0 | 377 | 77.4 | 5 | 1.0 | 0 | 0.0 | 102 | 20.9 | 0 | 0.0 | 2 | 0.4 |
| Teluk Intan | 973 | 1 | 0.1 | 0 | 0.0 | 964 | 99.1 | 0 | 0.0 | 0 | 0.0 | 31 | 3.2 | 0 | 0.0 | 30 | 3.1 |
| Temerloh | 989 | 11 | 1.1 | 31 | 3.1 | 478 | 48.3 | 7 | 0.7 | 0 | 0.0 | 238 | 24.1 | 158 | 16.0 | 228 | 23.1 |
| Kuantan | 447 | 11 | 2.5 | 0 | 0.0 | 386 | 86.4 | 1 | 0.2 | 0 | 0.0 | 45 | 10.1 | 0 | 0.0 | 1 | 0.2 |
| Klang | 1,192 | 46 | 3.9 | 0 | 0.0 | 54 | 4.5 | 1 | 0.1 | 0 | 0.0 | 1,084 | 90.9 | 1 | 0.1 | 30 | 2.5 |
| Seremban | 1,460 | 0 | 0.0 | 8 | 0.5 | 234 | 16.0 | 159 | 10.9 | 0 | 0.0 | 1103 | 75.5 | 78 | 5.3 | 121 | 8.3 |
| Kuching | 1,875 | 46 | 2.5 | 11 | 0.6 | 52 | 2.8 | 3 | 0.2 | 0 | 0.0 | 1,770 | 94.4 | 31 | 1.7 | 91 | 4.9 |
| Kemaman | 66 | 0 | 0.0 | 0 | 0.0 | 21 | 31.8 | 0 | 0.0 | 0 | 0.0 | 49 | 74.2 | 1 | 1.5 | 8 | 12.1 |
| Sarikei | 542 | 0 | 0.0 | 0 | 0.0 | 5 | 0.9 | 0 | 0.0 | 0 | 0.0 | 536 | 98.9 | 0 | 0.0 | 2 | 0.4 |
| Kulim | 250 | 1 | 0.4 | 0 | 0.0 | 14 | 5.6 | 0 | 0.0 | 0 | 0.0 | 179 | 71.6 | 197 | 78.8 | 141 | 56.4 |
| KK1M Terengganu | 35 | 0 | 0.0 | 0 | 0.0 | 10 | 28.6 | 0 | 0.0 | 0 | 0.0 | 28 | 80.0 | 0 | 0.0 | 3 | 8.6 |
| KK1M Kelantan | 177 | 0 | 0.0 | 0 | 0.0 | 133 | 75.1 | 2 | 1.1 | 0 | 0.0 | 33 | 18.6 | 5 | 2.8 | 0 | 0.0 |
| KK1M Sarawak | 799 | 0 | 0.0 | 0 | 0.0 | 5 | 0.6 | 0 | 0.0 | 0 | 0.0 | 794 | 99.4 | 0 | 0.0 | 3 | 0.4 |
| MAIWP | 2,169 | 5 | 0.2 | 0 | 0.0 | 112 | 5.2 | 12 | 0.6 | 0 | 0.0 | 2,080 | 95.9 | 479 | 22.1 | 562 | 25.9 |

Table 1.3.7-7: Types of Local Anaesthesia by SDP (Excluding Combined Surgery), CSR 2014

| | Local Anesthesia | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | Retrobulbar | | Peribulbar | | Subtenon | | Sub-conjunctival | | Facial block | | Topical | | Intracameral | | Combined | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 36,919 | 171 | 0.5 | 441 | 1.2 | 9,091 | 24.6 | 1,334 | 3.6 | 14 | 0.0 | 24,801 | 67.2 | 6,262 | 17.0 | 5,792 | 15.7 |
| Alor Setar | 1,679 | 8 | 0.5 | 1 | 0.1 | 357 | 21.3 | 2 | 0.1 | 0 | 0.0 | 1,081 | 64.4 | 643 | 38.3 | 415 | 24.7 |
| Ampang | 887 | 0 | 0.0 | 1 | 0.1 | 108 | 12.2 | 4 | 0.5 | 0 | 0.0 | 814 | 91.8 | 791 | 89.2 | 816 | 92.0 |
| Batu Pahat | 446 | 5 | 1.1 | 7 | 1.6 | 288 | 64.6 | 147 | 33.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Bintulu | 345 | 0 | 0.0 | 0 | 0.0 | 345 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bukit Mertajam | 961 | 0 | 0.0 | 1 | 0.1 | 280 | 29.1 | 0 | 0.0 | 1 | 0.1 | 2 | 0.2 | 676 | 70.3 | 4 | 0.4 |
| Sandakan | 233 | 0 | 0.0 | 0 | 0.0 | 7 | 3.0 | 0 | 0.0 | 0 | 0.0 | 225 | 96.6 | 0 | 0.0 | 1 | 0.4 |
| Ipoh | 2,205 | 7 | 0.3 | 0 | 0.0 | 198 | 9.0 | 196 | 8.9 | 4 | 0.2 | 2,148 | 97.4 | 957 | 43.4 | 1,142 | 51.8 |
| Kangar | 415 | 1 | 0.2 | 0 | 0.0 | 411 | 99.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 129 | 1 | 0.8 | 35 | 27.1 | 20 | 15.5 | 0 | 0.0 | 1 | 0.8 | 74 | 57.4 | 0 | 0.0 | 2 | 1.6 |
| Kota Bharu | 269 | 0 | 0.0 | 0 | 0.0 | 267 | 99.3 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 348 | 1 | 0.3 | 0 | 0.0 | 240 | 69.0 | 2 | 0.6 | 0 | 0.0 | 160 | 46.0 | 1 | 0.3 | 57 | 16.4 |
| Kuala Lumpur | 1,713 | 21 | 1.2 | 324 | 18.9 | 754 | 44.0 | 11 | 0.6 | 1 | 0.1 | 502 | 29.3 | 394 | 23.0 | 327 | 19.1 |
| Kuala Pilah | 453 | 0 | 0.0 | 0 | 0.0 | 296 | 65.3 | 1 | 0.2 | 0 | 0.0 | 102 | 22.5 | 0 | 0.0 | 9 | 2.0 |
| Kuala Terengganu | 793 | 0 | 0.0 | 0 | 0.0 | 178 | 22.4 | 3 | 0.4 | 0 | 0.0 | 629 | 79.3 | 10 | 1.3 | 34 | 4.3 |
| Melaka | 2,035 | 1 | 0.0 | 1 | 0.0 | 111 | 5.5 | 0 | 0.0 | 0 | 0.0 | 1,992 | 97.9 | 2 | 0.1 | 78 | 3.8 |
| Miri | 942 | 1 | 0.1 | 0 | 0.0 | 360 | 38.2 | 1 | 0.1 | 0 | 0.0 | 624 | 66.2 | 0 | 0.0 | 49 | 5.2 |
| Muar | 692 | 0 | 0.0 | 0 | 0.0 | 50 | 7.2 | 2 | 0.3 | 5 | 0.7 | 642 | 92.8 | 247 | 35.7 | 251 | 36.3 |
| Pulau Pinang | 1,650 | 9 | 0.5 | 8 | 0.5 | 113 | 6.8 | 2 | 0.1 | 0 | 0.0 | 1,549 | 93.9 | 19 | 1.2 | 68 | 4.1 |
| Putrajaya | 350 | 0 | 0.0 | 0 | 0.0 | 74 | 21.1 | 1 | 0.3 | 0 | 0.0 | 4 | 1.1 | 288 | 82.3 | 17 | 4.9 |
| Kota Kinabalu | 945 | 1 | 0.1 | 16 | 1.7 | 240 | 25.4 | 1 | 0.1 | 0 | 0.0 | 789 | 83.5 | 5 | 0.5 | 114 | 12.1 |
| Selayang | 727 | 20 | 2.8 | 5 | 0.7 | 126 | 17.3 | 0 | 0.0 | 0 | 0.0 | 580 | 79.8 | 116 | 16.0 | 131 | 18.0 |
| Serdang | 1,155 | 0 | 0.0 | 1 | 0.1 | 357 | 30.9 | 1 | 0.1 | 0 | 0.0 | 743 | 64.3 | 446 | 38.6 | 411 | 35.6 |
| Sibu | 845 | 0 | 0.0 | 0 | 0.0 | 19 | 2.2 | 0 | 0.0 | 0 | 0.0 | 836 | 98.9 | 0 | 0.0 | 12 | 1.4 |
| Sri Manjung | 590 | 0 | 0.0 | 0 | 0.0 | 4 | 0.7 | 0 | 0.0 | 0 | 0.0 | 580 | 98.3 | 1 | 0.2 | 2 | 0.3 |
| Sultan Ismail | 476 | 0 | 0.0 | 0 | 0.0 | 155 | 32.6 | 309 | 64.9 | 0 | 0.0 | 92 | 19.3 | 1 | 0.2 | 81 | 17.0 |
| Johor Bahru | 1,323 | 9 | 0.7 | 0 | 0.0 | 268 | 20.3 | 397 | 30.0 | 1 | 0.1 | 436 | 33.0 | 549 | 41.5 | 334 | 25.2 |
| Sungai Buloh | 591 | 3 | 0.5 | 1 | 0.2 | 157 | 26.6 | 56 | 9.5 | 0 | 0.0 | 193 | 32.7 | 140 | 23.7 | 80 | 13.5 |
| Sungei Petani | 876 | 0 | 0.0 | 0 | 0.0 | 217 | 24.8 | 2 | 0.2 | 0 | 0.0 | 750 | 85.6 | 0 | 0.0 | 94 | 10.7 |
| Taiping | 1,063 | 0 | 0.0 | 0 | 0.0 | 177 | 16.7 | 0 | 0.0 | 0 | 0.0 | 898 | 84.5 | 0 | 0.0 | 13 | 1.2 |
| Tawau | 504 | 0 | 0.0 | 0 | 0.0 | 387 | 76.8 | 5 | 1.0 | 0 | 0.0 | 110 | 21.8 | 0 | 0.0 | 2 | 0.4 |
| Teluk Intan | 995 | 1 | 0.1 | 0 | 0.0 | 986 | 99.1 | 0 | 0.0 | 1 | 0.1 | 33 | 3.3 | 0 | 0.0 | 33 | 3.3 |
| Temerloh | 1,013 | 12 | 1.2 | 32 | 3.2 | 487 | 48.1 | 7 | 0.7 | 0 | 0.0 | 240 | 23.7 | 161 | 15.9 | 231 | 22.8 |
| Kuantan | 464 | 11 | 2.4 | 0 | 0.0 | 399 | 86.0 | 1 | 0.2 | 0 | 0.0 | 49 | 10.6 | 0 | 0.0 | 1 | 0.2 |
| Klang | 1,245 | 50 | 4.0 | 0 | 0.0 | 57 | 4.6 | 1 | 0.1 | 0 | 0.0 | 1,133 | 91.0 | 1 | 0.1 | 33 | 2.7 |
| Seremban | 1,505 | 0 | 0.0 | 7 | 0.5 | 230 | 15.3 | 163 | 10.8 | 0 | 0.0 | 1,151 | 76.5 | 79 | 5.2 | 124 | 8.2 |
| Kuching | 1,875 | 2 | 0.1 | 1 | 0.1 | 52 | 2.8 | 3 | 0.2 | 0 | 0.0 | 1,812 | 96.6 | 33 | 1.8 | 79 | 4.2 |
| Kemaman | 71 | 0 | 0.0 | 0 | 0.0 | 24 | 33.8 | 1 | 1.4 | 0 | 0.0 | 52 | 73.2 | 1 | 1.4 | 10 | 14.1 |
| Sarikei | 552 | 0 | 0.0 | 0 | 0.0 | 5 | 0.9 | 0 | 0.0 | 0 | 0.0 | 546 | 98.9 | 0 | 0.0 | 2 | 0.4 |
| Kulim | 256 | 1 | 0.4 | 0 | 0.0 | 12 | 4.7 | 0 | 0.0 | 0 | 0.0 | 184 | 71.9 | 202 | 78.9 | 144 | 56.3 |
| KK1M Terengganu | 34 | 0 | 0.0 | 0 | 0.0 | 10 | 29.4 | 0 | 0.0 | 0 | 0.0 | 27 | 79.4 | 0 | 0.0 | 3 | 8.8 |
| KK1M Kelantan | 183 | 0 | 0.0 | 0 | 0.0 | 138 | 75.4 | 2 | 1.1 | 0 | 0.0 | 33 | 18.0 | 5 | 2.7 | 0 | 0.0 |
| KK1M Sarawak | 821 | 0 | 0.0 | 0 | 0.0 | 5 | 0.6 | 0 | 0.0 | 0 | 0.0 | 815 | 99.3 | 0 | 0.0 | 3 | 0.4 |
| MAIWP | 2,265 | 6 | 0.3 | 0 | 0.0 | 122 | 5.4 | 12 | 0.5 | 0 | 0.0 | 2,171 | 95.8 | 494 | 21.8 | 584 | 25.8 |

Table 1.3.7-8: Types of Local Anaesthesia by SDP (50 years and above, Excluding Combined Surgery), CSR 2014

| | Local Anesthesia | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | Retrobulbar | | Peribulbar | | Subtenon | | Sub-conjunctival | | Facial block | | Topical | | Intracameral | | Combined | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 35,447 | 153 | 0.4 | 415 | 1.2 | 8,703 | 24.6 | 1,278 | 3.6 | 13 | 0.0 | 23,827 | 67.2 | 6,043 | 17.0 | 5,557 | 15.7 |
| Alor Setar | 1,625 | 8 | 0.5 | 1 | 0.1 | 351 | 21.6 | 2 | 0.1 | 0 | 0.0 | 1,041 | 64.1 | 617 | 38.0 | 397 | 24.4 |
| Ampang | 858 | 0 | 0.0 | 0 | 0.0 | 104 | 12.1 | 4 | 0.5 | 0 | 0.0 | 788 | 91.8 | 766 | 89.3 | 790 | 92.1 |
| Batu Pahat | 433 | 5 | 1.2 | 7 | 1.6 | 280 | 64.7 | 142 | 32.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Bintulu | 313 | 0 | 0.0 | 0 | 0.0 | 313 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bukit Mertajam | 924 | 0 | 0.0 | 1 | 0.1 | 266 | 28.8 | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 | 654 | 70.8 | 4 | 0.4 |
| Sandakan | 215 | 0 | 0.0 | 0 | 0.0 | 6 | 2.8 | 0 | 0.0 | 0 | 0.0 | 207 | 96.3 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 2,143 | 7 | 0.3 | 0 | 0.0 | 192 | 9.0 | 187 | 8.7 | 4 | 0.2 | 2,089 | 97.5 | 933 | 43.5 | 1,112 | 51.9 |
| Kangar | 396 | 1 | 0.3 | 0 | 0.0 | 392 | 99.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 125 | 1 | 0.8 | 32 | 25.6 | 20 | 16.0 | 0 | 0.0 | 1 | 0.8 | 73 | 58.4 | 0 | 0.0 | 2 | 1.6 |
| Kota Bharu | 250 | 0 | 0.0 | 0 | 0.0 | 248 | 99.2 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 338 | 1 | 0.3 | 0 | 0.0 | 231 | 68.3 | 2 | 0.6 | 0 | 0.0 | 156 | 46.2 | 1 | 0.3 | 54 | 16.0 |
| Kuala Lumpur | 1,651 | 20 | 1.2 | 306 | 18.5 | 731 | 44.3 | 10 | 0.6 | 1 | 0.1 | 488 | 29.6 | 379 | 23.0 | 317 | 19.2 |
| Kuala Pilah | 443 | 0 | 0.0 | 0 | 0.0 | 288 | 65.0 | 1 | 0.2 | 0 | 0.0 | 100 | 22.6 | 0 | 0.0 | 9 | 2.0 |
| Kuala Terengganu | 754 | 0 | 0.0 | 0 | 0.0 | 172 | 22.8 | 3 | 0.4 | 0 | 0.0 | 595 | 78.9 | 10 | 1.3 | 33 | 4.4 |
| Melaka | 1,968 | 1 | 0.1 | 1 | 0.1 | 108 | 5.5 | 0 | 0.0 | 0 | 0.0 | 1,927 | 97.9 | 2 | 0.1 | 76 | 3.9 |
| Miri | 901 | 1 | 0.1 | 0 | 0.0 | 344 | 38.2 | 1 | 0.1 | 0 | 0.0 | 597 | 66.3 | 0 | 0.0 | 46 | 5.1 |
| Muar | 664 | 0 | 0.0 | 0 | 0.0 | 48 | 7.2 | 2 | 0.3 | 5 | 0.8 | 616 | 92.8 | 240 | 36.1 | 244 | 36.7 |
| Pulau Pinang | 1,591 | 8 | 0.5 | 8 | 0.5 | 105 | 6.6 | 2 | 0.1 | 0 | 0.0 | 1,497 | 94.1 | 19 | 1.2 | 66 | 4.1 |
| Putrajaya | 339 | 0 | 0.0 | 0 | 0.0 | 73 | 21.5 | 1 | 0.3 | 0 | 0.0 | 4 | 1.2 | 278 | 82.0 | 17 | 5.0 |
| Kota Kinabalu | 902 | 1 | 0.1 | 16 | 1.8 | 229 | 25.4 | 1 | 0.1 | 0 | 0.0 | 749 | 83.0 | 5 | 0.6 | 106 | 11.8 |
| Selayang | 677 | 13 | 1.9 | 4 | 0.6 | 112 | 16.5 | 0 | 0.0 | 0 | 0.0 | 552 | 81.5 | 108 | 16.0 | 119 | 17.6 |
| Serdang | 1,109 | 0 | 0.0 | 1 | 0.1 | 340 | 30.7 | 1 | 0.1 | 0 | 0.0 | 714 | 64.4 | 428 | 38.6 | 393 | 35.4 |
| Sibu | 803 | 0 | 0.0 | 0 | 0.0 | 18 | 2.2 | 0 | 0.0 | 0 | 0.0 | 794 | 98.9 | 0 | 0.0 | 11 | 1.4 |
| Sri Manjung | 584 | 0 | 0.0 | 0 | 0.0 | 4 | 0.7 | 0 | 0.0 | 0 | 0.0 | 574 | 98.3 | 1 | 0.2 | 2 | 0.3 |
| Sultan Ismail | 460 | 0 | 0.0 | 0 | 0.0 | 150 | 32.6 | 299 | 65.0 | 0 | 0.0 | 86 | 18.7 | 1 | 0.2 | 76 | 16.5 |
| Johor Bahru | 1,250 | 7 | 0.6 | 0 | 0.0 | 247 | 19.8 | 375 | 30.0 | 1 | 0.1 | 410 | 32.8 | 527 | 42.2 | 313 | 25.0 |
| Sungai Buloh | 551 | 3 | 0.5 | 0 | 0.0 | 145 | 26.3 | 55 | 10.0 | 0 | 0.0 | 181 | 32.8 | 128 | 23.2 | 75 | 13.6 |
| Sungei Petani | 830 | 0 | 0.0 | 0 | 0.0 | 211 | 25.4 | 2 | 0.2 | 0 | 0.0 | 707 | 85.2 | 0 | 0.0 | 91 | 11.0 |
| Taiping | 1,031 | 0 | 0.0 | 0 | 0.0 | 170 | 16.5 | 0 | 0.0 | 0 | 0.0 | 871 | 84.5 | 0 | 0.0 | 11 | 1.1 |
| Tawau | 466 | 0 | 0.0 | 0 | 0.0 | 359 | 77.0 | 5 | 1.1 | 0 | 0.0 | 100 | 21.5 | 0 | 0.0 | 2 | 0.4 |
| Teluk Intan | 973 | 1 | 0.1 | 0 | 0.0 | 964 | 99.1 | 0 | 0.0 | 0 | 0.0 | 31 | 3.2 | 0 | 0.0 | 30 | 3.1 |
| Temerloh | 983 | 11 | 1.1 | 31 | 3.2 | 474 | 48.2 | 7 | 0.7 | 0 | 0.0 | 235 | 23.9 | 157 | 16.0 | 225 | 22.9 |
| Kuantan | 447 | 11 | 2.5 | 0 | 0.0 | 386 | 86.4 | 1 | 0.2 | 0 | 0.0 | 45 | 10.1 | 0 | 0.0 | 1 | 0.2 |
| Klang | 1,186 | 46 | 3.9 | 0 | 0.0 | 53 | 4.5 | 1 | 0.1 | 0 | 0.0 | 1,079 | 91.0 | 1 | 0.1 | 30 | 2.5 |
| Seremban | 1,447 | 0 | 0.0 | 7 | 0.5 | 226 | 15.6 | 157 | 10.9 | 0 | 0.0 | 1,100 | 76.0 | 78 | 5.4 | 120 | 8.3 |
| Kuching | 1,789 | 1 | 0.1 | 0 | 0.0 | 46 | 2.6 | 2 | 0.1 | 0 | 0.0 | 1,730 | 96.7 | 31 | 1.7 | 69 | 3.9 |
| Kemaman | 66 | 0 | 0.0 | 0 | 0.0 | 21 | 31.8 | 0 | 0.0 | 0 | 0.0 | 49 | 74.2 | 1 | 1.5 | 8 | 12.1 |
| Sarikei | 542 | 0 | 0.0 | 0 | 0.0 | 5 | 0.9 | 0 | 0.0 | 0 | 0.0 | 536 | 98.9 | 0 | 0.0 | 2 | 0.4 |
| Kulim | 245 | 1 | 0.4 | 0 | 0.0 | 12 | 4.9 | 0 | 0.0 | 0 | 0.0 | 174 | 71.0 | 194 | 79.2 | 137 | 55.9 |
| KK1M Terengganu | 34 | 0 | 0.0 | 0 | 0.0 | 10 | 29.4 | 0 | 0.0 | 0 | 0.0 | 27 | 79.4 | 0 | 0.0 | 3 | 8.8 |
| KK1M Kelantan | 177 | 0 | 0.0 | 0 | 0.0 | 133 | 75.1 | 2 | 1.1 | 0 | 0.0 | 33 | 18.6 | 5 | 2.8 | 0 | 0.0 |
| KK1M Sarawak | 796 | 0 | 0.0 | 0 | 0.0 | 5 | 0.6 | 0 | 0.0 | 0 | 0.0 | 791 | 99.4 | 0 | 0.0 | 3 | 0.4 |
| MAIWP | 2,168 | 5 | 0.2 | 0 | 0.0 | 111 | 5.1 | 12 | 0.6 | 0 | 0.0 | 2,080 | 95.9 | 479 | 22.1 | 562 | 25.9 |

Table 1.3.7-9: Subtenon Anaesthesia by SDP, CSR 2007-2014

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 9990 | 58.3 | 11014 | 54.6 | 11525 | 50.6 | 10952 | 41.4 | 10512 | 36.7 | 9849 | 32.6 | 9,913 | 28.6 | 9,351 | 24.8 |
| Alor Setar | 35 | 9.5 | 109 | 12.1 | 239 | 25.3 | 274 | 20.7 | 323 | 18.8 | 426 | 26.5 | 600 | 40.8 | 379 | 21.1 |
| Ampang | 3 | 75.0 | 162 | 78.3 | 110 | 27.1 | 70 | 11.5 | 27 | 3.8 | 58 | 6.7 | 117 | 12.4 | 125 | 13.8 |
| Batu Pahat | 545 | 99.6 | 567 | 99.5 | 562 | 94.8 | 280 | 69.5 | 156 | 29.1 | 161 | 27.4 | 166 | 39.8 | 293 | 64.8 |
| Bintulu | - | - | 24 | 0.0 | 118 | 99.2 | 255 | 99.6 | 328 | 100.0 | 382 | 100.0 | 374 | 98.9 | 374 | 100.0 |
| Bukit Mertajam | 422 | 69.5 | 294 | 64.1 | 239 | 32.7 | 399 | 50.8 | 423 | 54.3 | 384 | 42.7 | 275 | 31.0 | 283 | 29.3 |
| Sandakan | NA | NA | 0 | 0.0 | 86 | 57.7 | 116 | 61.4 | 140 | 55.6 | 113 | 45.0 | 24 | 6.0 | 7 | 3.0 |
| Ipoh | 702 | 47.1 | 921 | 56.2 | 872 | 43.5 | 567 | 27.3 | 387 | 23.5 | 517 | 19.6 | 448 | 16.8 | 198 | 8.9 |
| Kangar | 313 | 98.4 | 389 | 98.5 | 383 | 98.5 | 383 | 98.7 | 397 | 100.0 | 442 | 99.1 | 457 | 98.5 | 414 | 99.0 |
| Keningau | - | - | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 7.1 | 20 | 15.5 |
| Kota Bharu | 726 | 99.2 | 672 | 99.3 | 837 | 98.0 | 885 | 97.6 | 884 | 99.0 | 495 | 97.6 | 629 | 98.6 | 273 | 99.3 |
| Kuala Krai | 115 | 100.0 | 142 | 86.6 | 169 | 98.8 | 203 | 95.8 | 222 | 94.9 | 243 | 99.6 | 388 | 100.0 | 248 | 69.3 |
| Kuala Lumpur | NA | NA | 27 | 73.0 | 620 | 50.7 | 800 | 56.7 | 829 | 60.7 | 601 | 46.8 | 310 | 31.0 | 761 | 43.9 |
| Kuala Pilah | 208 | 99.5 | 270 | 97.8 | 252 | 89.7 | 237 | 79.5 | 371 | 79.6 | 304 | 72.6 | 208 | 44.1 | 303 | 65.9 |
| Kuala Terengganu | 419 | 85.2 | 590 | 84.8 | 417 | 59.7 | 267 | 39.8 | 274 | 38.1 | 291 | 40.6 | 215 | 22.7 | 207 | 24.7 |
| Melaka | 443 | 30.1 | 463 | 28.9 | 376 | 28.5 | 310 | 19.5 | 211 | 13.4 | 128 | 9.0 | 223 | 13.7 | 123 | 6.0 |
| Miri | 1 | 6.3 | 352 | 90.0 | 187 | 46.9 | 90 | 15.7 | 161 | 24.9 | 60 | 6.8 | 24 | 2.7 | 364 | 38.4 |
| Muar | 166 | 49.7 | 326 | 98.5 | 528 | 99.2 | 460 | 77.7 | 104 | 15.8 | 54 | 8.3 | 37 | 5.4 | 53 | 7.6 |
| Pulau Pinang | 967 | 97.6 | 687 | 54.5 | 474 | 37.3 | 328 | 18.5 | 76 | 3.5 | 56 | 4.4 | 165 | 10.0 | 122 | 7.0 |
| Putrajaya | 188 | 98.9 | 236 | 99.6 | 240 | 99.2 | 260 | 100.0 | 240 | 80.3 | 125 | 37.4 | 100 | 27.0 | 77 | 21.8 |
| Kota Kinabalu | 195 | 39.2 | 81 | 24.1 | 82 | 20.3 | 115 | 22.0 | 91 | 14.0 | 142 | 19.9 | 206 | 22.3 | 248 | 25.9 |
| Selayang | 152 | 11.1 | 174 | 12.7 | 190 | 13.9 | 249 | 15.1 | 211 | 11.8 | 323 | 18.4 | 260 | 19.9 | 131 | 16.8 |
| Serdang | 522 | 91.7 | 375 | 56.9 | 396 | 70.7 | 375 | 80.5 | 432 | 70.7 | 414 | 60.6 | 339 | 36.1 | 362 | 31.0 |
| Sibu | 33 | 9.6 | 96 | 38.9 | 155 | 40.4 | 26 | 5.8 | 37 | 7.4 | 10 | 1.3 | 11 | 1.2 | 22 | 2.6 |
| Sri Manjung | 136 | 92.5 | 133 | 38.7 | 28 | 8.6 | 35 | 9.2 | 47 | 11.4 | 32 | 7.2 | 9 | 1.1 | 4 | 0.7 |
| Sultan Ismail | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.5 | 15 | 5.3 | 159 | 32.9 |
| Johor Bahru | 1103 | 74.0 | 801 | 60.1 | 942 | 74.8 | 464 | 35.3 | 436 | 41.1 | 501 | 43.9 | 521 | 40.4 | 278 | 20.7 |
| Sungai Buloh | 98 | 80.3 | 221 | 90.2 | 325 | 99.4 | 374 | 91.2 | 319 | 79.4 | 292 | 67.4 | 373 | 77.9 | 158 | 26.7 |
| Sungei Petani | 472 | 99.0 | 591 | 98.2 | 646 | 99.2 | 235 | 44.9 | 180 | 23.3 | 236 | 29.3 | 229 | 26.1 | 218 | 24.7 |
| Taiping | 156 | 71.2 | 166 | 54.2 | 121 | 22.4 | 328 | 41.4 | 402 | 48.4 | 356 | 36.4 | 373 | 32.5 | 189 | 17.5 |
| Tawau | 195 | 100.0 | 303 | 98.4 | 287 | 99.7 | 382 | 99.5 | 553 | 100.0 | 615 | 99.2 | 380 | 78.8 | 406 | 77.2 |
| Teluk Intan | 190 | 28.6 | 406 | 72.0 | 397 | 66.4 | 386 | 58.2 | 472 | 73.2 | 586 | 99.2 | 1,063 | 98.9 | 986 | 99.1 |
| Temerloh | 390 | 94.4 | 429 | 83.1 | 425 | 67.8 | 410 | 96.7 | 611 | 94.0 | 586 | 69.9 | 403 | 47.5 | 491 | 48.2 |
| Kuantan | 9 | 47.4 | 162 | 54.9 | 143 | 63.8 | 358 | 78.9 | 456 | 77.2 | 345 | 63.3 | 366 | 76.3 | 399 | 86.0 |
| Klang | 468 | 57.1 | 297 | 27.3 | 178 | 24.1 | 326 | 38.5 | 67 | 7.2 | 62 | 5.0 | 45 | 3.3 | 58 | 4.6 |
| Seremban | 210 | 24.1 | 294 | 35.4 | 356 | 30.7 | 563 | 38.3 | 591 | 38.5 | 422 | 29.1 | 270 | 18.7 | 240 | 15.8 |
| Kuching | 404 | 42.7 | 254 | 26.3 | 145 | 17.1 | 142 | 12.5 | 54 | 4.9 | 86 | 5.4 | 56 | 3.4 | 59 | 3.0 |
| Kemaman | | | | | | | | | | | | | 8 | 17.4 | 24 | 33.8 |
| Sarikei | | | | | | | | | | | | | 2 | 0.7 | 5 | 0.9 |
| Kulim | | | | | | | | | | | | | - | - | 14 | 5.4 |
| KK1M Pahang | | | | | | | | | | | | | 51 | 79.7 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 10 | 28.6 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 138 | 75.4 |
| KK1M Sarawak | | | | | | | | | | | | | 1 | 1.3 | 5 | 0.6 |
| MAIWP | | | | | | | | | | | | | 171 | 10.8 | 123 | 5.4 |

Table 1.3.7-10: Subtenon Anaesthesia by SDP (50 years and above), CSR 2007-2014

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 9397 | 56.2 | 10354 | 54.7 | 10861 | 50.6 | 10338 | 41.4 | 9979 | 36.8 | 9340 | 32.6 | 9435 | 28.6 | 8938 | 24.8 |
| Alor Setar | 33 | 8.8 | 103 | 11.9 | 228 | 25.8 | 263 | 21.0 | 309 | 19.0 | 418 | 27.0 | 586 | 41.2 | 373 | 21.6 |
| Ampang | 2 | 66.7 | 150 | 77.7 | 103 | 26.8 | 66 | 11.3 | 27 | 4.0 | 56 | 6.7 | 114 | 12.7 | 121 | 13.8 |
| Batu Pahat | 511 | 99.2 | 534 | 99.4 | 537 | 94.5 | 269 | 70.6 | 152 | 29.4 | 157 | 27.8 | 163 | 40.2 | 285 | 64.9 |
| Bintulu | - | - | 22 | 88.0 | 106 | 99.1 | 230 | 100.0 | 303 | 100.0 | 356 | 100.0 | 342 | 99.4 | 341 | 100.0 |
| Bukit Mertajam | 402 | 65.2 | 279 | 64.1 | 224 | 32.4 | 372 | 50.7 | 408 | 54.9 | 358 | 42.2 | 265 | 31.5 | 269 | 29.0 |
| Sandakan | - | - | 0 | 0.0 | 80 | 58.8 | 110 | 61.5 | 134 | 55.8 | 107 | 46.1 | 23 | 6.2 | 6 | 2.8 |
| Ipoh | 663 | 46.0 | 881 | 55.9 | 838 | 43.4 | 550 | 27.6 | 378 | 23.6 | 500 | 19.7 | 430 | 16.8 | 192 | 8.9 |
| Kangar | 298 | 97.1 | 363 | 98.6 | 365 | 98.4 | 365 | 98.6 | 383 | 100.0 | 418 | 99.1 | 446 | 98.5 | 395 | 99.0 |
| Keningau | - | - | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 7.1 | 20 | 16.0 |
| Kota Bharu | 683 | 95.5 | 628 | 99.2 | 760 | 98.1 | 818 | 97.4 | 828 | 99.0 | 459 | 97.7 | 591 | 98.7 | 252 | 99.2 |
| Kuala Krai | 111 | 96.5 | 132 | 86.8 | 163 | 98.8 | 188 | 95.4 | 208 | 94.5 | 231 | 99.6 | 369 | 100.0 | 239 | 68.7 |
| Kuala Lumpur | - | - | 27 | 77.1 | 594 | 50.8 | 759 | 56.6 | 796 | 61.3 | 581 | 47.4 | 298 | 31.0 | 737 | 44.2 |
| Kuala Pilah | 197 | 98.5 | 251 | 98.0 | 240 | 89.6 | 228 | 79.7 | 355 | 79.2 | 292 | 72.5 | 195 | 43.1 | 294 | 65.5 |
| Kuala Terengganu | 390 | 82.5 | 557 | 84.7 | 392 | 59.7 | 251 | 40.1 | 261 | 38.1 | 273 | 40.6 | 198 | 22.0 | 197 | 24.8 |
| Melaka | 428 | 30.6 | 455 | 30.0 | 363 | 29.2 | 303 | 20.0 | 210 | 14.0 | 125 | 9.2 | 216 | 14.0 | 118 | 5.9 |
| Miri | 1 | 6.3 | 330 | 89.7 | 176 | 46.2 | 85 | 15.7 | 151 | 24.5 | 56 | 6.6 | 22 | 2.5 | 348 | 38.4 |
| Muar | 158 | 48.2 | 308 | 98.4 | 507 | 99.2 | 429 | 77.7 | 100 | 15.9 | 51 | 8.0 | 36 | 5.6 | 51 | 7.6 |
| Pulau Pinang | 929 | 91.5 | 668 | 54.6 | 462 | 37.4 | 320 | 18.7 | 74 | 3.6 | 53 | 4.2 | 153 | 9.6 | 113 | 6.7 |
| Putrajaya | 178 | 95.2 | 226 | 99.6 | 231 | 99.1 | 255 | 100.0 | 224 | 80.3 | 116 | 36.4 | 95 | 26.5 | 74 | 21.8 |
| Kota Kinabalu | 181 | 39.2 | 73 | 23.7 | 74 | 20.2 | 108 | 22.3 | 85 | 13.9 | 132 | 19.9 | 193 | 22.2 | 235 | 25.8 |
| Selayang | 132 | 10.6 | 165 | 13.5 | 178 | 14.4 | 227 | 15.1 | 191 | 11.8 | 300 | 18.5 | 244 | 20.2 | 116 | 16.1 |
| Serdang | 485 | 89.2 | 358 | 57.0 | 380 | 70.5 | 354 | 80.6 | 407 | 71.3 | 389 | 61.1 | 324 | 36.5 | 345 | 30.7 |
| Sibu | 32 | 9.3 | 89 | 39.0 | 145 | 40.6 | 23 | 5.5 | 33 | 7.1 | 10 | 1.4 | 10 | 1.2 | 21 | 2.6 |
| Sri Manjung | 128 | 90.1 | 123 | 38.9 | 27 | 8.7 | 34 | 9.2 | 44 | 11.2 | 31 | 7.2 | 9 | 1.2 | 4 | 0.7 |
| Sultan Ismail | 4 | 4.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.6 | 15 | 5.5 | 153 | 32.8 |
| Johor Bahru | 1025 | 72.9 | 724 | 59.5 | 846 | 74.7 | 427 | 35.1 | 403 | 41.3 | 468 | 45.1 | 478 | 40.2 | 254 | 20.0 |
| Sungai Buloh | 91 | 70.5 | 207 | 90.4 | 306 | 99.4 | 346 | 91.1 | 294 | 78.8 | 280 | 67.1 | 356 | 77.9 | 146 | 26.4 |
| Sungei Petani | 444 | 96.3 | 551 | 98.2 | 612 | 99.2 | 225 | 45.5 | 172 | 23.4 | 231 | 30.1 | 221 | 26.3 | 212 | 25.4 |
| Taiping | 148 | 58.3 | 158 | 53.6 | 117 | 22.5 | 313 | 41.3 | 385 | 48.7 | 349 | 36.8 | 367 | 33.1 | 182 | 17.3 |
| Tawau | 169 | 100.0 | 275 | 98.2 | 258 | 99.6 | 334 | 99.7 | 500 | 100.0 | 561 | 99.1 | 338 | 78.1 | 377 | 77.4 |
| Teluk Intan | 176 | 28.2 | 386 | 72.0 | 375 | 65.6 | 371 | 58.2 | 458 | 73.0 | 570 | 99.3 | 1,031 | 98.8 | 964 | 99.1 |
| Temerloh | 371 | 90.5 | 410 | 83.5 | 402 | 68.4 | 401 | 96.6 | 587 | 94.1 | 555 | 69.7 | 382 | 47.2 | 478 | 48.3 |
| Kuantan | 7 | 33.3 | 151 | 54.5 | 138 | 63.3 | 338 | 78.6 | 444 | 77.5 | 330 | 62.9 | 356 | 76.2 | 386 | 86.4 |
| Klang | 442 | 47.4 | 271 | 26.7 | 169 | 24.1 | 312 | 39.2 | 63 | 7.3 | 58 | 5.0 | 43 | 3.3 | 54 | 4.5 |
| Seremban | 199 | 22.7 | 272 | 34.6 | 336 | 30.7 | 529 | 37.9 | 562 | 38.2 | 392 | 28.4 | 258 | 18.5 | 234 | 16.0 |
| Kuching | 379 | 42.6 | 227 | 25.6 | 129 | 16.2 | 135 | 12.6 | 50 | 4.9 | 76 | 5.1 | 49 | 3.2 | 52 | 2.8 |
| Kemaman | | | | | | | | | | | | | 8 | 18.2 | 21 | 31.8 |
| Sarikei | | | | | | | | | | | | | 2 | 0.7 | 5 | 0.9 |
| Kulim | | | | | | | | | | | | | - | - | 14 | 5.6 |
| KK1M Pahang | | | | | | | | | | | | | 48 | 80.0 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 10 | 28.6 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 133 | 75.1 |
| KK1M Sarawak | | | | | | | | | | | | | 1 | 1.4 | 5 | 0.6 |
| MAIWP | | | | | | | | | | | | | 159 | 10.5 | 112 | 5.2 |

Table 1.3.7-11: Topical Anaesthesia by SDP, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 4853 | 28.3 | 6680 | 33.1 | 8382 | 36.8 | 13112 | 49.6 | 16825 | 58.8 | 18461 | 61.1 | 22220 | 64.2 | 25068 | 66.6 |
| Alor Setar | 1 | 0.3 | 95 | 10.6 | 124 | 13.1 | 676 | 51.2 | 876 | 51.0 | 922 | 57.4 | 547 | 37.2 | 1107 | 61.7 |
| Ampang | 3 | 75.0 | 64 | 30.9 | 248 | 61.1 | 500 | 81.8 | 674 | 95.9 | 807 | 92.7 | 908 | 96.3 | 827 | 91.1 |
| Batu Pahat | 1 | 0.2 | 0 | 0.0 | 25 | 4.2 | 85 | 21.1 | 355 | 66.2 | 184 | 31.3 | 15 | 3.6 | 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 |
| Bukit Mertajam | 0 | 0.0 | 2 | 0.4 | 62 | 8.5 | 0 | 0.0 | 1 | 0.1 | 8 | 0.9 | 0 | 0.0 | 2 | 0.2 |
| Sandakan | NA | NA | 12 | 9.2 | 34 | 22.8 | 86 | 45.5 | 83 | 32.9 | 92 | 36.7 | 367 | 91.5 | 225 | 96.6 |
| Ipoh | 573 | 38.5 | 594 | 36.2 | 1137 | 56.7 | 1521 | 73.3 | 1348 | 81.7 | 2167 | 82.1 | 2,417 | 90.8 | 2,163 | 97.2 |
| Kangar | 0 | 0.0 | 0 | 0.0 | 3 | 0.8 | 3 | 0.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | - | - | 28 | 93.3 | 21 | 91.3 | 2 | 2.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 74 | 57.4 |
| Kota Bharu | 0 | 0.0 | 1 | 0.1 | 12 | 1.4 | 22 | 2.4 | 7 | 0.8 | 8 | 1.6 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 0 | 0.0 | 9 | 5.5 | 1 | 0.6 | 14 | 6.6 | 93 | 39.7 | 0 | 0.0 | 0 | 0.0 | 161 | 45.0 |
| Kuala Lumpur | NA | NA | 2 | 5.4 | 208 | 17.0 | 237 | 16.8 | 202 | 14.8 | 163 | 12.7 | 352 | 35.2 | 509 | 29.4 |
| Kuala Pilah | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 | 9 | 3.0 | 38 | 8.2 | 51 | 12.2 | 236 | 50.0 | 103 | 22.4 |
| Kuala Terengganu | 75 | 15.2 | 99 | 14.2 | 274 | 39.3 | 402 | 59.9 | 445 | 61.8 | 434 | 60.5 | 765 | 80.6 | 650 | 77.6 |
| Melaka | 1075 | 73.1 | 1233 | 76.9 | 1014 | 76.9 | 1572 | 98.7 | 1549 | 98.6 | 1415 | 99.3 | 1,541 | 94.8 | 2,008 | 97.5 |
| Miri | 0 | 0.0 | 12 | 3.1 | 211 | 52.9 | 483 | 84.3 | 478 | 73.9 | 823 | 92.9 | 882 | 97.5 | 627 | 66.2 |
| Muar | 160 | 47.9 | 4 | 1.2 | 1 | 0.2 | 130 | 22.0 | 547 | 83.1 | 584 | 89.3 | 580 | 84.8 | 644 | 92.7 |
| Pulau Pinang | 8 | 0.8 | 560 | 44.4 | 814 | 64.1 | 1387 | 78.4 | 2002 | 92.4 | 1185 | 92.2 | 1,525 | 92.6 | 1,573 | 89.8 |
| Putrajaya | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 1.0 | 1 | 0.3 | 4 | 1.1 | 4 | 1.1 |
| Kota Kinabalu | 242 | 48.7 | 221 | 65.8 | 265 | 65.8 | 416 | 79.7 | 582 | 89.4 | 624 | 87.4 | 791 | 85.7 | 796 | 83.1 |
| Selayang | 983 | 71.5 | 981 | 71.7 | 989 | 72.2 | 1142 | 69.4 | 1255 | 70.1 | 1262 | 71.9 | 969 | 74.1 | 600 | 76.8 |
| Serdang | 33 | 5.8 | 247 | 37.5 | 151 | 27.0 | 88 | 18.9 | 164 | 26.8 | 264 | 38.7 | 533 | 56.8 | 752 | 64.4 |
| Sibu | 0 | 0.0 | 0 | 0.0 | 173 | 45.1 | 347 | 77.1 | 450 | 89.6 | 736 | 99.3 | 889 | 99.6 | 843 | 98.8 |
| Sri Manjung | 11 | 7.5 | 201 | 58.4 | 298 | 92.0 | 353 | 92.9 | 365 | 88.8 | 418 | 93.9 | 781 | 98.9 | 587 | 98.3 |
| Sultan Ismail | 0 | 0.0 | 0 | 0.0 | 1 | 0.8 | 10 | 5.7 | 58 | 32.0 | 87 | 46.8 | 212 | 75.4 | 95 | 19.6 |
| Johor Bahru | 359 | 24.1 | 501 | 37.6 | 159 | 12.6 | 488 | 37.1 | 1034 | 97.5 | 1114 | 97.7 | 289 | 22.4 | 440 | 32.7 |
| Sungai Buloh | 27 | 22.1 | 15 | 6.1 | 6 | 1.8 | 33 | 8.0 | 76 | 18.9 | 105 | 24.2 | 62 | 12.9 | 193 | 32.6 |
| Sungei Petani | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 240 | 45.9 | 640 | 82.9 | 633 | 78.6 | 711 | 81.1 | 756 | 85.7 |
| Taiping | 63 | 28.8 | 102 | 33.3 | 213 | 39.4 | 466 | 58.8 | 431 | 51.9 | 626 | 64.1 | 776 | 67.7 | 906 | 83.7 |
| Tawau | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 94 | 19.5 | 112 | 21.3 |
| Teluk Intan | 469 | 70.6 | 152 | 27.0 | 287 | 48.0 | 258 | 38.9 | 152 | 23.6 | 12 | 2.0 | 17 | 1.6 | 33 | 3.3 |
| Temerloh | 27 | 6.5 | 103 | 20.0 | 234 | 37.3 | 21 | 5.0 | 39 | 6.0 | 226 | 27.0 | 337 | 39.7 | 243 | 23.8 |
| Kuantan | 4 | 21.1 | 40 | 13.6 | 2 | 0.9 | 9 | 2.0 | 7 | 1.2 | 0 | 0.0 | 0 | 0.0 | 49 | 10.6 |
| Klang | 210 | 25.6 | 566 | 52.1 | 427 | 57.7 | 480 | 56.7 | 751 | 81.0 | 981 | 79.4 | 1,298 | 94.8 | 1,138 | 91.0 |
| Seremban | 1 | 0.1 | 102 | 12.3 | 273 | 23.5 | 632 | 43.0 | 1059 | 69.0 | 999 | 68.9 | 980 | 67.8 | 1156 | 76.0 |
| Kuching | 528 | 55.8 | 733 | 75.9 | 714 | 84.0 | 1000 | 88.3 | 1061 | 96.5 | 1530 | 95.6 | 1,592 | 97.8 | 1,855 | 93.9 |
| Kemaman | | | | | | | | | | | | | 29 | 63.0 | 52 | 73.2 |
| Sarikei | | | | | | | | | | | | | 280 | 98.6 | 546 | 98.9 |
| Kulim | | | | | | | | | | | | | - | - | 189 | 72.4 |
| KK1M Pahang | | | | | | | | | | | | | 16 | 25.0 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 28 | 80.0 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 33 | 18.0 |
| KK1M Sarawak | | | | | | | | | | | | | 74 | 98.7 | 818 | 99.3 |
| MAIWP | | | | | | | | | | | | | 1,351 | 85.3 | 2,171 | 95.8 |

Table 1.3.7-12: Topical Anaesthesia by SDP (50 years and above), CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 4510 | 27.0 | 6274 | 33.1 | 7952 | 37.0 | 12473 | 49.9 | 16003 | 59.0 | 17557 | 61.2 | 21203 | 64.3 | 24071 | 66.7 |
| Alor Setar | 1 | 0.3 | 88 | 10.1 | 115 | 13.0 | 652 | 52.0 | 839 | 51.5 | 888 | 57.4 | 523 | 36.8 | 1064 | 61.6 |
| Ampang | 2 | 66.7 | 62 | 32.1 | 236 | 61.3 | 475 | 81.6 | 653 | 96.3 | 777 | 92.5 | 867 | 96.2 | 801 | 91.1 |
| Batu Pahat | 1 | 0.2 | 0 | 0.0 | 25 | 4.4 | 80 | 21.0 | 340 | 65.8 | 172 | 30.5 | 14 | 3.5 | 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 |
| Bukit Mertajam | 0 | 0.0 | 2 | 0.5 | 62 | 9.0 | 0 | 0.0 | 1 | 0.1 | 8 | 0.9 | 0 | 0.0 | 1 | 0.1 |
| Sandakan | - | - | 11 | 8.9 | 31 | 22.8 | 83 | 46.4 | 79 | 32.9 | 84 | 36.2 | 339 | 91.6 | 207 | 96.3 |
| Ipoh | 534 | 37.1 | 575 | 36.5 | 1090 | 56.5 | 1455 | 73.0 | 1309 | 81.8 | 2090 | 82.3 | 2,333 | 91.1 | 2,104 | 97.3 |
| Kangar | 0 | 0.0 | 0 | 0.0 | 3 | 0.8 | 3 | 0.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | - | - | 23 | 92.0 | 19 | 90.5 | 2 | 3.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 73 | 58.4 |
| Kota Bharu | 0 | 0.0 | 1 | 0.2 | 10 | 1.3 | 22 | 2.6 | 6 | 0.7 | 8 | 1.7 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 0 | 0.0 | 9 | 5.9 | 1 | 0.6 | 14 | 7.1 | 86 | 39.1 | 0 | 0.0 | 0 | 0.0 | 157 | 45.1 |
| Kuala Lumpur | - | - | 1 | 2.9 | 198 | 16.9 | 223 | 16.6 | 189 | 14.6 | 157 | 12.8 | 338 | 35.2 | 494 | 29.6 |
| Kuala Pilah | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 9 | 3.1 | 38 | 8.5 | 49 | 12.2 | 229 | 50.7 | 101 | 22.5 |
| Kuala Terengganu | 68 | 14.4 | 94 | 14.3 | 259 | 39.4 | 373 | 59.6 | 423 | 61.8 | 408 | 60.6 | 732 | 81.2 | 615 | 77.4 |
| Melaka | 991 | 70.8 | 1151 | 75.9 | 951 | 76.5 | 1495 | 98.7 | 1483 | 98.5 | 1350 | 99.3 | 1,464 | 94.8 | 1,940 | 97.5 |
| Miri | 0 | 0.0 | 12 | 3.3 | 204 | 53.5 | 457 | 84.3 | 457 | 74.2 | 791 | 93.1 | 842 | 97.6 | 600 | 66.2 |
| Muar | 155 | 47.3 | 4 | 1.3 | 1 | 0.2 | 121 | 21.9 | 521 | 83.0 | 568 | 89.4 | 543 | 84.3 | 618 | 92.7 |
| Pulau Pinang | 7 | 0.7 | 543 | 44.4 | 789 | 63.9 | 1346 | 78.6 | 1931 | 92.8 | 1153 | 92.4 | 1,473 | 92.9 | 1,518 | 90.2 |
| Putrajaya | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.7 | 1 | 0.3 | 4 | 1.1 | 4 | 1.2 |
| Kota Kinabalu | 210 | 45.5 | 204 | 66.2 | 241 | 65.8 | 390 | 80.4 | 546 | 89.5 | 583 | 87.8 | 745 | 85.8 | 754 | 82.7 |
| Selayang | 927 | 74.5 | 906 | 73.9 | 921 | 74.3 | 1080 | 71.7 | 1192 | 73.4 | 1185 | 72.9 | 907 | 75.0 | 568 | 78.8 |
| Serdang | 26 | 4.8 | 235 | 37.4 | 149 | 27.6 | 82 | 18.7 | 149 | 26.1 | 243 | 38.1 | 504 | 56.8 | 723 | 64.4 |
| Sibu | 0 | 0.0 | 0 | 0.0 | 163 | 45.7 | 328 | 77.9 | 419 | 89.5 | 695 | 99.3 | 833 | 99.6 | 801 | 98.8 |
| Sri Manjung | 10 | 7.0 | 184 | 58.2 | 284 | 91.6 | 341 | 92.7 | 350 | 89.1 | 406 | 94.0 | 761 | 98.8 | 581 | 98.3 |
| Sultan Ismail | 0 | 0.0 | 0 | 0.0 | 1 | 0.9 | 10 | 5.8 | 58 | 32.2 | 82 | 45.3 | 207 | 75.5 | 89 | 19.1 |
| Johor Bahru | 339 | 24.1 | 464 | 38.2 | 151 | 13.3 | 458 | 37.6 | 951 | 97.5 | 1016 | 98.0 | 271 | 22.8 | 414 | 32.6 |
| Sungai Buloh | 24 | 18.6 | 14 | 6.1 | 6 | 1.9 | 31 | 8.2 | 73 | 19.6 | 102 | 24.5 | 59 | 12.9 | 181 | 32.8 |
| Sungei Petani | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 225 | 45.5 | 607 | 82.7 | 596 | 77.7 | 678 | 80.8 | 712 | 85.3 |
| Taiping | 61 | 24.0 | 102 | 34.6 | 205 | 39.3 | 447 | 59.0 | 409 | 51.7 | 605 | 63.8 | 744 | 67.1 | 879 | 83.7 |
| Tawau | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 88 | 20.3 | 102 | 20.9 |
| Teluk Intan | 440 | 70.5 | 146 | 27.2 | 279 | 48.8 | 248 | 38.9 | 148 | 23.6 | 11 | 1.9 | 16 | 1.5 | 31 | 3.2 |
| Temerloh | 24 | 5.9 | 97 | 19.8 | 217 | 36.9 | 21 | 5.1 | 37 | 5.9 | 216 | 27.1 | 314 | 38.8 | 238 | 24.1 |
| Kuantan | 4 | 19.0 | 37 | 13.4 | 2 | 0.9 | 9 | 2.1 | 5 | 0.9 | 0 | 0.0 | 0 | 0.0 | 45 | 10.1 |
| Klang | 196 | 21.0 | 531 | 52.3 | 408 | 58.2 | 446 | 56.0 | 695 | 81.0 | 922 | 79.3 | 1,230 | 94.6 | 1,084 | 90.9 |
| Seremban | 1 | 0.1 | 97 | 12.3 | 255 | 23.3 | 602 | 43.1 | 1015 | 69.0 | 962 | 69.7 | 947 | 67.9 | 1103 | 75.5 |
| Kuching | 489 | 55.0 | 681 | 76.8 | 675 | 84.7 | 945 | 88.2 | 992 | 96.4 | 1429 | 95.6 | 1,514 | 98.2 | 1,770 | 94.4 |
| Kemaman | | | | | | | | | | | | | 27 | 61.4 | 49 | 74.2 |
| Sarikei | | | | | | | | | | | | | 267 | 98.9 | 536 | 98.9 |
| Kulim | | | | | | | | | | | | | - | - | 179 | 71.6 |
| KK1M Pahang | | | | | | | | | | | | | 16 | 26.7 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 28 | 80.0 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 33 | 18.6 |
| KK1M Sarawak | | | | | | | | | | | | | 73 | 98.6 | 794 | 99.4 |
| MAIWP | | | | | | | | | | | | | 1,301 | 85.6 | 2,080 | 95.9 |

Table 1.3.7-13: Types of Sedation in Eyes Given Local Anaesthesia by SDP, CSR 2014

| | Types of sedation | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | All Local Anaesthesia | No Sedation | | Oral Alone | | Intravenous Alone | | Intramuscular Alone | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 37,654 | 19,249 | 51.1 | 1,823 | 4.8 | 36 | 0.1 | 1 | 0.0 |
| Alor Setar | 1,793 | 1,213 | 67.7 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Ampang | 908 | 109 | 12.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Batu Pahat | 452 | 339 | 75.0 | 4 | 0.9 | 0 | 0.0 | 0 | 0.0 |
| Bintulu | 374 | 374 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bukit Mertajam | 966 | 325 | 33.6 | 108 | 11.2 | 7 | 0.7 | 0 | 0.0 |
| Sandakan | 233 | 2 | 0.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 2,225 | 577 | 25.9 | 3 | 0.1 | 3 | 0.1 | 0 | 0.0 |
| Kangar | 418 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 129 | 121 | 93.8 | 0 | 0.0 | 1 | 0.8 | 0 | 0.0 |
| Kota Bharu | 275 | 268 | 97.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 358 | 222 | 62.0 | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 |
| Kuala Lumpur | 1,734 | 146 | 8.4 | 10 | 0.6 | 1 | 0.1 | 0 | 0.0 |
| Kuala Pilah | 460 | 163 | 35.4 | 24 | 5.2 | 0 | 0.0 | 0 | 0.0 |
| Kuala Terengganu | 838 | 614 | 73.3 | 3 | 0.4 | 7 | 0.8 | 0 | 0.0 |
| Melaka | 2,059 | 1,858 | 90.2 | 2 | 0.1 | 1 | 0.0 | 0 | 0.0 |
| Miri | 947 | 38 | 4.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Muar | 695 | 674 | 97.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Pulau Pinang | 1,752 | 371 | 21.2 | 1227 | 70.0 | 1 | 0.1 | 0 | 0.0 |
| Putrajaya | 353 | 336 | 95.2 | 6 | 1.7 | 1 | 0.3 | 0 | 0.0 |
| Kota Kinabalu | 958 | 625 | 65.2 | 2 | 0.2 | 1 | 0.1 | 0 | 0.0 |
| Selayang | 781 | 351 | 44.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Serdang | 1168 | 964 | 82.5 | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 |
| Sibu | 853 | 665 | 78.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Sri Manjung | 597 | 310 | 51.9 | 2 | 0.3 | 0 | 0.0 | 0 | 0.0 |
| Sultan Ismail | 484 | 452 | 93.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Johor Bahru | 1,345 | 9 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungai Buloh | 592 | 3 | 0.5 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| Sungei Petani | 882 | 800 | 90.7 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Taiping | 1,082 | 1,080 | 99.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Tawau | 526 | 426 | 81.0 | 12 | 2.3 | 0 | 0.0 | 0 | 0.0 |
| Teluk Intan | 995 | 5 | 0.5 | 408 | 41.0 | 0 | 0.0 | 0 | 0.0 |
| Temerloh | 1019 | 478 | 46.9 | 4 | 0.4 | 9 | 0.9 | 0 | 0.0 |
| Kuantan | 464 | 360 | 77.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Klang | 1,251 | 211 | 16.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Seremban | 1,521 | 970 | 63.8 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Kuching | 1,975 | 1018 | 51.5 | 2 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Kemaman | 71 | 2 | 2.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sarikei | 552 | 535 | 96.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kulim | 261 | 88 | 33.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Terengganu | 35 | 17 | 48.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Kelantan | 183 | 51 | 27.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Sarawak | 824 | 514 | 62.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| MAIWP | 2,266 | 1,565 | 69.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |

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

Table 1.3.7-14: Types of Sedation in Eyes Given Local Anaesthesia by SDP (50 years and above), CSR 2014

| | Types of sedation | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | All Local Anaesthesia | No Sedation | | Oral Alone | | Intravenous Alone | | Intramuscular Alone | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 36,107 | 18,485 | 51.2 | 1,755 | 4.9 | 26 | 0.1 | 1 | 0.0 |
| Alor Setar | 1,728 | 1,159 | 67.1 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Ampang | 879 | 105 | 11.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Batu Pahat | 439 | 330 | 75.2 | 3 | 0.7 | 0 | 0.0 | 0 | 0.0 |
| Bintulu | 341 | 341 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bukit Mertajam | 929 | 313 | 33.7 | 104 | 11.2 | 6 | 0.6 | 0 | 0.0 |
| Sandakan | 215 | 1 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 2,163 | 563 | 26.0 | 3 | 0.1 | 2 | 0.1 | 0 | 0.0 |
| Kangar | 399 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 125 | 120 | 96.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kota Bharu | 254 | 247 | 97.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 348 | 217 | 62.4 | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 |
| Kuala Lumpur | 1668 | 144 | 8.6 | 9 | 0.5 | 1 | 0.1 | 0 | 0.0 |
| Kuala Pilah | 449 | 161 | 35.9 | 20 | 4.5 | 0 | 0.0 | 0 | 0.0 |
| Kuala Terengganu | 795 | 590 | 74.2 | 3 | 0.4 | 2 | 0.3 | 0 | 0.0 |
| Melaka | 1,989 | 1,795 | 90.2 | 2 | 0.1 | 1 | 0.1 | 0 | 0.0 |
| Miri | 906 | 37 | 4.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Muar | 667 | 648 | 97.2 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Pulau Pinang | 1,682 | 357 | 21.2 | 1177 | 70.0 | 1 | 0.1 | 0 | 0.0 |
| Putrajaya | 340 | 323 | 95.0 | 6 | 1.8 | 1 | 0.3 | 0 | 0.0 |
| Kota Kinabalu | 912 | 595 | 65.2 | 2 | 0.2 | 1 | 0.1 | 0 | 0.0 |
| Selayang | 721 | 331 | 45.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Serdang | 1122 | 928 | 82.7 | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 |
| Sibu | 811 | 634 | 78.2 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Sri Manjung | 591 | 308 | 52.1 | 2 | 0.3 | 0 | 0.0 | 0 | 0.0 |
| Sultan Ismail | 467 | 440 | 94.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Johor Bahru | 1,269 | 7 | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungai Buloh | 552 | 1 | 0.2 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| Sungei Petani | 835 | 758 | 90.8 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Taiping | 1,050 | 1,048 | 99.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Tawau | 487 | 392 | 80.5 | 12 | 2.5 | 0 | 0.0 | 0 | 0.0 |
| Teluk Intan | 973 | 5 | 0.5 | 400 | 41.1 | 0 | 0.0 | 0 | 0.0 |
| Temerloh | 989 | 467 | 47.2 | 4 | 0.4 | 8 | 0.8 | 0 | 0.0 |
| Kuantan | 447 | 346 | 77.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Klang | 1,192 | 201 | 16.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Seremban | 1,460 | 929 | 63.6 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Kuching | 1,875 | 974 | 51.9 | 2 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Kemaman | 66 | 1 | 1.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sarikei | 542 | 525 | 96.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kulim | 250 | 83 | 33.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Terengganu | 35 | 17 | 48.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Kelantan | 177 | 50 | 28.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Sarawak | 799 | 499 | 62.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| MAIWP | 2,169 | 1,495 | 68.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |

Table 1.3.7-15: Oral Sedation Alone by SDP, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 2387 | 13.9 | 2923 | 14.5 | 3532 | 15.5 | 3171 | 12.0 | 2852 | 10.0 | 1810 | 6.0 | 1391 | 4.0 | 1823 | 4.8 |
| Alor Setar | 4 | 1.1 | 9 | 1.0 | 23 | 2.4 | 4 | 0.3 | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 | 0 | 0.0 |
| Ampang | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 3 | 0.5 | 0 | 0.0 | 3 | 0.3 | 2 | 0.2 | 0 | 0.0 |
| Batu Pahat | 0 | 0.0 | 1 | 0.2 | 3 | 0.5 | 1 | 0.2 | 1 | 0.2 | 1 | 0.2 | 4 | 1.0 | 4 | 0.9 |
| Bintulu | - | - | 7 | 24.1 | 29 | 24.4 | 32 | 12.5 | 4 | 1.2 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 |
| Bukit Mertajam | 204 | 33.6 | 356 | 77.6 | 466 | 63.8 | 308 | 39.2 | 185 | 23.7 | 107 | 12.0 | 66 | 7.4 | 108 | 11.3 |
| Sandakan | - | - | 0 | 0.0 | 0 | 0.0 | 1 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 7 | 0.5 | 6 | 0.4 | 9 | 0.4 | 13 | 0.6 | 11 | 0.7 | 2 | 0.1 | 7 | 0.3 | 3 | 0.1 |
| Kangar | 4 | 1.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | - | - | 1 | 3.3 | 0 | 0.0 | 1 | 1.4 | 2 | 4.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kota Bharu | 5 | 0.7 | 5 | 0.7 | 15 | 1.8 | 5 | 0.6 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 3 | 2.6 | 11 | 6.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 |
| Kuala Lumpur | NA | NA | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 | 2 | 0.1 | 15 | 1.2 | 32 | 3.2 | 10 | 0.6 |
| Kuala Pilah | 99 | 47.4 | 97 | 35.1 | 205 | 73.0 | 77 | 25.8 | 211 | 45.3 | 96 | 23.0 | 22 | 4.7 | 24 | 5.2 |
| Kuala Terengganu | 16 | 3.3 | 2 | 0.3 | 72 | 10.3 | 104 | 15.5 | 15 | 2.1 | 23 | 3.3 | 2 | 0.2 | 3 | 0.4 |
| Melaka | 0 | 0.0 | 2 | 0.1 | 7 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 2 | 0.1 |
| Miri | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 3 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Muar | 4 | 1.2 | 0 | 0.0 | 0 | 0.0 | 4 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Pulau Pinang | 847 | 85.5 | 1124 | 89.2 | 1018 | 80.2 | 1339 | 75.6 | 1382 | 63.8 | 662 | 51.6 | 818 | 49.7 | 1227 | 70.1 |
| Putrajaya | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 1.2 | 6 | 1.6 | 6 | 1.7 |
| Kota Kinabalu | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.8 | 0 | 0.0 | 1 | 0.1 | 2 | 0.2 |
| Selayang | 13 | 0.9 | 2 | 0.1 | 10 | 0.7 | 13 | 0.8 | 6 | 0.3 | 1 | 0.1 | 3 | 0.2 | 0 | 0.0 |
| Serdang | 2 | 0.4 | 0 | 0.0 | 0 | 0.0 | 3 | 0.6 | 0 | 0.0 | 0 | 0.0 | 5 | 0.5 | 1 | 0.1 |
| Sibu | 323 | 94.2 | 57 | 23.1 | 141 | 36.7 | 39 | 8.7 | 24 | 4.8 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 |
| Sri Manjung | 3 | 2.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 1 | 0.1 | 2 | 0.3 |
| 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 |
| Johor Bahru | 188 | 12.6 | 212 | 15.9 | 57 | 4.5 | 4 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungai Buloh | 1 | 0.8 | 1 | 0.4 | 4 | 1.2 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Sungei Petani | 253 | 53.0 | 487 | 80.9 | 578 | 88.8 | 443 | 84.7 | 281 | 36.4 | 11 | 1.4 | 4 | 0.5 | 1 | 0.1 |
| Taiping | 7 | 3.2 | 20 | 6.5 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 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 | 3 | 0.6 | 12 | 2.3 |
| Teluk Intan | 0 | 0.0 | 158 | 28.0 | 366 | 61.2 | 356 | 53.7 | 95 | 14.7 | 353 | 59.7 | 247 | 23.0 | 408 | 41.0 |
| Temerloh | 400 | 96.9 | 357 | 69.2 | 511 | 81.5 | 414 | 97.6 | 613 | 94.3 | 526 | 63.1 | 153 | 18.0 | 4 | 0.4 |
| Kuantan | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 | 5 | 0.8 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 |
| Klang | 1 | 0.1 | 2 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Seremban | 3 | 0.3 | 5 | 0.6 | 14 | 1.2 | 2 | 0.1 | 4 | 0.3 | 2 | 0.1 | 1 | 0.1 | 1 | 0.1 |
| Kuching | 0 | 0.0 | 0 | 0.0 | 2 | 0.2 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 2 | 0.1 |
| Kemaman | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| Sarikei | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| Kulim | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Pahang | | | | | | | | | | | | | 9 | 14.1 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Sarawak | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| MAIWP | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |

Table 1.3.7-16: Oral Sedation Alone by SDP (50 years and above), CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 2264 | 13.5 | 2798 | 14.8 | 3355 | 15.6 | 3055 | 12.2 | 2731 | 10.1 | 1748 | 6.1 | 1339 | 4.1 | 1755 | 4.9 |
| Alor Setar | 4 | 1.1 | 9 | 1.0 | 23 | 2.6 | 4 | 0.3 | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 | 0 | 0.0 |
| Ampang | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 3 | 0.5 | 0 | 0.0 | 3 | 0.4 | 2 | 0.2 | 0 | 0.0 |
| Batu Pahat | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 | 1 | 0.3 | 1 | 0.2 | 0 | 0.0 | 4 | 1.0 | 3 | 0.7 |
| Bintulu | - | - | 7 | 28.0 | 25 | 23.4 | 31 | 13.5 | 4 | 1.3 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 |
| Bukit Mertajam | 198 | 32.1 | 340 | 78.2 | 437 | 63.2 | 284 | 38.7 | 174 | 23.4 | 102 | 12.0 | 63 | 7.5 | 104 | 11.3 |
| Sandakan | - | - | 0 | 0.0 | 0 | 0.0 | 1 | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 6 | 0.4 | 6 | 0.4 | 9 | 0.5 | 13 | 0.7 | 9 | 0.6 | 2 | 0.1 | 6 | 0.2 | 3 | 0.1 |
| Kangar | 3 | 1.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | - | - | 1 | 4.0 | 0 | 0.0 | 1 | 1.5 | 2 | 4.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kota Bharu | 5 | 0.7 | 4 | 0.6 | 14 | 1.8 | 5 | 0.6 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 3 | 2.6 | 11 | 7.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 |
| Kuala Lumpur | - | - | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 | 2 | 0.2 | 14 | 1.1 | 31 | 3.2 | 9 | 0.5 |
| Kuala Pilah | 95 | 47.5 | 92 | 35.9 | 194 | 72.4 | 75 | 26.2 | 200 | 44.6 | 92 | 22.8 | 21 | 4.6 | 20 | 4.5 |
| Kuala Terengganu | 16 | 3.4 | 2 | 0.3 | 65 | 9.9 | 98 | 15.7 | 14 | 2.0 | 21 | 3.1 | 2 | 0.2 | 3 | 0.4 |
| Melaka | 0 | 0.0 | 2 | 0.1 | 7 | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 2 | 0.1 |
| Miri | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 3 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Muar | 4 | 1.2 | 0 | 0.0 | 0 | 0.0 | 4 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Pulau Pinang | 809 | 79.7 | 1092 | 89.2 | 992 | 80.4 | 1300 | 75.9 | 1331 | 64.0 | 648 | 51.9 | 789 | 49.7 | 1177 | 70.0 |
| Putrajaya | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 0.9 | 4 | 1.1 | 6 | 1.8 |
| Kota Kinabalu | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.8 | 0 | 0.0 | 1 | 0.1 | 2 | 0.2 |
| Selayang | 9 | 0.7 | 2 | 0.2 | 9 | 0.7 | 12 | 0.8 | 5 | 0.3 | 1 | 0.1 | 2 | 0.2 | 0 | 0.0 |
| Serdang | 2 | 0.4 | 0 | 0.0 | 0 | 0.0 | 3 | 0.7 | 0 | 0.0 | 0 | 0.0 | 5 | 0.6 | 1 | 0.1 |
| Sibu | 307 | 89.0 | 53 | 23.2 | 131 | 36.7 | 36 | 8.6 | 23 | 4.9 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 |
| Sri Manjung | 3 | 2.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 1 | 0.1 | 2 | 0.3 |
| 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 |
| Johor Bahru | 173 | 12.3 | 200 | 16.4 | 52 | 4.6 | 4 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungai Buloh | 1 | 0.8 | 1 | 0.4 | 4 | 1.3 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Sungei Petani | 237 | 51.4 | 456 | 81.3 | 546 | 88.5 | 421 | 85.1 | 265 | 36.1 | 11 | 1.4 | 3 | 0.4 | 1 | 0.1 |
| Taiping | 7 | 2.8 | 19 | 6.4 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 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 | 3 | 0.7 | 12 | 2.5 |
| Teluk Intan | 0 | 0.0 | 153 | 28.5 | 346 | 60.5 | 347 | 54.5 | 92 | 14.7 | 342 | 59.6 | 242 | 23.2 | 400 | 41.1 |
| Temerloh | 379 | 92.4 | 340 | 69.2 | 482 | 82.0 | 405 | 97.6 | 590 | 94.6 | 503 | 63.2 | 145 | 17.9 | 4 | 0.4 |
| Kuantan | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.5 | 5 | 0.9 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 |
| Klang | 1 | 0.1 | 2 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Seremban | 2 | 0.2 | 5 | 0.6 | 13 | 1.2 | 2 | 0.1 | 3 | 0.2 | 2 | 0.1 | 1 | 0.1 | 1 | 0.1 |
| Kuching | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 2 | 0.1 |
| Kemaman | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| Sarikei | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| Kulim | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Pahang | | | | | | | | | | | | | 9 | 15.0 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Sarawak | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| MAIWP | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |

Table 1.3.7-17: Intravenous Sedation Alone by SDP, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 72 | 0.4 | 37 | 0.2 | 35 | 0.2 | 22 | 0.1 | 27 | 0.1 | 36 | 0.1 | 31 | 0.1 | 36 | 0.1 |
| Alor Setar | 1 | 0.3 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 5 | 0.3 | 1 | 0.1 | 1 | 0.1 |
| Ampang | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 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 |
| Bintulu | - | - | 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 | 0 | 0.0 | 2 | 0.3 | 3 | 0.4 | 0 | 0.0 | 10 | 1.3 | 3 | 0.3 | 7 | 0.8 |
| Sandakan | - | - | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 6 | 0.4 | 8 | 0.5 | 6 | 0.3 | 1 | 0.0 | 4 | 0.2 | 3 | 0.1 | 2 | 0.1 | 3 | 0.1 |
| 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 |
| Keningau | - | - | 0 | 0.0 | 0 | 0.0 | 3 | 4.2 | 6 | 13.6 | 0 | 0.0 | 0 | 0.0 | 1 | 0.8 |
| Kota Bharu | 5 | 0.7 | 2 | 0.3 | 6 | 0.7 | 2 | 0.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 |
| Kuala Krai | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Lumpur | NA | NA | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 |
| Kuala Pilah | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 |
| Kuala Terengganu | 7 | 1.4 | 14 | 2.0 | 7 | 1.0 | 5 | 0.7 | 13 | 1.8 | 12 | 1.7 | 7 | 0.7 | 7 | 0.8 |
| Melaka | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 |
| Miri | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Muar | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Pulau Pinang | 3 | 0.3 | 4 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 | 1 | 0.1 | 1 | 0.2 |
| Putrajaya | 0 | 0.0 | 0 | 0.0 | 2 | 0.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 1 | 0.3 |
| Kota Kinabalu | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Selayang | 33 | 2.4 | 0 | 0.0 | 3 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Serdang | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.2 | 1 | 0.1 |
| Sibu | 1 | 0.3 | 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 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 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 |
| Johor Bahru | 0 | 0.0 | 0 | 0.0 | 4 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungai Buloh | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungei Petani | 1 | 0.2 | 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 |
| Tawau | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Teluk Intan | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 2 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Temerloh | 0 | 0.0 | 2 | 0.4 | 1 | 0.2 | 0 | 0.0 | 1 | 0.2 | 2 | 0.6 | 7 | 0.8 | 9 | 0.9 |
| Kuantan | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Klang | 11 | 1.3 | 3 | 0.3 | 2 | 0.3 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Seremban | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuching | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kemaman | | | | | | | | | | | | | 1 | 2.2 | 0 | 0.0 |
| Sarikei | | | | | | | | | | | | | 2 | 0.7 | 0 | 0.0 |
| Kulim | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Pahang | | | | | | | | | | | | | 1 | 1.6 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Sarawak | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| MAIWP | | | | | | | | | | | | | 1 | 0.1 | 0 | 0.0 |

Table 1.3.7-18: Intravenous Sedation Alone by SDP (50 years and above), CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All Centres** | 55 | 0.3 | 37 | 0.2 | 29 | 0.1 | 18 | 0.1 | 23 | 0.1 | 34 | 0.1 | 28 | 0.1 | 26 | 0.1 |
| Alor Setar | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 4 | 0.3 | 1 | 0.1 | 1 | 0.1 |
| Ampang | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 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 |
| Bintulu | - | - | 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 | 0 | 0.0 | 2 | 0.3 | 2 | 0.3 | 0 | 0.0 | 10 | 1.2 | 3 | 0.4 | 6 | 0.7 |
| Sandakan | - | - | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 4 | 0.3 | 8 | 0.5 | 6 | 0.3 | 1 | 0.1 | 3 | 0.2 | 3 | 0.1 | 2 | 0.1 | 2 | 0.1 |
| 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 |
| Keningau | - | - | 0 | 0.0 | 0 | 0.0 | 3 | 4.5 | 5 | 12.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kota Bharu | 5 | 0.7 | 2 | 0.3 | 5 | 0.6 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Krai | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuala Lumpur | - | - | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Kuala Pilah | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| Kuala Terengganu | 5 | 1.1 | 14 | 2.1 | 4 | 0.6 | 5 | 0.8 | 12 | 1.8 | 11 | 1.6 | 6 | 0.7 | 2 | 0.3 |
| Melaka | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| 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 |
| Muar | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Pulau Pinang | 3 | 0.3 | 4 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.2 | 1 | 0.1 | 1 | 0.2 |
| Putrajaya | 0 | 0.0 | 0 | 0.0 | 2 | 0.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 1 | 0.3 |
| Kota Kinabalu | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Selayang | 23 | 1.8 | 0 | 0.0 | 3 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Serdang | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.2 | 1 | 0.1 |
| Sibu | 1 | 0.3 | 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 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 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 |
| Johor Bahru | 0 | 0.0 | 0 | 0.0 | 3 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungai Buloh | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungei Petani | 1 | 0.2 | 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 |
| Tawau | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Teluk Intan | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Temerloh | 0 | 0.0 | 2 | 0.4 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 2 | 0.3 | 7 | 0.9 | 8 | 0.8 |
| Kuantan | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Klang | 9 | 1.0 | 3 | 0.3 | 2 | 0.3 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Seremban | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuching | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kemaman | | | | | | | | | | | | | 1 | 2.3 | 0 | 0.0 |
| Sarikei | | | | | | | | | | | | | 2 | 0.7 | 0 | 0.0 |
| Kulim | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Pahang | | | | | | | | | | | | | 1 | 1.7 | - | - |
| KK1M Terengganu | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Kelantan | | | | | | | | | | | | | - | - | 0 | 0.0 |
| KK1M Sarawak | | | | | | | | | | | | | 0 | 0.0 | 0 | 0.0 |
| MAIWP | | | | | | | | | | | | | 1 | 0.1 | 0 | 0.0 |

### 1.3.8 Intraocular Lens (IOL)

In 2012 the percentage of eyes with IOL implantation was 98.5%. Out of this proportion, 95.9% had posterior chamber IOL.

The material and type of IOL used demonstrated a shift from PMMA to Acrylic and from non-foldable to foldable. This pattern was consistent with the shift from ECCE to Phaco as the preferred method of cataract surgery.

Table 1.3.8-1: IOL Implantation, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of patients (N) | 18426 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| With IOL | 17873 | 97.0 | 21115 | 98.2 | 23982 | 98.1 | 27980 | 98.1 | 30061 | 98.2 | 31991 | 98.5 | 36545 | 98.4 | 40006 | 98.7 |
| Without IOL | 553 | 3.0 | 375 | 1.7 | 423 | 1.7 | 502 | 1.8 | 487 | 1.6 | 419 | 1.3 | 431 | 1.2 | 495 | 1.2 |
| Not Available | - | - | 6 | 0.0 | 33 | 0.1 | 24 | 0.1 | 63 | 0.2 | 63 | 0.2 | 174 | 0.5 | 31 | 0.1 |
| **IOL Placement** | | | | | | | | | | | | | | | | |
| No of IOL | 17873 | | 21115 | | 23982 | | 27980 | | 30061 | | 31991 | | 36545 | | 40006 | |
| PCIOL | 17350 | 97.1 | 20342 | 96.3 | 23032 | 96 | 26932 | 96.3 | 28963 | 96.3 | 30683 | 95.9 | 35194 | 96.3 | 38453 | 96.1 |
| ACIOL | 482 | 2.7 | 454 | 2.2 | 570 | 2.4 | 543 | 1.9 | 573 | 1.9 | 575 | 1.8 | 595 | 1.6 | 633 | 1.6 |
| Scleral Fixated IOL | 35 | 0.2 | 36 | 0.2 | 21 | 0.1 | 20 | 0.1 | 21 | 0.1 | 15 | 0.0 | 25 | 0.1 | 29 | 0.1 |
| Others | 6 | 0.0 | 14 | 0.1 | 22 | 0.1 | 21 | 0.1 | 44 | 0.1 | 53 | 0.2 | 59 | 0.2 | 94 | 0.2 |
| Not Available /missing | - | - | 269 | 1.3 | 337 | 1.4 | 464 | 1.7 | 460 | 1.5 | 665 | 2.1 | 672 | 1.8 | 797 | 2.0 |
| **Materials of IOL** | | | | | | | | | | | | | | | | |
| No of IOL | 17873 | | 21115 | | 23982 | | 27980 | | 30061 | | 31991 | | 36545 | | 40006 | |
| 1. Acrylic | 11955 | 66.9 | 15382 | 72.8 | 19160 | 79.9 | 24270 | 86.7 | 26917 | 89.5 | 28861 | 90.2 | 32798 | 89.7 | 37056 | 92.6 |
| 2. PMMA | 5547 | 31.0 | 5300 | 25.1 | 4313 | 18.0 | 3259 | 11.6 | 2603 | 8.7 | 2295 | 7.2 | 2083 | 5.7 | 1736 | 4.3 |
| 3. Silicone | 97 | 0.5 | 113 | 0.5 | 137 | 0.6 | 75 | 0.3 | 110 | 0.4 | 117 | 0.4 | 347 | 0.9 | 143 | 0.4 |
| 4. Others | 74 | 0.4 | 19 | 0.1 | 58 | 0.2 | 32 | 0.1 | 37 | 0.1 | 84 | 0.3 | 75 | 0.2 | 115 | 0.3 |
| Not Available/ missing | 200 | 1.1 | 301 | 1.4 | 314 | 1.3 | 344 | 1.2 | 394 | 1.3 | 634 | 2.0 | 1242 | 3.4 | 956 | 2.4 |
| **Types of IOL** | | | | | | | | | | | | | | | | |
| No of IOL | 17873 | | 21115 | | 23982 | | 27980 | | 30061 | | 31991 | | 36545 | | 40006 | |
| 1. Foldable | 11972 | 67.0 | 15320 | 72.6 | 19093 | 79.6 | 24036 | 85.9 | 26553 | 88.3 | 29107 | 91.0 | 33987 | 93.0 | 37536 | 93.8 |
| 2. Non-foldable | 5590 | 31.3 | 5316 | 25.2 | 4280 | 17.8 | 3231 | 11.5 | 2694 | 9.0 | 2345 | 7.3 | 1929 | 5.3 | 1820 | 4.5 |
| Not Available/ missing | 311 | 1.7 | 479 | 2.3 | 609 | 2.5 | 713 | 2.5 | 814 | 2.7 | 539 | 1.7 | 629 | 1.7 | 650 | 1.6 |

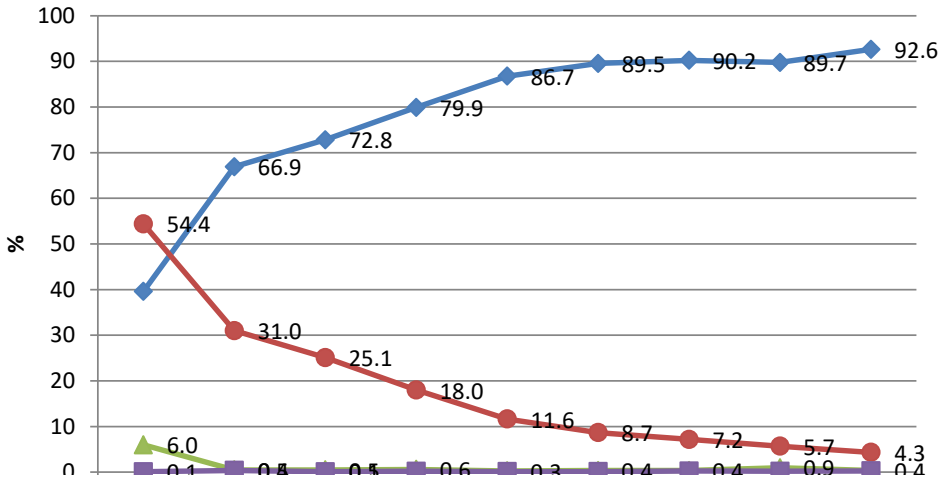



Figure 1.3.8-1: Intraocular Lens Implantation, CSR 2002-2014

Table 1.3.8-2: Distribution of IOL Placement by SDP, CSR 2014

| Cataract Surgery With IOL | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Posterior Chamber IOL | | Anterior Chamber IOL | | Scleral Fixated IOL | |
| | **N** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 40006 | 38453 | 96.1 | 633 | 1.6 | 29 | 0.1 |
| Alor Setar | 2050 | 1989 | 97.0 | 24 | 1.2 | 0 | 0.0 |
| Ampang | 944 | 889 | 94.2 | 28 | 3.0 | 0 | 0.0 |
| Batu Pahat | 464 | 446 | 96.1 | 17 | 3.7 | 0 | 0.0 |
| Bintulu | 372 | 361 | 97.0 | 4 | 1.1 | 0 | 0.0 |
| Bukit Mertajam | 997 | 976 | 97.9 | 1 | 0.1 | 0 | 0.0 |
| Sandakan | 235 | 234 | 99.6 | 0 | 0.0 | 0 | 0.0 |
| Ipoh | 2728 | 2496 | 91.5 | 19 | 0.7 | 2 | 0.1 |
| Kangar | 418 | 383 | 91.6 | 27 | 6.5 | 0 | 0.0 |
| Keningau | 133 | 131 | 98.5 | 1 | 0.8 | 0 | 0.0 |
| Kota Bharu | 283 | 274 | 96.8 | 2 | 0.7 | 5 | 1.8 |
| Kuala Krai | 356 | 344 | 96.6 | 8 | 2.2 | 0 | 0.0 |
| Kuala Lumpur | 1906 | 1822 | 95.6 | 25 | 1.3 | 1 | 0.1 |
| Kuala Pilah | 493 | 474 | 96.1 | 12 | 2.4 | 0 | 0.0 |
| Kuala Terengganu | 865 | 831 | 96.1 | 21 | 2.4 | 0 | 0.0 |
| Melaka | 2113 | 2069 | 97.9 | 13 | 0.6 | 3 | 0.1 |
| Miri | 942 | 935 | 99.3 | 4 | 0.4 | 0 | 0.0 |
| Muar | 714 | 686 | 96.1 | 19 | 2.7 | 5 | 0.7 |
| Pulau Pinang | 1768 | 1719 | 97.2 | 11 | 0.6 | 0 | 0.0 |
| Putrajaya | 365 | 350 | 95.9 | 15 | 4.1 | 0 | 0.0 |
| Kota Kinabalu | 1021 | 970 | 95.0 | 34 | 3.3 | 3 | 0.3 |
| Selayang | 890 | 832 | 93.5 | 33 | 3.7 | 0 | 0.0 |
| Serdang | 1249 | 1207 | 96.6 | 24 | 1.9 | 0 | 0.0 |
| Sibu | 859 | 827 | 96.3 | 26 | 3.0 | 0 | 0.0 |
| Sri Manjung | 621 | 616 | 99.2 | 2 | 0.3 | 0 | 0.0 |
| Sultan Ismail | 604 | 591 | 97.8 | 5 | 0.8 | 2 | 0.3 |
| Johor Bahru | 1376 | 1330 | 96.7 | 31 | 2.3 | 0 | 0.0 |
| Sungai Buloh | 691 | 666 | 96.4 | 5 | 0.7 | 0 | 0.0 |
| Sungei Petani | 1003 | 963 | 96.0 | 16 | 1.6 | 0 | 0.0 |
| Taiping | 1228 | 1213 | 98.8 | 13 | 1.1 | 1 | 0.1 |
| Tawau | 530 | 504 | 95.1 | 15 | 2.8 | 0 | 0.0 |
| Teluk Intan | 1006 | 977 | 97.1 | 14 | 1.4 | 2 | 0.2 |
| Temerloh | 1032 | 1003 | 97.2 | 16 | 1.6 | 0 | 0.0 |
| Kuantan | 575 | 536 | 93.2 | 9 | 1.6 | 0 | 0.0 |
| Klang | 1458 | 1349 | 92.5 | 34 | 2.3 | 0 | 0.0 |
| Seremban | 1567 | 1511 | 96.4 | 37 | 2.4 | 1 | 0.1 |
| Kuching | 1981 | 1893 | 95.6 | 21 | 1.1 | 2 | 0.1 |
| Kemaman | 71 | 59 | 83.1 | 1 | 1.4 | 0 | 0.0 |
| Sarikei | 554 | 551 | 99.5 | 3 | 0.5 | 0 | 0.0 |
| Kulim | 259 | 254 | 98.1 | 3 | 1.2 | 0 | 0.0 |
| KK1M Terengganu | 36 | 34 | 94.4 | 0 | 0.0 | 0 | 0.0 |
| KK1M Kelantan | 185 | 174 | 94.1 | 4 | 2.2 | 0 | 0.0 |
| KK1M Sarawak | 805 | 766 | 95.2 | 0 | 0.0 | 0 | 0.0 |
| MAIWP | 2259 | 2218 | 98.2 | 36 | 1.6 | 2 | 0.1 |

## 1.4 Intra-operative Complications

The rate of occurrence of PCR was maintained throughout the years. The more serious complications such as nucleus drop (or dropped nucleus) and suprachoroidal haemorrhage were not frequent and the trend remained unchanged.

### 1.4.1 Intra-operative Complications

Table 1.4.1-1: Distribution of Type of Intra-operative Complications, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | 18380 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Patient with intra-op complication | 1999 | 10.9 | 1636 | 7.6 | 1645 | 6.7 | 1610 | 5.6 | 1787 | 5.8 | 1702 | 5.2 | 1998 | 5.4 | 2159 | 5.3 |
| **Types of complications** | | | | | | | | | | | | | | | | |
| PCR | 764 | 4.2 | 798 | 3.7 | 858 | 3.5 | 840 | 2.9 | 936 | 3.1 | 870 | 2.7 | 1017 | 2.7 | 1100 | 2.7 |
| Vitreous loss | 569 | 3.1 | 608 | 2.8 | 642 | 2.6 | 639 | 2.2 | 611 | 2.0 | 529 | 1.6 | 644 | 1.7 | 661 | 1.6 |
| Zonular dehiscence | 275 | 1.5 | 322 | 1.5 | 372 | 1.5 | 377 | 1.3 | 362 | 1.2 | 359 | 1.1 | 391 | 1.0 | 467 | 1.2 |
| Drop nucleus | 21 | 0.1 | 33 | 0.2 | 40 | 0.2 | 38 | 0.1 | 58 | 0.2 | 56 | 0.2 | 63 | 0.2 | 87 | 0.2 |
| Suprachoroidal haemorrhage | 9 | 0.0 | 10 | 0.0 | 13 | 0.1 | 9 | 0.0 | 8 | 0.0 | 8 | 0.0 | 8 | 0.0 | 4 | 0.0 |
| Central corneal oedema | 58 | 0.3 | 27 | 0.1 | 22 | 0.1 | 26 | 0.1 | 36 | 0.1 | 30 | 0.1 | 23 | 0.1 | 36 | 0.1 |
| Others | 350 | 1.9 | 361 | 1.7 | 373 | 1.5 | 338 | 1.2 | 449 | 1.5 | 439 | 1.3 | 572 | 1.5 | 550 | 1.4 |

Table 1.4.1-2: Distribution of Type of Intra-operative Complications (Posterior Capsular Rupture) CSR 2007-2014

| Year | 2007* | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | 18380 | | 21496 | | 24438 | | 28506 | | 30611 | | 32473 | | 37150 | | 40532 | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Patient with intra-op complication | 1999 | 10.9 | 1636 | 7.6 | 1645 | 6.7 | 1610 | 5.6 | 1787 | 5.8 | 1702 | 5.2 | 1998 | 5.4 | 2159 | 5.3 |
| **Types of complications** | | | | | | | | | | | | | | | | |
| PCR and Others | 764 | 4.2 | 798 | 3.7 | 858 | 3.5 | 840 | 2.9 | 936 | 3.1 | 870 | 2.7 | 1017 | 2.7 | 1100 | 2.7 |
| PCR Only | | | 347 | 1.6 | 403 | 1.6 | 402 | 1.4 | 485 | 1.6 | 481 | 1.5 | 547 | 1.5 | 588 | 1.4 |

**Data from 2007 could not be analyzed due to improperly organized old data.*
*PCR and Others = including PCR only, and PCR+Others*

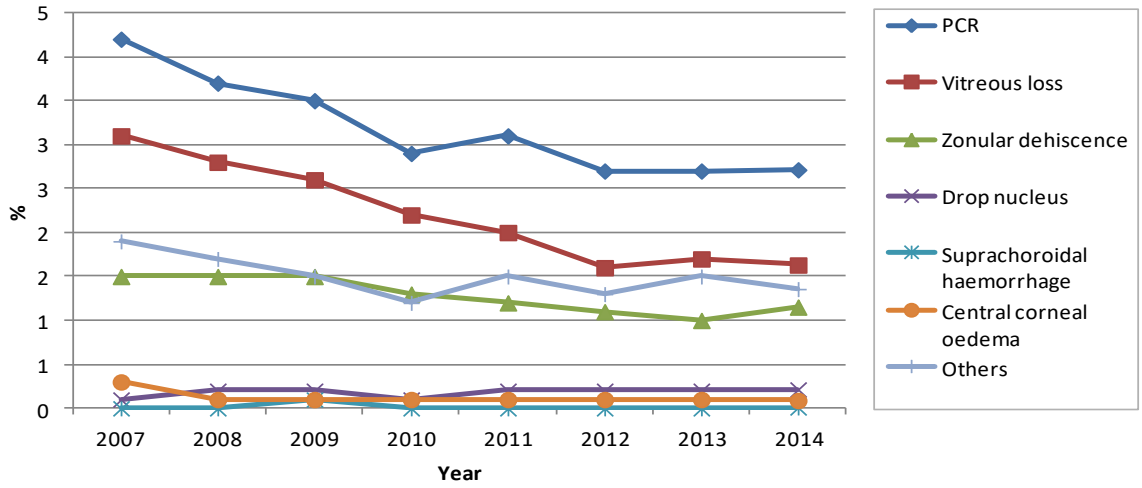



Figure 1.4.1-1: Distribution of Specific Type of Intra-operative Complications, CSR 2002-2014

### 1.4.2 Intra-operative Complications by Type of Cataract Surgery

Similar to previous years, phacoemulsification demonstrated the lowest rate of intra-operative complications in 2014. It was followed by lens aspiration and ECCE. The percentage of intra-operative complications in phacoemulsification remained the same, whereas the percentage of complications was higher in 2014 in ECCE compared to the previous years.

Table 1.4.2-1: Intra-operative Complications by Types of Cataract Surgery, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | | 2010 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | N | n | % | N | n | % |
| Phaco | 969 | 8.1 | 753 | 5.1 | 17717 | 787 | 4.4 | 21810 | 798 | 3.7 |
| ECCE | 691 | 12.5 | 532 | 9.5 | 5457 | 460 | 8.4 | 5363 | 442 | 8.2 |
| Lens Aspiration | 51 | 15.8 | 31 | 9.1 | 400 | 38 | 9.5 | 451 | 34 | 7.5 |
| ICCE | 63 | 44.7 | 60 | 46.5 | 134 | 64 | 47.8 | 143 | 64 | 44.8 |
| Phaco → ECCE | 225 | 52.1 | 240 | 45.8 | 573 | 276 | 48.2 | 586 | 249 | 42.5 |
| Others | - | - | 16 | 25.8 | 74 | 8 | 10.8 | 104 | 20 | 19.2 |
| Missing | 9 | 20.0 | 4 | 12.1 | 83 | 12 | 14.5 | 49 | 3 | 6.1 |

| Year | 2011 | | | 2012 | | | 2013 | | | 2014 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | n | % | N | n | % | N | n | % | N | n | % |
| Phaco | 23872 | 927 | 3.9 | 26345 | 930 | 3.5 | 31625 | 1112 | 3.5 | 35429 | 1282 | 3.6 |
| ECCE | 5291 | 404 | 7.6 | 4784 | 359 | 7.5 | 4086 | 373 | 9.1 | 3613 | 340 | 9.4 |
| Lens Aspiration | 460 | 29 | 6.3 | 444 | 26 | 5.9 | 364 | 31 | 8.5 | 370 | 23 | 6.2 |
| ICCE | 123 | 53 | 43.1 | 136 | 58 | 42.6 | 173 | 68 | 39.3 | 176 | 70 | 39.8 |
| Phaco → ECCE | 652 | 316 | 48.5 | 621 | 300 | 48.3 | 769 | 383 | 49.8 | 805 | 402 | 49.9 |
| Others | 132 | 21 | 15.9 | 110 | 27 | 24.5 | 84 | 20 | 23.8 | 118 | 37 | 31.4 |
| Missing | 81 | 37 | 45.7 | 33 | 2 | 6.1 | 49 | 11 | 22.4 | 21 | 5 | 23.8 |

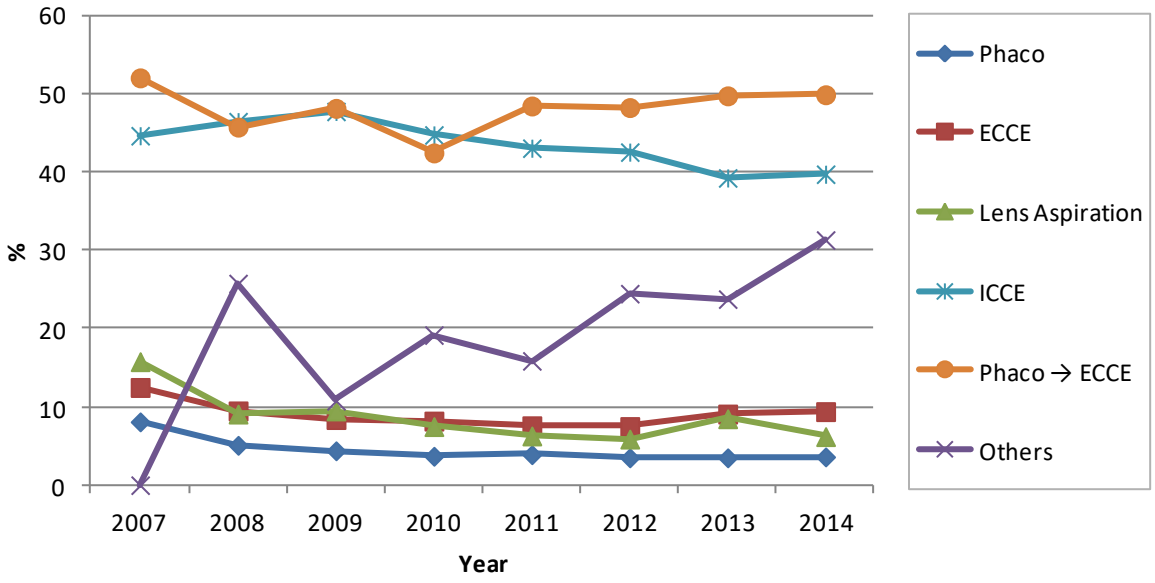



Figure 1.4.2-1: Intra-operative Complications by Type of Cataract Surgery, CSR 2007-2014

Table 1.4.2-2: Types Intra-operative Complications by Types of Cataract Surgery, CSR 2014

| | All Surgeries | | Phaco | | ECCE | | Lens Aspiration | | ICCE | | Phaco converted to ECCE | | Others | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of patients (N) | 40532 | | 35429 | | 3613 | | 370 | | 176 | | 805 | | 118 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-op complication | 2159 | 5.3 | 1282 | 3.6 | 340 | 9.4 | 23 | 6.2 | 70 | 39.8 | 402 | 49.9 | 37 | 31.4 |
| Posterior capsule rupture | 1100 | 2.7 | 731 | 2.1 | 133 | 3.7 | 10 | 2.7 | 9 | 5.1 | 205 | 25.5 | 10 | 8.5 |
| Vitreous loss | 661 | 1.6 | 301 | 0.8 | 110 | 3.0 | 6 | 1.6 | 47 | 26.7 | 182 | 22.6 | 14 | 11.9 |
| Zonular dehiscence | 467 | 1.2 | 203 | 0.6 | 82 | 2.3 | 2 | 0.5 | 34 | 19.3 | 132 | 16.4 | 14 | 11.9 |
| Nucleus drop (or dropped nucleus) | 87 | 0.2 | 72 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 13 | 1.6 | 2 | 1.7 |
| Suprachoroidal haemorrhage | 4 | 0.0 | 0 | 0.0 | 3 | 0.1 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Central corneal oedema | 36 | 0.1 | 21 | 0.1 | 9 | 0.2 | 0 | 0.0 | 0 | 0.0 | 5 | 0.6 | 1 | 0.8 |
| Others | 550 | 1.4 | 326 | 0.9 | 120 | 3.3 | 11 | 3.0 | 8 | 4.5 | 74 | 9.2 | 8 | 6.8 |

Table 1.4.2-3: Distribution of the Types Intra-operative Complications by SDP (All Cataract Surgeries), CSR 2014

| Hospital | No. of patients (N) | Any intra-op complication | | PCR | | Vitreous loss | | Zonular Dehiscence | | Nucleus drp (or dropped nucleus) | | Suprachoroidal Haemorrhage | | Central Corneal Edema | | Others | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **All centre** | 40532 | 2159 | 5.3 | 1100 | 2.7 | 661 | 1.6 | 467 | 1.2 | 87 | 0.2 | 4 | 0.0 | 36 | 0.1 | 550 | 1.4 |
| Alor Setar | 2106 | 80 | 3.8 | 53 | 2.5 | 25 | 1.2 | 12 | 0.6 | 4 | 0.2 | 0 | 0.0 | 0 | 0.0 | 17 | 0.8 |
| Ampang | 946 | 62 | 6.6 | 37 | 3.9 | 28 | 3.0 | 17 | 1.8 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 10 | 1.1 |
| Batu Pahat | 467 | 37 | 7.9 | 22 | 4.7 | 18 | 3.9 | 7 | 1.5 | 2 | 0.4 | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 |
| Bintulu | 374 | 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 | 998 | 31 | 3.1 | 24 | 2.4 | 10 | 1.0 | 3 | 0.3 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 8 | 0.8 |
| Ipoh | 2759 | 108 | 3.9 | 62 | 2.2 | 26 | 0.9 | 27 | 1.0 | 6 | 0.2 | 0 | 0.0 | 3 | 0.1 | 11 | 0.4 |
| Johor Bahru | 1381 | 102 | 7.4 | 47 | 3.4 | 17 | 1.2 | 40 | 2.9 | 4 | 0.3 | 0 | 0.0 | 2 | 0.1 | 10 | 0.7 |
| Kangar | 426 | 30 | 7.0 | 24 | 5.6 | 0 | 0.0 | 6 | 1.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kemaman | 72 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Keningau | 133 | 9 | 6.8 | 7 | 5.3 | 4 | 3.0 | 2 | 1.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Klang | 1461 | 64 | 4.4 | 13 | 0.9 | 3 | 0.2 | 17 | 1.2 | 1 | 0.1 | 0 | 0.0 | 2 | 0.1 | 31 | 2.1 |
| Kota Bharu | 285 | 13 | 4.6 | 1 | 0.4 | 1 | 0.4 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 4 | 1.4 | 8 | 2.8 |
| Kota Kinabalu | 1040 | 91 | 8.8 | 56 | 5.4 | 23 | 2.2 | 23 | 2.2 | 6 | 0.6 | 0 | 0.0 | 0 | 0.0 | 13 | 1.3 |
| Kuala Krai | 365 | 40 | 11.0 | 27 | 7.4 | 19 | 5.2 | 7 | 1.9 | 2 | 0.5 | 1 | 0.3 | 0 | 0.0 | 8 | 2.2 |
| Kuala Lumpur | 1932 | 71 | 3.7 | 39 | 2.0 | 29 | 1.5 | 19 | 1.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 10 | 0.5 |
| Kuala Pilah | 493 | 15 | 3.0 | 5 | 1.0 | 4 | 0.8 | 1 | 0.2 | 1 | 0.2 | 0 | 0.0 | 1 | 0.2 | 8 | 1.6 |
| Kuala Terengganu | 900 | 74 | 8.2 | 36 | 4.0 | 23 | 2.6 | 19 | 2.1 | 5 | 0.6 | 0 | 0.0 | 0 | 0.0 | 22 | 2.4 |
| Kuantan | 576 | 31 | 5.4 | 21 | 3.6 | 2 | 0.3 | 2 | 0.3 | 0 | 0.0 | 0 | 0.0 | 5 | 0.9 | 3 | 0.5 |
| Kuching | 2068 | 126 | 6.1 | 84 | 4.1 | 46 | 2.2 | 19 | 0.9 | 10 | 0.5 | 0 | 0.0 | 5 | 0.2 | 13 | 0.6 |
| Kulim | 265 | 10 | 3.8 | 3 | 1.1 | 1 | 0.4 | 1 | 0.4 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 6 | 2.3 |
| Melaka | 2139 | 121 | 5.7 | 86 | 4.0 | 45 | 2.1 | 18 | 0.8 | 4 | 0.2 | 0 | 0.0 | 0 | 0.0 | 11 | 0.5 |
| Miri | 949 | 9 | 0.9 | 5 | 0.5 | 4 | 0.4 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Muar | 729 | 69 | 9.5 | 48 | 6.6 | 34 | 4.7 | 14 | 1.9 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 6 | 0.8 |
| Pulau Pinang | 1791 | 52 | 2.9 | 27 | 1.5 | 19 | 1.1 | 13 | 0.7 | 8 | 0.4 | 0 | 0.0 | 0 | 0.0 | 7 | 0.4 |

| Hospital | No. of patients (N) | Any intra-op complication | | PCR | | Vitreous loss | | Zonular Dehiscence | | Nucleus drp (or dropped nucleus) | | Suprachoroidal Haemorrhage | | Central Corneal Edema | | Others | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Putrajaya | 367 | 24 | 6.5 | 9 | 2.5 | 17 | 4.6 | 11 | 3.0 | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 |
| Sandakan | 237 | 6 | 2.5 | 4 | 1.7 | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.8 | 0 | 0.0 |
| Sarikei | 555 | 12 | 2.2 | 9 | 1.6 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 |
| Selayang | 899 | 72 | 8.0 | 38 | 4.2 | 20 | 2.2 | 25 | 2.8 | 3 | 0.3 | 0 | 0.0 | 1 | 0.1 | 14 | 1.6 |
| Serdang | 1265 | 99 | 7.8 | 51 | 4.0 | 55 | 4.3 | 31 | 2.5 | 3 | 0.2 | 1 | 0.1 | 0 | 0.0 | 24 | 1.9 |
| Seremban | 1585 | 76 | 4.8 | 41 | 2.6 | 39 | 2.5 | 25 | 1.6 | 6 | 0.4 | 0 | 0.0 | 2 | 0.1 | 10 | 0.6 |
| Sibu | 866 | 39 | 4.5 | 9 | 1.0 | 11 | 1.3 | 11 | 1.3 | 2 | 0.2 | 0 | 0.0 | 2 | 0.2 | 10 | 1.2 |
| Sri Manjung | 625 | 54 | 8.6 | 17 | 2.7 | 9 | 1.4 | 9 | 1.4 | 1 | 0.2 | 0 | 0.0 | 1 | 0.2 | 26 | 4.2 |
| Sultan Ismail | 609 | 27 | 4.4 | 16 | 2.6 | 8 | 1.3 | 0 | 0.0 | 1 | 0.2 | 1 | 0.2 | 0 | 0.0 | 10 | 1.6 |
| Sungai Buloh | 693 | 18 | 2.6 | 11 | 1.6 | 7 | 1.0 | 3 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 0.6 |
| Sungei Petani | 1022 | 48 | 4.7 | 29 | 2.8 | 23 | 2.3 | 11 | 1.1 | 2 | 0.2 | 0 | 0.0 | 1 | 0.1 | 10 | 1.0 |
| Taiping | 1233 | 27 | 2.2 | 16 | 1.3 | 16 | 1.3 | 13 | 1.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.2 |
| Tawau | 540 | 42 | 7.8 | 38 | 7.0 | 14 | 2.6 | 4 | 0.7 | 1 | 0.2 | 0 | 0.0 | 1 | 0.2 | 1 | 0.2 |
| Teluk Intan | 1013 | 24 | 2.4 | 10 | 1.0 | 7 | 0.7 | 10 | 1.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 4 | 0.4 |
| Temerloh | 1047 | 233 | 22.3 | 18 | 1.7 | 14 | 1.3 | 18 | 1.7 | 1 | 0.1 | 0 | 0.0 | 1 | 0.1 | 209 | 20.0 |
| KK1M 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 |
| KK1M 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 |
| KK1M 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 |
| MAIWP | 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 |

Table 1.4.2-4: Distribution of the Types Intra-operative Complications by SDP (Phaco converted to ECCE), CSR 2014

| Hospital | 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 | % |
| **All centre** | 805 | 402 | 49.9 | 205 | 25.5 | 182 | 22.6 | 132 | 16.4 | 13 | 1.6 | 1 | 0.1 | 5 | 0.6 | 74 | 9.2 |
| Alor Setar | 24 | 7 | 29.2 | 3 | 12.5 | 5 | 20.8 | 3 | 12.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Ampang | 20 | 9 | 45.0 | 5 | 25.0 | 2 | 10.0 | 2 | 10.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 10.0 |
| Batu Pahat | 38 | 21 | 55.3 | 11 | 28.9 | 11 | 28.9 | 5 | 13.2 | 1 | 2.6 | 0 | 0.0 | 0 | 0.0 | 2 | 5.3 |
| Bintulu | 12 | 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 | 7 | 4 | 57.1 | 4 | 57.1 | 2 | 28.6 | 1 | 14.3 | 1 | 14.3 | 0 | 0.0 | 0 | 0.0 | 2 | 28.6 |
| Ipoh | 40 | 18 | 45.0 | 4 | 10.0 | 5 | 12.5 | 9 | 22.5 | 0 | 0.0 | 0 | 0.0 | 2 | 5.0 | 2 | 5.0 |
| Johor Bahru | 26 | 21 | 80.8 | 10 | 38.5 | 3 | 11.5 | 10 | 38.5 | 1 | 3.8 | 0 | 0.0 | 0 | 0.0 | 1 | 3.8 |
| Kangar | 6 | 4 | 66.7 | 4 | 66.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kemaman | 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 |
| Keningau | 3 | 2 | 66.7 | 1 | 33.3 | 1 | 33.3 | 1 | 33.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Klang | 17 | 10 | 58.8 | 3 | 17.6 | 2 | 11.8 | 4 | 23.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 17.6 |
| Kota Bharu | 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 |
| Kota Kinabalu | 22 | 13 | 59.1 | 7 | 31.8 | 2 | 9.1 | 7 | 31.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 4.5 |
| Kuala Krai | 13 | 8 | 61.5 | 7 | 53.8 | 5 | 38.5 | 1 | 7.7 | 0 | 0.0 | 1 | 7.7 | 0 | 0.0 | 1 | 7.7 |
| Kuala Lumpur | 32 | 15 | 46.9 | 9 | 28.1 | 6 | 18.8 | 4 | 12.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 6.3 |
| Kuala Pilah | 21 | 7 | 33.3 | 4 | 19.0 | 4 | 19.0 | 1 | 4.8 | 1 | 4.8 | 0 | 0.0 | 0 | 0.0 | 2 | 9.5 |
| Kuala Terengganu | 17 | 11 | 64.7 | 7 | 41.2 | 8 | 47.1 | 5 | 29.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuantan | 11 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Kuching | 29 | 20 | 69.0 | 8 | 27.6 | 13 | 44.8 | 6 | 20.7 | 0 | 0.0 | 0 | 0.0 | 1 | 3.4 | 2 | 6.9 |
| Kulim | 2 | 1 | 50.0 | 1 | 50.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |

| Hospital | 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 | % |
| Melaka | 35 | 17 | 48.6 | 13 | 37.1 | 7 | 20.0 | 3 | 8.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 5.7 |
| Miri | 7 | 1 | 14.3 | 1 | 14.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Muar | 26 | 19 | 73.1 | 12 | 46.2 | 13 | 50.0 | 5 | 19.2 | 1 | 3.8 | 0 | 0.0 | 0 | 0.0 | 2 | 7.7 |
| Pulau Pinang | 24 | 11 | 45.8 | 3 | 12.5 | 7 | 29.2 | 6 | 25.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 4.2 |
| Putrajaya | 21 | 6 | 28.6 | 1 | 4.8 | 5 | 23.8 | 4 | 19.0 | 0 | 0.0 | 0 | 0.0 | 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 |
| Sarikei | 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 |
| Selayang | 20 | 16 | 80.0 | 7 | 35.0 | 5 | 25.0 | 8 | 40.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 10.0 |
| Serdang | 42 | 29 | 69.0 | 18 | 42.9 | 22 | 52.4 | 10 | 23.8 | 3 | 7.1 | 0 | 0.0 | 0 | 0.0 | 7 | 16.7 |
| Seremban | 21 | 14 | 66.7 | 8 | 38.1 | 11 | 52.4 | 5 | 23.8 | 1 | 4.8 | 0 | 0.0 | 1 | 4.8 | 1 | 4.8 |
| Sibu | 8 | 5 | 62.5 | 0 | 0.0 | 0 | 0.0 | 3 | 37.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 25.0 |
| Sri Manjung | 1 | 1 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 100.0 |
| Sultan Ismail | 29 | 9 | 31.0 | 7 | 24.1 | 5 | 17.2 | 0 | 0.0 | 1 | 3.4 | 0 | 0.0 | 0 | 0.0 | 2 | 6.9 |
| Sungai Buloh | 29 | 5 | 17.2 | 3 | 10.3 | 2 | 6.9 | 2 | 6.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sungei Petani | 43 | 17 | 39.5 | 10 | 23.3 | 8 | 18.6 | 6 | 14.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 9.3 |
| Taiping | 7 | 1 | 14.3 | 0 | 0.0 | 0 | 0.0 | 1 | 14.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Tawau | 32 | 15 | 46.9 | 15 | 46.9 | 3 | 9.4 | 0 | 0.0 | 1 | 3.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Teluk Intan | 13 | 6 | 46.2 | 1 | 7.7 | 2 | 15.4 | 3 | 23.1 | 0 | 0.0 | 0 | 0.0 | 1 | 7.7 | 1 | 7.7 |
| Temerloh | 37 | 30 | 81.1 | 5 | 13.5 | 6 | 16.2 | 8 | 21.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 24 | 64.9 |
| KK1M Terengganu | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Kelantan | 9 | 2 | 22.2 | 1 | 11.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 11.1 |
| KK1M Sarawak | 9 | 6 | 66.7 | 2 | 22.2 | 1 | 11.1 | 2 | 22.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 22.2 |
| MAIWP | 39 | 21 | 53.8 | 10 | 25.6 | 16 | 41.0 | 7 | 17.9 | 2 | 5.1 | 0 | 0.0 | 0 | 0.0 | 2 | 5.1 |

### 1.4.3 Intra-operative Complications by Combined Surgery

The percentage of intra-operative complications was higher in combined surgery when compared to cataract surgery performed alone. PCR and vitreous loss remained the commonest complications encountered.

Table 1.4.3-1: Distribution of Intra-operative Complications by Any Combined Surgery, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of combined surgery (N) | 891 | | 664 | | 871 | | 1082 | | 1194 | | 1221 | | 1026 | | 1028 | |
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Any intra-operative complication | 131 | 14.7 | 89 | 10.0 | 113 | 13.0 | 121 | 11.2 | 222 | 18.6 | 240 | 19.7 | 149 | 14.5 | 175 | 17.0 |
| **Types of complications** | | | | | | | | | | | | | | | | |
| PCR | 56 | 6.3 | 54 | 6.1 | 62 | 7.1 | 61 | 5.6 | 140 | 11.7 | 146 | 12.0 | 85 | 8.3 | 111 | 10.8 |
| Vitreous loss | 41 | 4.6 | 40 | 4.5 | 51 | 5.9 | 53 | 4.9 | 101 | 8.5 | 123 | 10.1 | 75 | 7.3 | 83 | 8.1 |
| Zonular dehiscence | 21 | 2.4 | 15 | 1.7 | 21 | 2.4 | 28 | 2.6 | 49 | 4.1 | 61 | 5.0 | 37 | 3.6 | 46 | 4.5 |
| Nucleus drop (or dropped nucleus) | 4 | 0.4 | 3 | 0.3 | 8 | 0.9 | 10 | 0.9 | 20 | 1.7 | 16 | 1.3 | 12 | 1.2 | 18 | 1.8 |
| Suprachoroidal haemorrhage | 0 | 0.0 | 0.0 | 0.0 | 4 | 0.5 | 1 | 0.1 | 2 | 0.2 | 2 | 0.2 | 0 | 0.0 | 1 | 0.1 |
| Central corneal oedema | 7 | 0.8 | 3 | 0.3 | 1 | 0.1 | 2 | 0.2 | 0 | 0.0 | 2 | 0.2 | 1 | 0.1 | 2 | 0.2 |
| Others | 30 | 3.4 | 14 | 1.6 | 21 | 2.4 | 24 | 2.2 | 29 | 2.4 | 38 | 3.1 | 25 | 2.4 | 22 | 2.1 |

Table 1.4.3-2: Distribution of Intra-operative Complications by Specific Combined Surgery, CSR 2014

| | All Surgeries | | Any Combined Surgery | | Pterygium Surgery | | Filtering Surgery | | Vitreo-Retinal Surgery | | Penetrating Keratoplasty | | Others | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients (N) | 40532 | | 1028 | | 115 | | 95 | | 532 | | 2 | | 304 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-op complication | 2159 | 5.3 | 175 | 17.0 | 2 | 1.7 | 4 | 4.2 | 41 | 7.7 | 0 | 0.0 | 132 | 43.4 |
| PCR | 1100 | 2.7 | 111 | 10.8 | 1 | 0.9 | 3 | 3.2 | 21 | 3.9 | 0 | 0.0 | 87 | 28.6 |
| Vitreous loss | 661 | 1.6 | 83 | 8.1 | 2 | 1.7 | 1 | 1.1 | 5 | 0.9 | 0 | 0.0 | 75 | 24.7 |
| Zonular dehiscene | 467 | 1.2 | 46 | 4.5 | 0 | 0.0 | 1 | 1.1 | 13 | 2.4 | 0 | 0.0 | 34 | 11.2 |
| Nucleus drop (or dropped nucleus) | 87 | 0.2 | 18 | 1.8 | 0 | 0.0 | 0 | 0.0 | 11 | 2.1 | 0 | 0.0 | 7 | 2.3 |
| Suprachoroidal haemorrhage | 4 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 |
| Central corneal oedema | 36 | 0.1 | 2 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.7 |
| Others | 550 | 1.4 | 22 | 2.1 | 0 | 0.0 | 0 | 0.0 | 7 | 1.3 | 0 | 0.0 | 17 | 5.6 |

Table 1.4.3-3: Distribution of Intra-operative Complications when Combined with Filtering Surgery, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 131 | | 142 | | 132 | | 121 | | 64 | | 71 | | 114 | | 95 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-op complication | 24 | 18.3 | 9 | 6.3 | 16 | 12.1 | 8 | 6.6 | 5 | 7.8 | 3 | 4.2 | 8 | 7.0 | 4 | 4.2 |
| Posterior capsule rupture | 9 | 6.9 | 3 | 2.1 | 4 | 3.0 | 3 | 2.5 | 1 | 1.6 | 2 | 2.8 | 3 | 2.6 | 3 | 3.2 |
| Vitreous loss | 7 | 5.3 | 5 | 3.5 | 7 | 5.3 | 2 | 1.7 | 3 | 4.7 | 1 | 1.4 | 1 | 0.9 | 1 | 1.1 |
| Zonular dehiscence | 4 | 3.1 | 3 | 2.1 | 5 | 3.8 | 1 | 0.8 | 3 | 4.7 | 0 | 0.0 | 5 | 4.4 | 1 | 1.1 |
| Nucleus drop (or 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 |
| Suprachoroidal haemorrhage | 0 | 0.0 | 0 | 0.0 | 2 | 1.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Central corneal oedema | 3 | 2.3 | 2 | 1.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 5 | 3.8 | 1 | 0.7 | 3 | 2.3 | 3 | 2.5 | 0 | 0.0 | 0 | 0.0 | 1 | 0.9 | 0 | 0.0 |

Table 1.4.3-4: Distribution of Intra-operative Complications when Combined with Vitreoretinal Surgery, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 435 | | 237 | | 402 | | 601 | | 672 | | 585 | | 536 | | 532 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-op complication | 45 | 10.3 | 21 | 8.9 | 32 | 8.0 | 35 | 5.8 | 69 | 10.3 | 45 | 7.7 | 32 | 6.0 | 41 | 7.7 |
| Posterior capsule rupture | 18 | 4.1 | 17 | 7.2 | 18 | 4.5 | 22 | 3.7 | 41 | 6.1 | 23 | 3.9 | 16 | 3.0 | 21 | 3.9 |
| Vitreous loss | 11 | 2.5 | 6 | 2.5 | 5 | 1.2 | 9 | 1.5 | 10 | 1.5 | 8 | 1.4 | 9 | 1.7 | 5 | 0.9 |
| Zonular dehiscence | 6 | 1.4 | 1 | 0.4 | 2 | 0.5 | 5 | 0.8 | 13 | 1.9 | 6 | 1.0 | 4 | 0.7 | 13 | 2.4 |
| Nucleus drop (or dropped nucleus) | 3 | 0.7 | 2 | 0.8 | 6 | 1.5 | 6 | 1.0 | 15 | 2.2 | 7 | 1.2 | 6 | 1.1 | 11 | 2.1 |
| Suprachoroidal haemorrhage | 0 | 0.0 | 0 | 0.0 | 2 | 0.5 | 0 | 0.0 | 2 | 0.3 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| Central corneal oedema | 3 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 |
| Others | 12 | 2.8 | 3 | 1.3 | 5 | 1.2 | 4 | 0.7 | 10 | 1.5 | 15 | 2.6 | 5 | 0.9 | 7 | 1.3 |

### 1.4.4 Intra-operative Complications by Type of Local Anaesthesia

Table 1.4.4-1: Intra-operative Complications by Types of Local Anaesthesia, CSR 2014

| | All Local Anaesthesia | | Retrobulbar | | Peribulbar | | Subtenon | | Sub-Conjunctival | | Facial Block | | Topical | | Intracameral | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 37654 | | 436 | | 474 | | 9351 | | 1352 | | 14 | | 25068 | | 6311 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-op complication | 1984 | 5.3 | 16 | 3.7 | 34 | 7.2 | 799 | 8.5 | 70 | 5.2 | 1 | 7.1 | 1135 | 4.5 | 285 | 4.5 |
| Posterior capsule rupture | 1011 | 2.7 | 5 | 1.1 | 13 | 2.7 | 351 | 3.8 | 49 | 3.6 | 0 | 0.0 | 635 | 2.5 | 143 | 2.3 |
| Vitreous loss | 624 | 1.7 | 0 | 0.0 | 14 | 3.0 | 281 | 3.0 | 29 | 2.1 | 1 | 7.1 | 371 | 1.5 | 94 | 1.5 |
| Zonular dehiscene | 425 | 1.1 | 2 | 0.5 | 9 | 1.9 | 208 | 2.2 | 9 | 0.7 | 0 | 0.0 | 245 | 1.0 | 78 | 1.2 |
| Nucleus drop (or dropped nucleus) | 82 | 0.2 | 2 | 0.5 | 1 | 0.2 | 15 | 0.2 | 4 | 0.3 | 0 | 0.0 | 62 | 0.2 | 10 | 0.2 |
| Suprachoroidal haemorrhage | 3 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 3 | 0.0 | 0 | 0.0 |
| Central corneal oedema | 33 | 0.1 | 1 | 0.2 | 0 | 0.0 | 17 | 0.2 | 2 | 0.1 | 0 | 0.0 | 19 | 0.1 | 1 | 0.0 |
| Other | 503 | 1.3 | 8 | 1.8 | 12 | 2.5 | 226 | 2.4 | 4 | 0.3 | 0 | 0.0 | 215 | 0.9 | 69 | 1.1 |

*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

In 2014, intra-operative complications were highest in surgeries performed by the gazeting specialists. The complications were mainly PCR and vitreous loss.

Table 1.4.5-1: Intra-operative Complications by Surgeon Status (All Surgery), CSR 2007-2014

(1) Specialist

| Year | 2007 | | 2008* | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 14327 | | 16846 | | 19400 | | 24216 | | 25590 | | 27684 | | 32861 | | 36197 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-operative complication | 1485 | 10.4 | 1144 | 6.8 | 1218 | 6.3 | 1248 | 5.2 | 1368 | 5.3 | 1323 | 4.8 | 1649 | 5.0 | 1758 | 4.9 |
| PCR | 546 | 3.8 | 538 | 3.2 | 610 | 3.1 | 649 | 2.7 | 706 | 2.8 | 642 | 2.3 | 803 | 2.4 | 864 | 2.4 |
| Vitreous loss | 405 | 2.8 | 417 | 2.5 | 474 | 2.4 | 473 | 2.0 | 438 | 1.7 | 382 | 1.4 | 513 | 1.6 | 504 | 1.4 |
| Zonular dehiscense | 204 | 1.4 | 232 | 1.4 | 293 | 1.5 | 300 | 1.2 | 285 | 1.1 | 282 | 1.0 | 337 | 1.0 | 391 | 1.1 |
| Nucleus drop (or dropped nucleus) | 20 | 0.1 | 24 | 0.1 | 30 | 0.2 | 33 | 0.1 | 49 | 0.2 | 43 | 0.2 | 52 | 0.2 | 71 | 0.2 |
| Suprachoroidal hemorrhage | 5 | 0.0 | 3 | 0.0 | 10 | 0.1 | 6 | 0.0 | 7 | 0.0 | 7 | 0.0 | 6 | 0.0 | 4 | 0.0 |
| Central corneal edema | 50 | 0.4 | 19 | 0.1 | 13 | 0.1 | 19 | 0.1 | 33 | 0.1 | 23 | 0.1 | 20 | 0.1 | 29 | 0.1 |
| Others | 261 | 1.8 | 279 | 1.7 | 289 | 1.5 | 254 | 1.0 | 347 | 1.4 | 371 | 1.3 | 499 | 1.5 | 466 | 1.3 |

(2) Gazetting Specialist

| Year | 2007 | | 2008* | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 1276 | | 1399 | | 2053 | | 1405 | | 2487 | | 2411 | | 2014 | | 2034 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-operative complication | 175 | 13.7 | 167 | 11.9 | 171 | 8.3 | 98 | 7.0 | 182 | 7.3 | 190 | 7.9 | 147 | 7.3 | 208 | 10.2 |
| PCR | 85 | 6.7 | 91 | 6.5 | 96 | 4.7 | 44 | 3.1 | 113 | 4.5 | 125 | 5.2 | 90 | 4.5 | 116 | 5.7 |
| Vitreous loss | 54 | 4.2 | 76 | 5.4 | 73 | 3.6 | 35 | 2.5 | 84 | 3.4 | 72 | 3.0 | 45 | 2.2 | 72 | 3.5 |
| Zonular dehiscense | 24 | 1.9 | 32 | 2.3 | 33 | 1.6 | 30 | 2.1 | 33 | 1.3 | 34 | 1.4 | 24 | 1.2 | 41 | 2.0 |
| Nucleus drop (or dropped nucleus) | 0 | 0.0 | 3 | 0.2 | 3 | 0.1 | 2 | 0.1 | 4 | 0.2 | 8 | 0.3 | 6 | 0.3 | 5 | 0.2 |
| Suprachoroidal hemorrhage | 1 | 0.1 | 1 | 0.1 | 2 | 0.1 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| Central corneal edema | 5 | 0.4 | 5 | 0.4 | 7 | 0.3 | 3 | 0.2 | 0 | 0.0 | 2 | 0.1 | 2 | 0.1 | 5 | 0.2 |
| Others | 37 | 2.9 | 37 | 2.9 | 28 | 1.4 | 27 | 1.9 | 27 | 1.1 | 31 | 1.3 | 32 | 1.6 | 49 | 2.4 |

(3) Medical Officer

| Year | 2007 | | 2008* | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 2690 | | 2697 | | 2750 | | 2871 | | 2478 | | 2354 | | 2244 | | 2249 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-operative complication | 330 | 12.3 | 264 | 9.8 | 242 | 8.8 | 263 | 9.2 | 202 | 8.2 | 189 | 8.0 | 199 | 8.9 | 189 | 8.4 |
| PCR | 126 | 4.7 | 148 | 5.5 | 139 | 5.1 | 147 | 5.1 | 116 | 4.7 | 103 | 4.4 | 124 | 5.5 | 117 | 5.2 |
| Vitreous loss | 105 | 3.9 | 105 | 3.9 | 92 | 3.3 | 131 | 4.6 | 89 | 3.6 | 75 | 3.2 | 86 | 3.8 | 82 | 3.6 |
| Zonular dehiscense | 43 | 1.6 | 46 | 1.7 | 45 | 1.6 | 47 | 1.6 | 43 | 1.7 | 43 | 1.8 | 30 | 1.3 | 35 | 1.6 |
| Nucleus drop (or dropped nucleus) | 1 | 0.0 | 4 | 0.2 | 7 | 0.3 | 3 | 0.1 | 5 | 0.2 | 5 | 0.2 | 5 | 0.2 | 11 | 0.5 |
| Suprachoroidal hemorrhage | 3 | 0.1 | 4 | 0.2 | 1 | 0.0 | 2 | 0.1 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| Central corneal edema | 2 | 0.1 | 3 | 0.1 | 2 | 0.1 | 4 | 0.1 | 3 | 0.1 | 5 | 0.2 | 1 | 0.0 | 2 | 0.1 |
| Others | 51 | 1.9 | 51 | 1.9 | 56 | 2.0 | 56 | 2.0 | 42 | 1.7 | 37 | 1.6 | 38 | 1.7 | 34 | 1.5 |

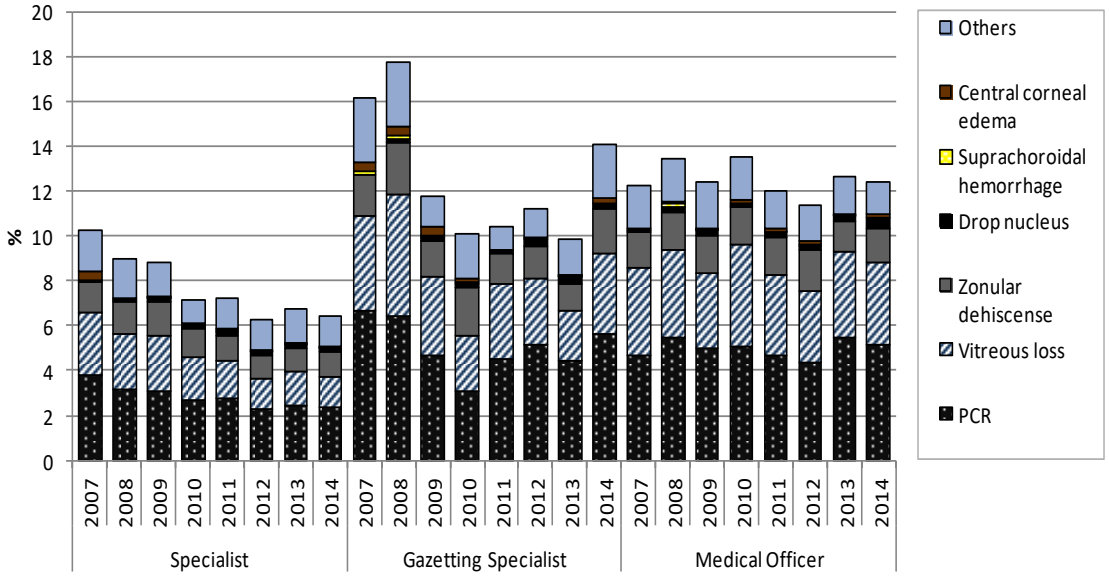



Figure 1.4.5-1: Percentage Distribution of Intra-operative Complications by Surgeon Status (All Surgery), CSR 2007-2014

Table 1.4.5-2: Intra-operative Complications by Surgeon Status (Phaco), CSR 2009-2014

(1) Specialist

| Year | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 15206 | | 19797 | | 20963 | | 23291 | | 28774 | | 32417 | |
| | **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 |
| PCR | 354 | 2.3 | 408 | 2.1 | 453 | 2.2 | 413 | 1.8 | 534 | 1.9 | 575 | 1.8 |
| Vitreous loss | 201 | 1.3 | 211 | 1.1 | 202 | 1.0 | 168 | 0.7 | 230 | 0.8 | 223 | 0.7 |
| Zonular dehiscense | 118 | 0.8 | 113 | 0.6 | 116 | 0.6 | 121 | 0.5 | 160 | 0.6 | 179 | 0.6 |
| Nucleus drop (or dropped nucleus) | 24 | 0.2 | 26 | 0.1 | 37 | 0.2 | 29 | 0.1 | 42 | 0.1 | 57 | 0.2 |
| Suprachoroidal hemorrhage | 3 | 0.0 | 3 | 0.0 | 1 | 0.0 | 4 | 0.0 | 2 | 0.0 | 0 | 0.0 |
| Central corneal edema | 10 | 0.1 | 13 | 0.1 | 24 | 0.1 | 14 | 0.1 | 8 | 0.0 | 18 | 0.1 |
| Others | 153 | 1.0 | 136 | 0.7 | 195 | 0.9 | 201 | 0.9 | 284 | 1.0 | 291 | 0.9 |

(2) Gazetting Specialist

| Year | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 1422 | | 929 | | 1845 | | 1850 | | 1694 | | 1776 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Any intra-operative complication | 86 | 6.0 | 39 | 4.2 | 86 | 4.7 | 102 | 5.5 | 74 | 4.4 | 132 | 7.4 |
| PCR | 60 | 4.2 | 23 | 2.5 | 67 | 3.6 | 72 | 3.9 | 54 | 3.2 | 89 | 5.0 |
| Vitreous loss | 36 | 2.5 | 10 | 1.1 | 35 | 1.9 | 31 | 1.7 | 21 | 1.2 | 41 | 2.3 |
| Zonular dehiscense | 12 | 0.8 | 8 | 0.9 | 10 | 0.5 | 10 | 0.5 | 4 | 0.2 | 14 | 0.8 |
| Nucleus drop (or dropped nucleus) | 2 | 0.1 | 2 | 0.2 | 1 | 0.1 | 7 | 0.4 | 4 | 0.2 | 4 | 0.2 |
| Suprachoroidal hemorrhage | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Central corneal edema | 3 | 0.2 | 2 | 0.2 | 0 | 0.0 | 2 | 0.1 | 1 | 0.1 | 3 | 0.2 |
| Others | 12 | 0.8 | 9 | 1.0 | 9 | 0.5 | 17 | 0.9 | 17 | 1.0 | 28 | 1.6 |

(3) Medical Officer

| Year | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 923 | | 1078 | | 1050 | | 1182 | | 1132 | | 1189 | |
| | **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 | 7.0 |
| PCR | 47 | 5.1 | 58 | 5.4 | 48 | 4.6 | 53 | 4.5 | 45 | 4.0 | 65 | 5.5 |
| Vitreous loss | 27 | 2.9 | 41 | 3.8 | 33 | 3.1 | 27 | 2.3 | 28 | 2.5 | 35 | 2.9 |
| Zonular dehiscense | 7 | 0.8 | 12 | 1.1 | 4 | 0.4 | 13 | 1.1 | 9 | 0.8 | 10 | 0.8 |
| Nucleus drop (or dropped nucleus) | 2 | 0.2 | 3 | 0.3 | 4 | 0.4 | 3 | 0.3 | 5 | 0.4 | 11 | 0.9 |
| Suprachoroidal hemorrhage | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Central corneal edema | 2 | 0.2 | 4 | 0.4 | 0 | 0.0 | 3 | 0.3 | 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 |

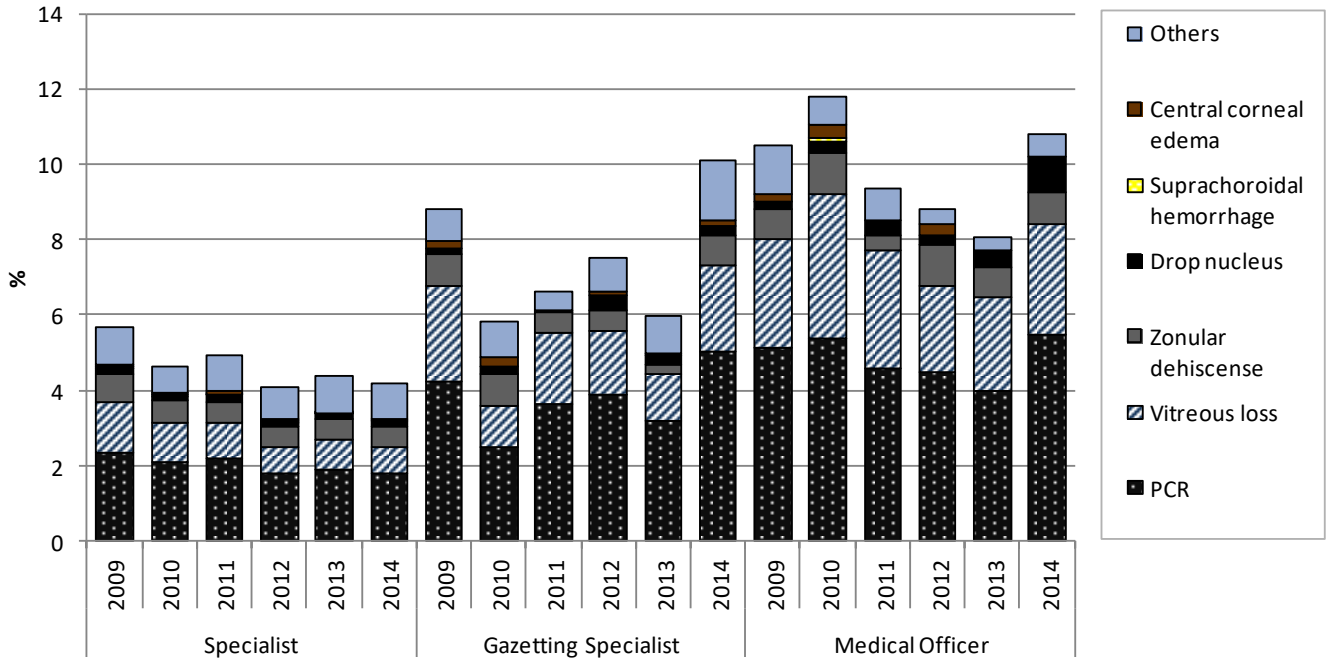



Figure 1.4.5-2: Percentage Distribution of Intra-operative Complications by Surgeon Status (Phaco), CSR 2007-2014

## 1.4.6 Posterior Capsular Rupture (PCR)

Table 1.4.6-1: PCR by SDP, CSR 2007-2014

| Hospital | 2007 | | | 2008 | | | 2009 | | | 2010 | | | 2011 | | | 2012 | | | 2013 | | | 2014 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| Alor Setar | 652 | 10 | 1.5 | 986 | 29 | 3 | 1110 | 22 | 2.0 | 1527 | 25 | 1.6 | 1939 | 46 | 2.4 | 1835 | 46 | 2.5 | 1758 | 48 | 2.7 | 2106 | 53 | 2.5 |
| Ampang | 33 | 0 | 0 | 208 | 3 | 1 | 433 | 14 | 3.2 | 627 | 32 | 5.1 | 708 | 27 | 3.8 | 896 | 40 | 4.5 | 983 | 31 | 3.2 | 946 | 37 | 3.9 |
| Batu Pahat | 550 | 20 | 3.6 | 573 | 14 | 2 | 602 | 26 | 4.3 | 411 | 15 | 3.6 | 554 | 30 | 5.4 | 608 | 42 | 6.9 | 433 | 22 | 5.1 | 467 | 22 | 4.7 |
| Bintulu | 0 | 0 | 0 | 30 | 1 | 3 | 124 | 10 | 8.1 | 258 | 7 | 2.7 | 332 | 8 | 2.4 | 391 | 7 | 1.8 | 383 | 1 | 0.3 | 374 | 0 | 0.0 |
| Bukit Mertajam | 697 | 18 | 2.6 | 487 | 8 | 2 | 743 | 16 | 2.2 | 804 | 22 | 2.7 | 803 | 26 | 3.2 | 928 | 31 | 3.3 | 909 | 21 | 2.3 | 998 | 24 | 2.4 |
| Ipoh | 1556 | 77 | 4.9 | 1723 | 59 | 3 | 2137 | 48 | 2.2 | 2199 | 32 | 1.5 | 1826 | 56 | 3.1 | 2932 | 65 | 2.2 | 3032 | 88 | 2.9 | 2759 | 62 | 2.2 |
| Johor Bahru | 1520 | 28 | 1.8 | 1376 | 28 | 2 | 1318 | 57 | 4.3 | 1377 | 30 | 2.2 | 1127 | 29 | 2.6 | 1195 | 32 | 2.7 | 1350 | 42 | 3.1 | 1381 | 47 | 3.4 |
| Kangar | 318 | 8 | 2.5 | 400 | 3 | 1 | 399 | 11 | 2.8 | 400 | 13 | 3.3 | 403 | 15 | 3.7 | 454 | 13 | 2.9 | 466 | 22 | 4.7 | 426 | 24 | 5.6 |
| Kemaman | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 47 | 0 | 0.0 | 72 | 0 | 0.0 |
| Keningau | 0 | 0 | 0 | 34 | 1 | 3 | 31 | 1 | 3.2 | 76 | 1 | 1.3 | 52 | 0 | 0.0 | 17 | 0 | 0.0 | 15 | 1 | 6.7 | 133 | 7 | 5.3 |
| Klang | 1040 | 40 | 3.8 | 1217 | 34 | 3 | 904 | 27 | 3.0 | 1007 | 26 | 2.6 | 1061 | 20 | 1.9 | 1411 | 6 | 0.4 | 1612 | 12 | 0.7 | 1461 | 13 | 0.9 |
| Kota Bharu | 807 | 38 | 4.7 | 739 | 33 | 5 | 911 | 33 | 3.6 | 960 | 31 | 3.2 | 946 | 40 | 4.2 | 545 | 13 | 2.4 | 682 | 16 | 2.3 | 285 | 1 | 0.4 |
| Kota Kinabalu | 565 | 20 | 3.5 | 351 | 3 | 1 | 433 | 16 | 3.7 | 624 | 24 | 3.8 | 686 | 46 | 6.7 | 763 | 38 | 5.0 | 978 | 66 | 6.7 | 1040 | 56 | 5.4 |
| Kuala Krai | 125 | 2 | 1.6 | 170 | 7 | 4 | 175 | 4 | 2.3 | 217 | 3 | 1.4 | 240 | 11 | 4.6 | 247 | 12 | 4.9 | 397 | 14 | 3.5 | 365 | 27 | 7.4 |
| Kuala Lumpur | 0 | 0 | 0 | 40 | 3 | 8 | 1405 | 35 | 2.5 | 1648 | 46 | 2.8 | 1622 | 19 | 1.2 | 1516 | 24 | 1.6 | 1150 | 15 | 1.3 | 1932 | 39 | 2.0 |
| Kuala Pilah | 201 | 4 | 2 | 282 | 11 | 4 | 290 | 7 | 2.4 | 322 | 8 | 2.5 | 483 | 10 | 2.1 | 429 | 8 | 1.9 | 492 | 6 | 1.2 | 493 | 5 | 1.0 |
| Kuala T'ganu | 525 | 34 | 6.5 | 726 | 35 | 5 | 743 | 35 | 4.7 | 714 | 28 | 3.9 | 770 | 34 | 4.4 | 765 | 20 | 2.6 | 1014 | 39 | 3.8 | 900 | 36 | 4.0 |
| Kuantan | 25 | 1 | 4 | 395 | 20 | 5 | 293 | 5 | 1.7 | 615 | 5 | 0.8 | 680 | 20 | 2.9 | 684 | 7 | 1.0 | 619 | 11 | 1.8 | 576 | 21 | 3.6 |
| Kuching | 998 | 33 | 3.3 | 1011 | 38 | 4 | 893 | 38 | 4.3 | 1207 | 45 | 3.7 | 1131 | 35 | 3.1 | 1657 | 45 | 2.7 | 1721 | 32 | 1.9 | 2068 | 84 | 4.1 |
| Kulim | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 265 | 3 | 1.1 |
| Melaka | 1518 | 87 | 5.7 | 1681 | 106 | 6 | 1387 | 84 | 6.1 | 1659 | 76 | 4.6 | 1642 | 61 | 3.7 | 1488 | 52 | 3.5 | 1719 | 83 | 4.8 | 2139 | 86 | 4.0 |
| Miri | 18 | 2 | 11 | 396 | 7 | 2 | 404 | 5 | 1.2 | 577 | 8 | 1.4 | 657 | 4 | 0.6 | 901 | 1 | 0.1 | 915 | 1 | 0.1 | 949 | 5 | 0.5 |
| Muar | 349 | 4 | 1.1 | 338 | 14 | 4 | 542 | 29 | 5.4 | 617 | 15 | 2.4 | 692 | 20 | 2.9 | 665 | 26 | 3.9 | 717 | 42 | 5.9 | 729 | 48 | 6.6 |
| Pulau Pinang | 1102 | 92 | 8.3 | 1357 | 77 | 6 | 1374 | 46 | 3.3 | 1876 | 62 | 3.3 | 2186 | 42 | 1.9 | 1330 | 26 | 2.0 | 1696 | 46 | 2.7 | 1791 | 27 | 1.5 |
| Putrajaya | 199 | 8 | 4 | 256 | 8 | 3 | 251 | 9 | 3.6 | 282 | 8 | 2.8 | 329 | 11 | 3.3 | 355 | 4 | 1.1 | 391 | 10 | 2.6 | 367 | 9 | 2.5 |
| Sandakan | 0 | 0 | 0 | 137 | 3 | 2 | 158 | 3 | 1.9 | 208 | 13 | 6.3 | 271 | 8 | 3.0 | 265 | 4 | 1.5 | 411 | 15 | 3.6 | 237 | 4 | 1.7 |
| Sarikei | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 286 | 7 | 2.4 | 555 | 9 | 1.6 |
| Selayang | 1400 | 47 | 3.4 | 1429 | 56 | 4 | 1418 | 42 | 3.0 | 1699 | 71 | 4.2 | 1859 | 100 | 5.4 | 1829 | 83 | 4.5 | 1337 | 51 | 3.8 | 899 | 38 | 4.2 |
| Serdang | 697 | 43 | 6.2 | 696 | 36 | 5 | 598 | 32 | 5.4 | 520 | 17 | 3.3 | 666 | 28 | 4.2 | 709 | 20 | 2.8 | 1023 | 43 | 4.2 | 1265 | 51 | 4.0 |
| Seremban | 954 | 40 | 4.2 | 898 | 40 | 5 | 1229 | 79 | 6.4 | 1519 | 48 | 3.2 | 1605 | 34 | 2.1 | 1559 | 67 | 4.3 | 1520 | 46 | 3.0 | 1585 | 41 | 2.6 |
| Sibu | 380 | 10 | 2.6 | 263 | 9 | 3 | 387 | 6 | 1.6 | 455 | 12 | 2.6 | 505 | 10 | 2.0 | 745 | 11 | 1.5 | 900 | 17 | 1.9 | 866 | 9 | 1.0 |
| Sri Manjung | 152 | 10 | 6.6 | 350 | 11 | 3 | 327 | 7 | 2.1 | 387 | 6 | 1.6 | 420 | 10 | 2.4 | 466 | 9 | 1.9 | 832 | 17 | 2.0 | 625 | 17 | 2.7 |
| Sultan Ismail | 100 | 3 | 3 | 180 | 9 | 5 | 185 | 2 | 1.1 | 258 | 10 | 3.9 | 283 | 7 | 2.5 | 279 | 8 | 2.9 | 374 | 5 | 1.3 | 609 | 16 | 2.6 |
| Sungai Buloh | 165 | 9 | 5.5 | 319 | 14 | 4 | 387 | 19 | 4.9 | 468 | 22 | 4.7 | 450 | 13 | 2.9 | 514 | 14 | 2.7 | 580 | 22 | 3.8 | 693 | 11 | 1.6 |
| Sungei Petani | 497 | 23 | 4.6 | 633 | 14 | 2 | 684 | 9 | 1.3 | 558 | 8 | 1.4 | 811 | 35 | 4.3 | 845 | 19 | 2.2 | 930 | 23 | 2.5 | 1022 | 29 | 2.8 |
| Taiping | 278 | 7 | 2.5 | 379 | 10 | 3 | 612 | 22 | 3.6 | 889 | 19 | 2.1 | 953 | 24 | 2.5 | 1118 | 32 | 2.9 | 1284 | 18 | 1.4 | 1233 | 16 | 1.3 |
| Tawau | 189 | 5 | 2.6 | 317 | 10 | 3 | 298 | 9 | 3.0 | 401 | 15 | 3.7 | 575 | 16 | 2.8 | 648 | 9 | 1.4 | 503 | 45 | 8.9 | 540 | 38 | 7.0 |
| Teluk Intan | 668 | 19 | 2.8 | 588 | 16 | 3 | 612 | 22 | 3.6 | 690 | 27 | 3.9 | 663 | 10 | 1.5 | 616 | 15 | 2.4 | 1102 | 20 | 1.8 | 1013 | 10 | 1.0 |
| Temerloh | 443 | 27 | 6.1 | 531 | 28 | 5 | 640 | 28 | 4.4 | 450 | 10 | 2.2 | 681 | 31 | 4.6 | 868 | 21 | 2.4 | 866 | 15 | 1.7 | 1047 | 18 | 1.7 |
| KK1M Pahang | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 64 | 2 | 3.1 | - | - | - |
| KK1M T'gannu | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 38 | 0 | 0.0 |
| KK1M Kelantan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 186 | 8 | 4.3 |
| KK1M Sarawak | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 76 | 0 | 0.0 | 831 | 20 | 2.4 |
| MAIWP | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1583 | 2 | 0.1 | 2266 | 29 | 1.3 |

Table 1.4.6-2: PCR by Surgeon Status and SDP (Phaco), CSR 2014

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

| Hospital | 2014 Phaco | | | By surgeon status: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Specialist | | | Gazetting Specialist | | | Medical Officer | | |
| | N | n | % | N | n | % | N | n | % | N | n | % |
| Alor Setar | 1687 | 33 | 2.0 | 1613 | 29 | 1.8 | 72 | 4 | 5.6 | 0 | 0 | 0.0 |
| Ampang | 809 | 26 | 3.2 | 628 | 18 | 2.9 | 0 | 0 | 0.0 | 181 | 8 | 4.4 |
| Batu Pahat | 341 | 6 | 1.8 | 341 | 6 | 1.8 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Bintulu | 353 | 0 | 0.0 | 353 | 0 | 0.0 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Bukit Mertajam | 749 | 12 | 1.6 | 743 | 11 | 1.5 | 0 | 0 | 0.0 | 6 | 1 | 16.7 |
| Ipoh | 2566 | 56 | 2.2 | 2503 | 55 | 2.2 | 37 | 0 | 0.0 | 26 | 1 | 3.8 |
| Johor Bahru | 1303 | 35 | 2.7 | 1287 | 35 | 2.7 | 8 | 0 | 0.0 | 8 | 0 | 0.0 |
| Kangar | 356 | 16 | 4.5 | 328 | 13 | 4.0 | 12 | 3 | 25.0 | 16 | 0 | 0.0 |
| Kemaman | 44 | 0 | 0.0 | 44 | 0 | 0.0 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Keningau | 96 | 5 | 5.2 | 16 | 1 | 6.3 | 0 | 0 | 0.0 | 80 | 4 | 5.0 |
| Klang | 1351 | 8 | 0.6 | 1283 | 6 | 0.5 | 68 | 2 | 2.9 | 0 | 0 | 0.0 |
| Kota Bharu | 162 | 0 | 0.0 | 161 | 0 | 0.0 | 0 | 0 | 0.0 | 1 | 0 | 0.0 |
| Kota Kinabalu | 847 | 42 | 5.0 | 654 | 32 | 4.9 | 180 | 9 | 5.0 | 13 | 1 | 7.7 |
| Kuala Krai | 292 | 16 | 5.5 | 292 | 16 | 5.5 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Kuala Lumpur | 1576 | 18 | 1.1 | 1524 | 17 | 1.1 | 46 | 1 | 2.2 | 6 | 0 | 0.0 |
| Kuala Pilah | 430 | 0 | 0.0 | 409 | 0 | 0.0 | 21 | 0 | 0.0 | 0 | 0 | 0.0 |
| Kuala Terengganu | 707 | 19 | 2.7 | 614 | 14 | 2.3 | 91 | 4 | 4.4 | 2 | 1 | 50.0 |
| Kuantan | 421 | 14 | 3.3 | 391 | 10 | 2.6 | 9 | 1 | 11.1 | 21 | 3 | 14.3 |
| Kuching | 1986 | 75 | 3.8 | 1454 | 27 | 1.9 | 463 | 41 | 8.9 | 69 | 7 | 10.1 |
| Kulim | 239.0 | 1.0 | 0.4 | 239 | 1 | 0.4 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Melaka | 1919 | 70 | 3.6 | 1790 | 52 | 2.9 | 4 | 0 | 0.0 | 124 | 18 | 14.5 |
| Miri | 893 | 2 | 0.2 | 840 | 2 | 0.2 | 53 | 0 | 0.0 | 0 | 0 | 0.0 |
| Muar | 628 | 34 | 5.4 | 390 | 20 | 5.1 | 238 | 14 | 5.9 | 0 | 0 | 0.0 |
| Pulau Pinang | 1712 | 23 | 1.3 | 1570 | 17 | 1.1 | 20 | 0 | 0.0 | 122 | 6 | 4.9 |
| Putrajaya | 289 | 7 | 2.4 | 289 | 7 | 2.4 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Sandakan | 206 | 3 | 1.5 | 206 | 3 | 1.5 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Sarikei | 538 | 9 | 1.7 | 537 | 9 | 1.7 | 0 | 0 | 0.0 | 1 | 0 | 0.0 |
| Selayang | 809 | 27 | 3.3 | 676 | 19 | 2.8 | 19 | 2 | 10.5 | 114 | 6 | 5.3 |
| Serdang | 1072 | 25 | 2.3 | 1066 | 24 | 2.3 | 0 | 0 | 0.0 | 6 | 1 | 16.7 |
| Seremban | 1441 | 23 | 1.6 | 1012 | 15 | 1.5 | 68 | 0 | 0.0 | 361 | 8 | 2.2 |
| Sibu | 826 | 8 | 1.0 | 822 | 8 | 1.0 | 0 | 0 | 0.0 | 4 | 0 | 0.0 |
| Sri Manjung | 608 | 16 | 2.6 | 607 | 15 | 2.5 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Sultan Ismail | 496 | 8 | 1.6 | 496 | 8 | 1.6 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Sungai Buloh | 599 | 8 | 1.3 | 592 | 8 | 1.4 | 2 | 0 | 0.0 | 5 | 0 | 0.0 |
| Sungei Petani | 743 | 8 | 1.1 | 743 | 8 | 1.1 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Taiping | 1030 | 6 | 0.6 | 1028 | 6 | 0.6 | 2 | 0 | 0.0 | 0 | 0 | 0.0 |
| Tawau | 354 | 17 | 4.8 | 354 | 17 | 4.8 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Teluk Intan | 923 | 6 | 0.7 | 657 | 2 | 0.3 | 263 | 4 | 1.5 | 2 | 0 | 0.0 |
| Temerloh | 898 | 8 | 0.9 | 832 | **7** | 0.8 | 66 | 1 | 1.5 | 0 | 0 | 0.0 |
| KK1M Terengganu | 28.0 | 0.0 | 0.0 | 25 | 0 | 0.0 | 3 | 0 | 0.0 | 0 | 0 | 0.0 |
| KK1M Kelantan | 94.0 | 4.0 | 4.3 | 94 | 4 | 4.3 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| KK1M Sarawak | 812 | 18 | 2.2 | 783 | 15 | 1.9 | 29 | 3 | 10.3 | 0 | 0 | 0.0 |
| MAIWP | 2196 | 19 | 0.9 | 2131 | 18 | 0.8 | 2 | 0 | 0.0 | 21 | 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.*

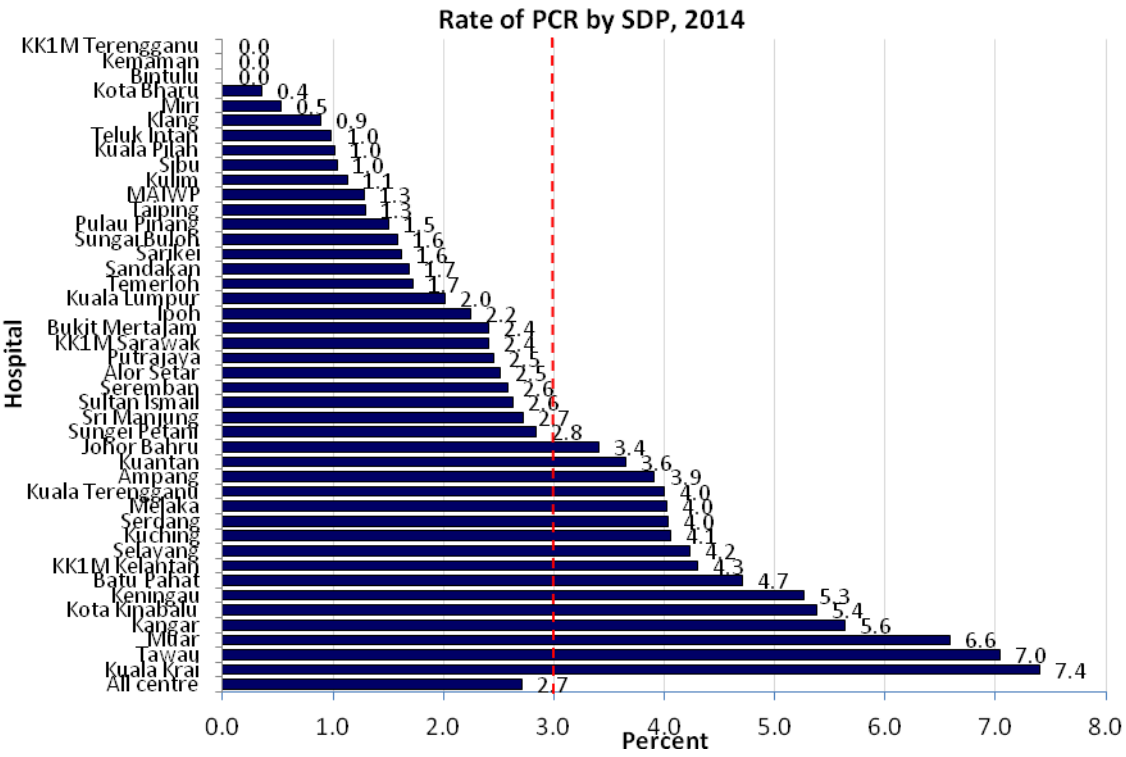



Figure 1.4.6-1: PCR by SDP, Bar Chart (All Surgery), CSR 2014

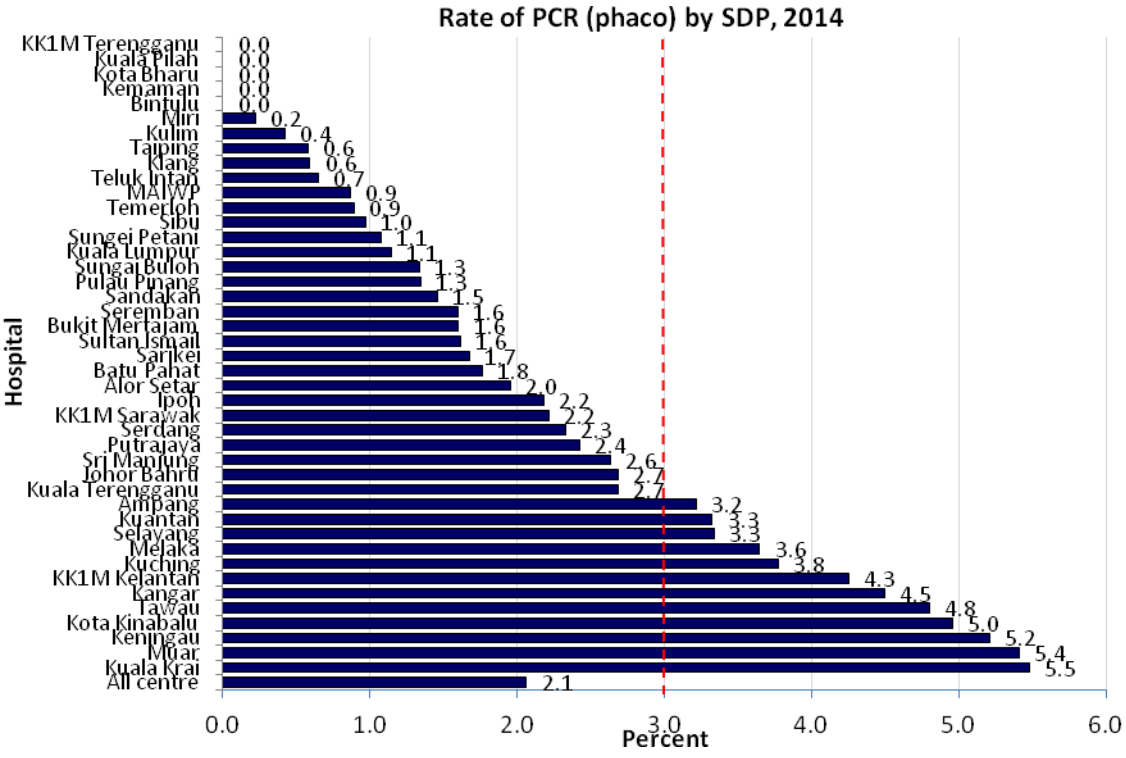



Figure 1.4.6-2: PCR by SDP, Bar Chart (Phaco), CSR 2014

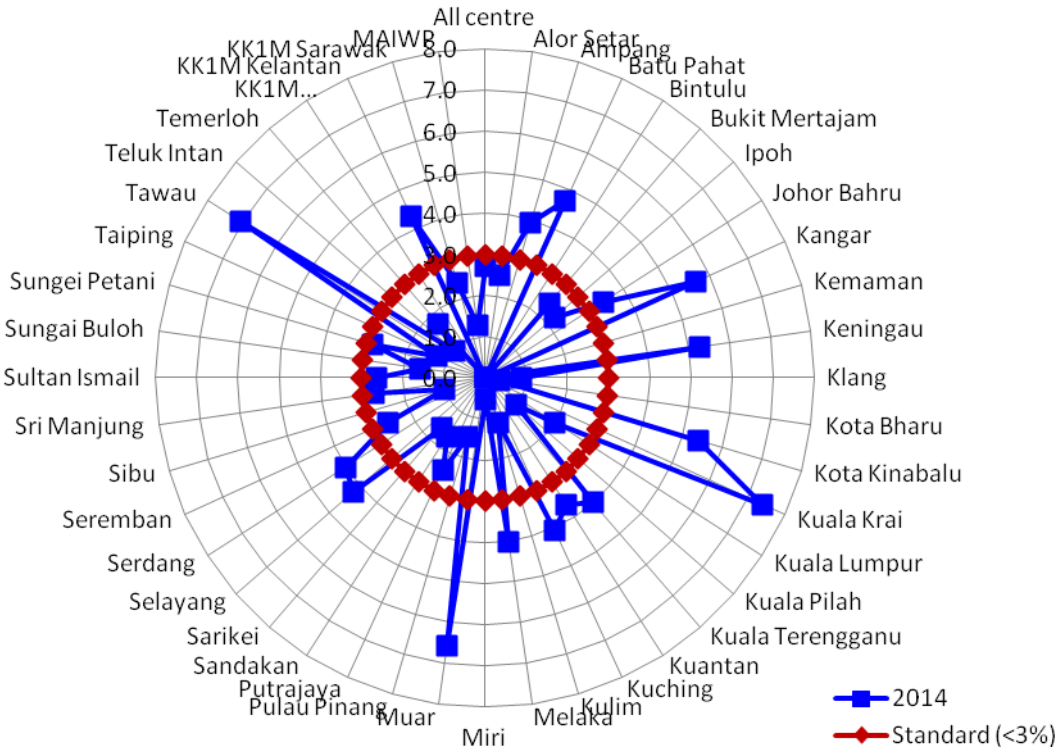



Figure 1.4.6-3: PCR by SDP, Radar Chart (All Surgery), CSR 2014

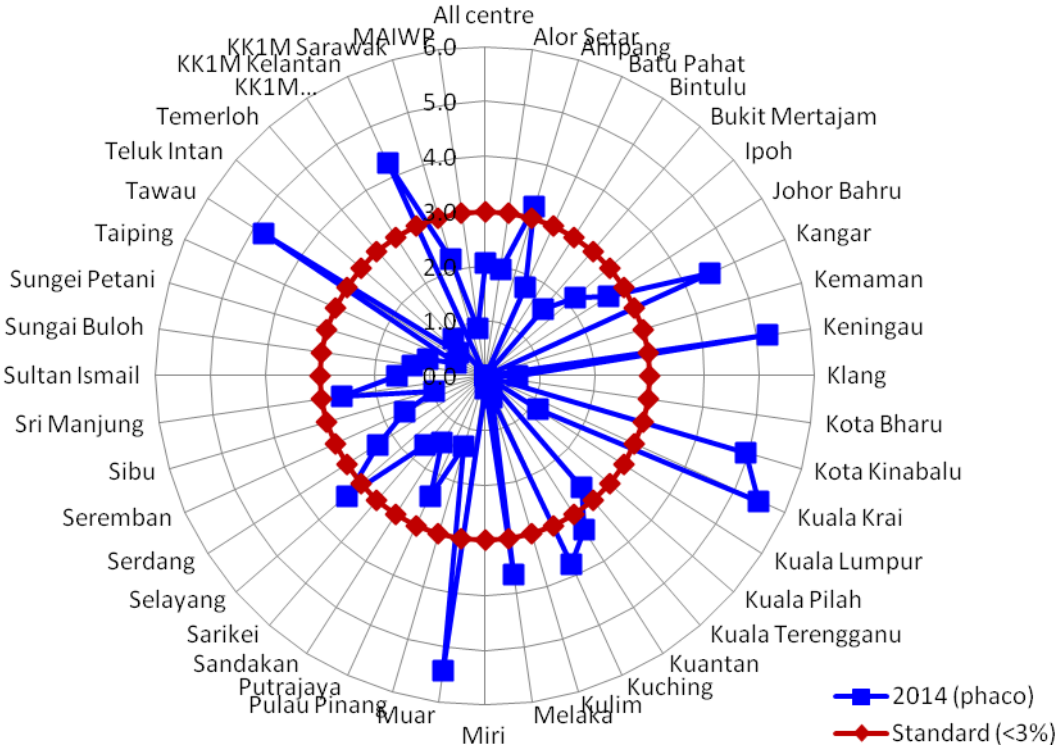



Figure 1.4.6-4: PCR by SDP, Radar Chart (Phaco), CSR 2014

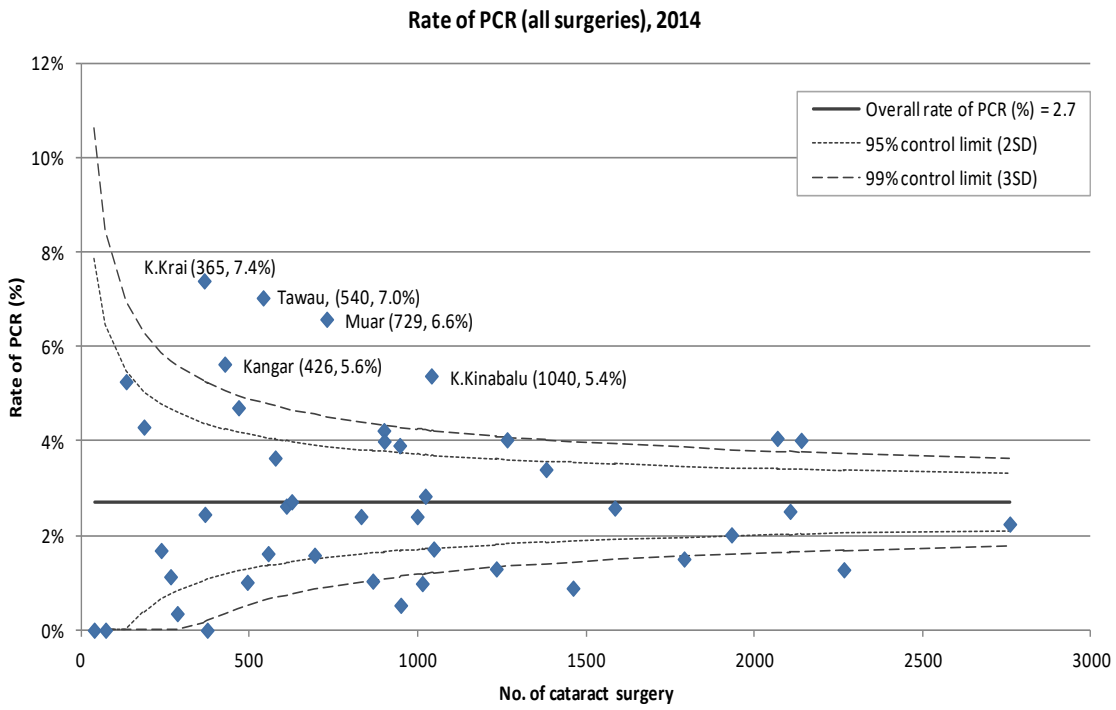



Figure 1.4.6-5: PCR by SDP, Funnel Plot (All Surgery), CSR 2014

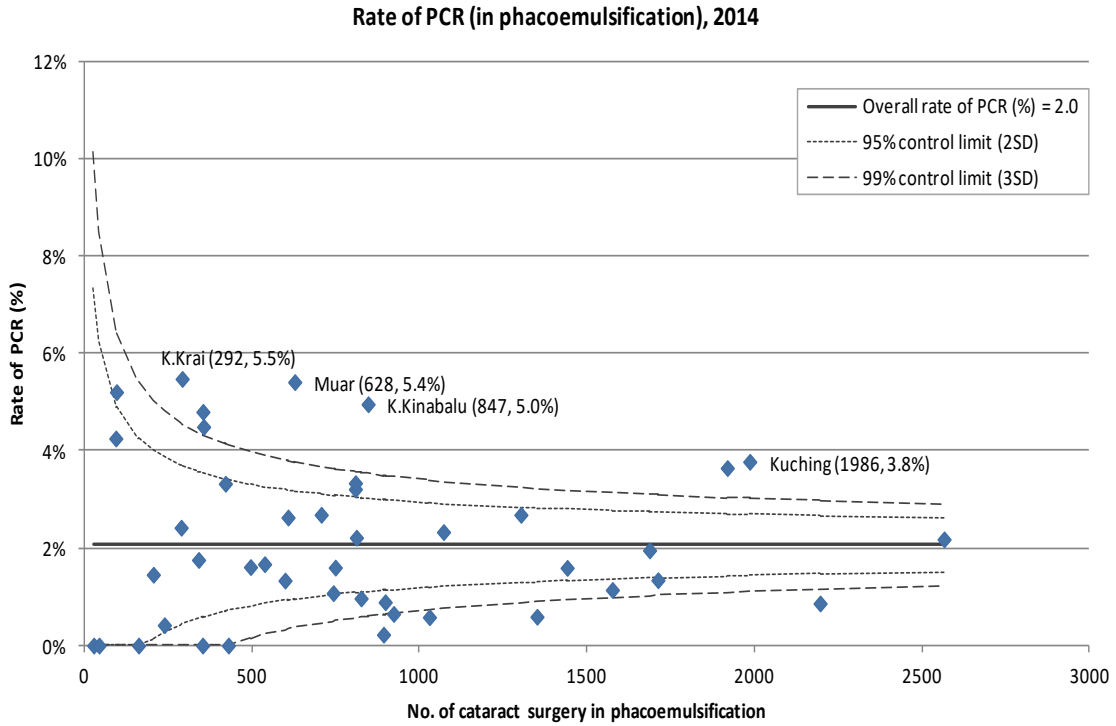



Figure 1.4.6-6: PCR by SDP, Funnel Plot (Phaco), CSR 2014

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

From the year 2002-2004, the percentage of PCR for phaco was higher than ECCE (figure not displayed). From 2007 onwards, the figures were reversed with ECCE having a higher percentage of PCR than phaco.

Table 1.4.7-1: PCR by Type of Cataract Surgery, CSR 2007-2014

| Year | 2007 | | | 2008 | | | 2009 | | | 2010 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients | 18380 | | | 21496 | | | 24438 | | | 28506 | | |
| Total PCR | 764 | | | 790 | | | 858 | | | 840 | | |
| | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** |
| Phaco | 11960 | 393 | 3.3 | 14781 | 432 | 2.9 | 17717 | 471 | 2.7 | 21810 | 489 | 2.2 |
| ECCE | 5524 | 239 | 4.3 | 5627 | 210 | 3.7 | 5457 | 216 | 4.0 | 5363 | 195 | 3.6 |
| Lens Aspiration | 323 | 18 | 5.6 | 340 | 17 | 5.0 | 400 | 22 | 5.5 | 451 | 20 | 4.4 |
| ICCE | 141 | 15 | 10.6 | 129 | 7 | 5.4 | 134 | 8 | 6.0 | 143 | 9 | 6.3 |
| Phaco converted to ECCE | 432 | 99 | 22.9 | 524 | 124 | 23.7 | 573 | 135 | 23.6 | 586 | 119 | 20.3 |

| Year | 2011 | | | 2012 | | | 2013 | | | 2014 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of patients | 30611 | | | 32473 | | | 37150 | | | 40532 | | |
| Total PCR | 936 | | | 870 | | | 1017 | | | 1100 | | |
| | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** |
| Phaco | 23872 | 568 | 2.4 | 26345 | 538 | 2.0 | 31625 | 633 | 2.0 | 35429 | 731 | 2.1 |
| ECCE | 5291 | 181 | 3.4 | 4784 | 145 | 3.0 | 4086 | 160 | 3.9 | 3613 | 133 | 3.7 |
| Lens Aspiration | 460 | 11 | 2.4 | 444 | 13 | 2.9 | 364 | 12 | 3.3 | 370 | 10 | 2.7 |
| ICCE | 123 | 6 | 4.9 | 136 | 6 | 4.4 | 173 | 8 | 4.6 | 176 | 9 | 5.1 |
| Phaco converted to ECCE | 652 | 162 | 24.8 | 621 | 161 | 25.9 | 769 | 196 | 25.5 | 805 | 205 | 25.5 |

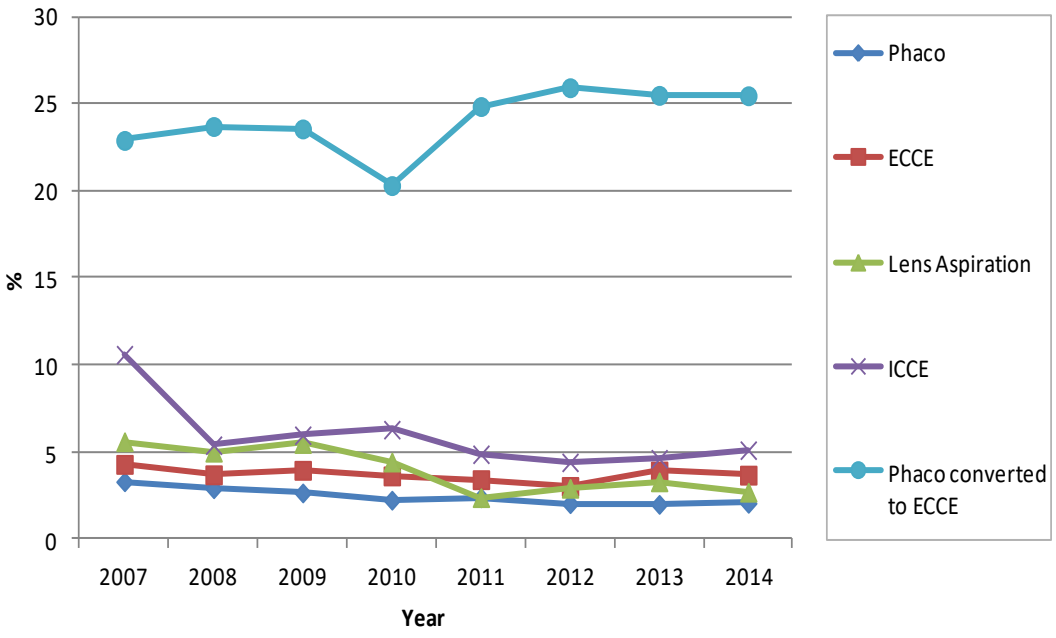



Figure 1.4.7-1: PCR by Type of Cataract Surgery, CSR 2007-2014

## 1.5 Cataract Surgery Outcome

### 1.5.1 Post-operative Complications Record and Ascertainment

In general, the ascertainment was above 80.0%. With exclusion for 2004, the ascertainment for the visual outcome appeared to be declining over the years.

Table 1.5.1-1: Distribution of Cataract Surgery with Post-operative Complication Record, CSR 2007-2014

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Total number of cataract surgery registered to CSR | 18426 | 21496 | 24438 | 28506 | 30611 | 32473 | 37150 | 40532 |
| Cataract surgery with post-operative complication record | 17604 | 20521 | 21851 | 26014 | 28834 | 30011 | 34662 | 37945 |
| Ascertainment on post-operative complication (%) | 95.5 | 95.5 | 89.4 | 91.3 | 94.2 | 92.4 | 93.3 | 93.6 |
| Cataract surgery with visual outcome record | 15786 | 19063 | 20590 | 24522 | 27219 | 28589 | 34318 | 37865 |
| Ascertainment on visual outcome (%) | 85.7 | 88.7 | 84.3 | 86.0 | 88.9 | 88.0 | 92.4 | 93.4 |

### 1.5.2 Post-operative Infectious Endophthalmitis

The occurrence of post-operative infectious endophthalmitis appeared to be decreasing over the years. It was an improvement with only 5 cases in 10 000 cataract surgeries performed in MOH hospitals in 2014. The median duration from the time of surgery to diagnosis of infection for eyes operated in 2007 onwards was 7 days.

Table 1.5.2-1: Post-operative Infectious Endophthalmitis, CSR 2007-2014

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Eyes with post-operative complication records (N) | 17604 | 20521 | 21851 | 26014 | 28834 | 30011 | 34662 | 37945 |
| Eyes with post-operative infectious endophthalmitis (n) | 37 | 22 | 19 | 24 | 11 | 13 | 27 | 19 |
| Percentage of eyes with post-operative endophthalmitis (%) | 0.21 | 0.11 | 0.09 | 0.09 | 0.04 | 0.04 | 0.08 | 0.05 |

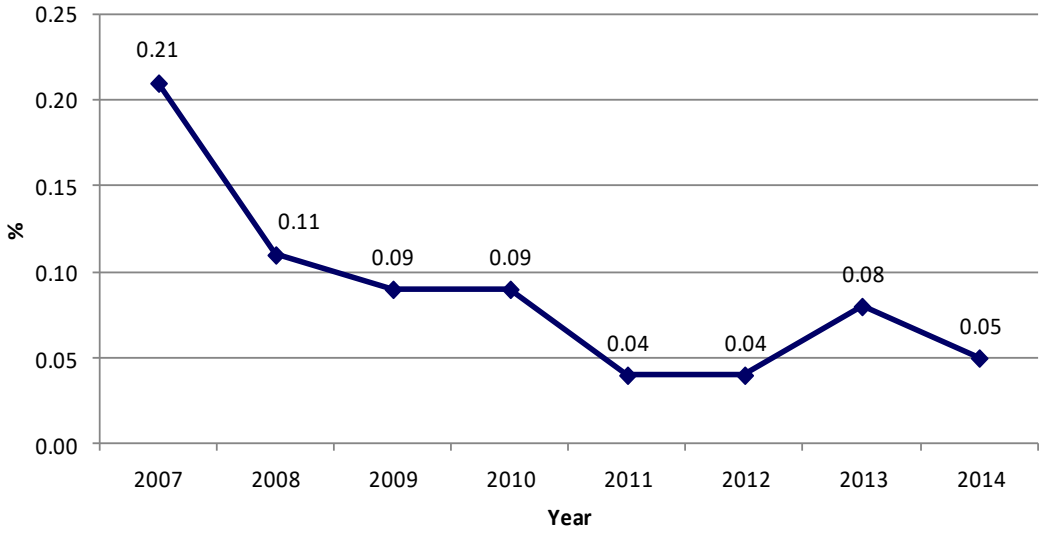



Figure 1.5.2-1: Percentage of Post-operative Infectious Endophthalmitis, CSR 2007-2014

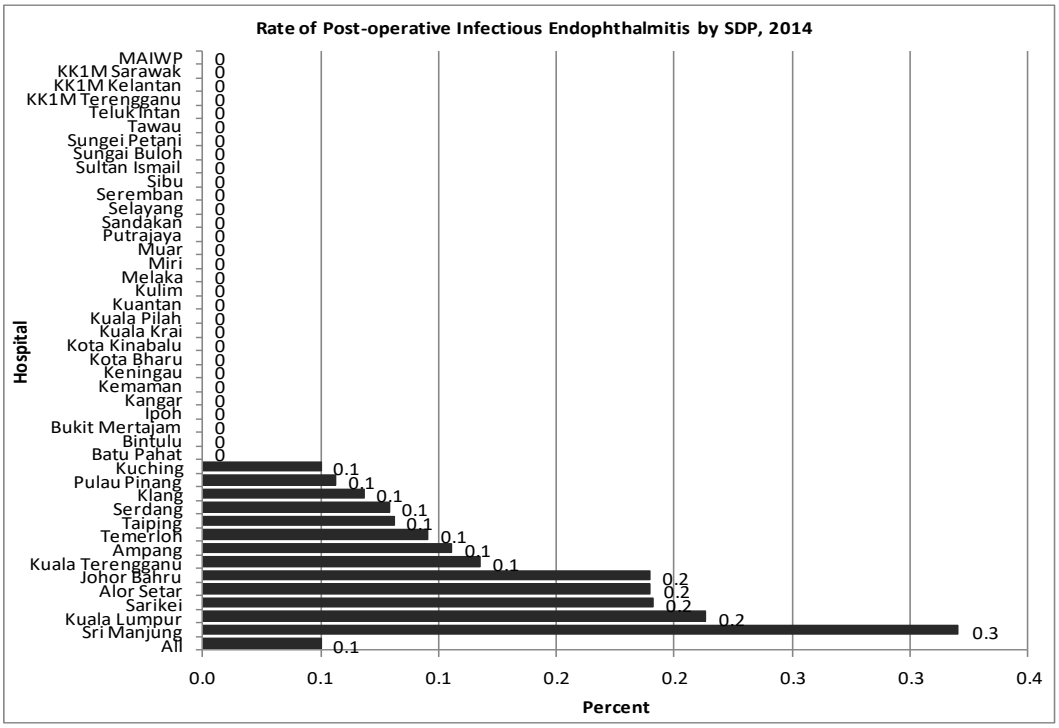



Figure 1.5.2-2: Percentage of Post-operative Infectious Endophthalmitis in Bar Chart, CSR 2014

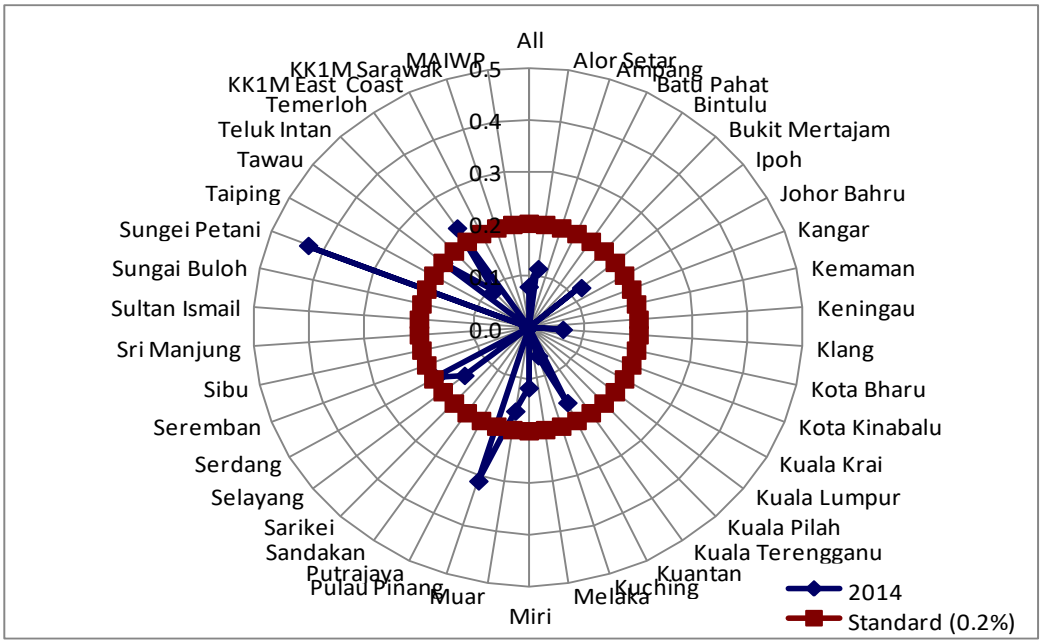



Figure 1.5.2-3: Percentage of Post-operative Infectious Endophthalmitis in Radar Chart, CSR 2014

Table 1.5.2-2: Time from Surgery to Diagnosis, CSR 2007-2014

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Number of patients with post-operative infective endophthalmitis | 37 | 22 | 19 | 24 | 11 | 13 | 27 | 19 |
| Time from surgery to diagnosis of infection (day) | Days | | | | | | | |
| Min | 1 | 1 | 1 | 0 | 0 | 2 | 1 | 2 |
| Max | 92 | 76 | 103 | 141 | 391 | 59 | 162 | 90 |
| Mean | 21.6 | 20.6 | 20.4 | 22.7 | 43.7 | 19.9 | 24.0 | 18.9 |
| Median | | | | | 6 | 13 | 7 | 7 |
| Distribution of patients | Number of Patients | | | | | | | |
| Less than 3 days | 2 | 5 | 5 | 4 | 2 | 1 | 6 | 2 |
| 3-5 days | 4 | 1 | 1 | 5 | 3 | 2 | 4 | 5 |
| 6-14 days | 8 | 5 | 5 | 4 | 4 | 4 | 8 | 4 |
| More than 14 days | 12 | 9 | 7 | 10 | 2 | 5 | 8 | 8 |
| Missing | 11 | 2 | 1 | 1 | 0 | 1 | 1 | 0 |

### 1.5.3 Unplanned Return to Operating Theatre (OT)

The average percentage was 0.26 or 2.6 cases per 1000 cataract surgeries in 2014. Iris prolapse, wound dehiscence and high post- operative IOP showed decreasing trend but IOL related problem demonstrated otherwise. The average time from surgery to return to OT was in the second week post-operatively.

Table 1.5.3-1: Unplanned Return to OT, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Patients with outcome records (N) | 17604 | | 20521 | | 21851 | | 26014 | | 28834 | | 30011 | | 34662 | | 37945 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| | 87 | 0.50 | 88 | 0.43 | 116 | 0.53 | 123 | 0.47 | 122 | 0.42 | 103 | 0.34 | 105 | 0.30 | 97 | 0.26 |

Table 1.5.3-2: Reasons for Unplanned Return to OT, CSR 2007-2014

| Year | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Patients with unplanned return to OT | 87 | | 88 | | 116 | | 123 | | 122 | | 103 | | 105 | | 97 | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Iris prolapse | 20 | 23.0 | 12 | 13.6 | 18 | 15.5 | 20 | 16.3 | 24 | 19.7 | 11 | 10.7 | 10 | 9.5 | 7 | 7.2 |
| Wound dehiscence | 13 | 14.9 | 7 | 8.0 | 22 | 19.0 | 20 | 16.3 | 18 | 14.8 | 19 | 18.4 | 20 | 19.0 | 15 | 15.5 |
| High IOP | 5 | 5.7 | 2 | 2.3 | 9 | 7.8 | 3 | 2.4 | 4 | 3.3 | 6 | 5.8 | 2 | 1.9 | 3 | 3.1 |
| IOL related | 10 | 11.5 | 14 | 15.9 | 15 | 12.9 | 22 | 17.9 | 18 | 14.8 | 18 | 17.5 | 16 | 15.2 | 17 | 17.5 |
| Infective endophthalmitis | 12 | 13.8 | 6 | 6.8 | 6 | 5.2 | 9 | 7.3 | 2 | 1.6 | 5 | 4.8 | 7 | 6.7 | 9 | 9.3 |
| Others | 38 | 43.7 | 48 | 54.5 | 53 | 45.7 | 56 | 45.5 | 68 | 55.7 | 52 | 50.5 | 55 | 52.4 | 53 | 54.6 |

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

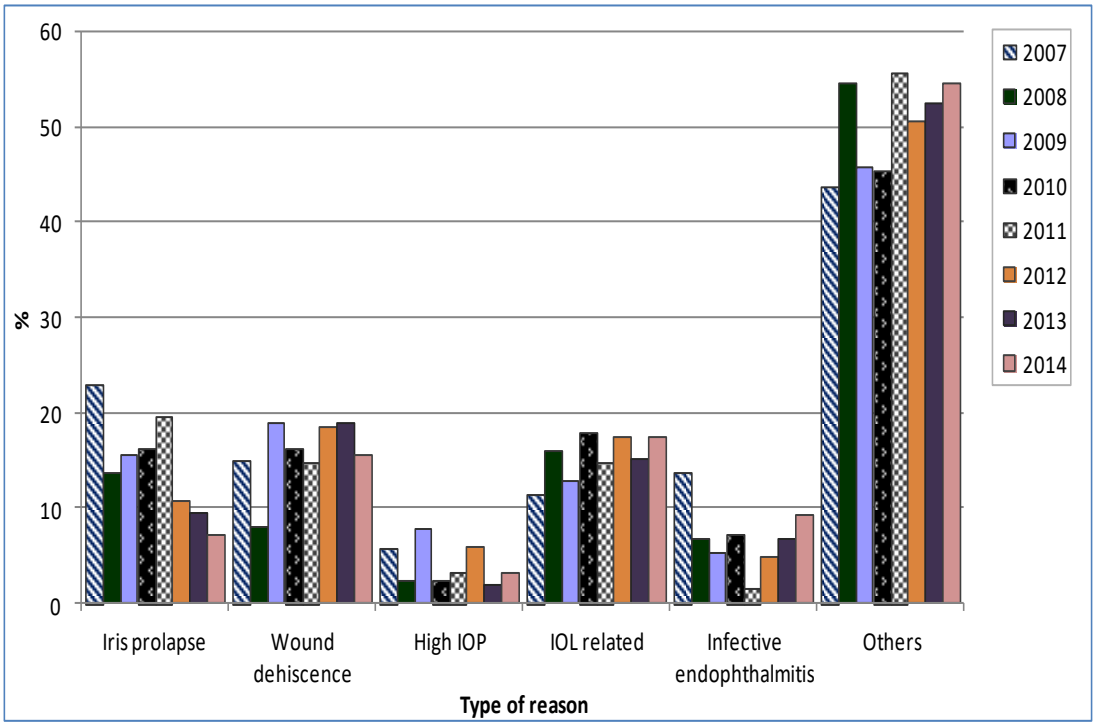



Figure 1.5.3-1: Reasons for Unplanned Return to Operating Theatre, CSR 2007-2014

Table 1.5.3-3: Time from Surgery to Unplanned Return to OT, CSR 2014

| Post-operative period (day) | N | n | Median | Min | Max | Mean |
|---|---|---|---|---|---|---|
| Iris prolapse | 7 | 6 | 27 | 0 | 55 | 26.8 |
| Wound dehiscence | 15 | 14 | 7 | 1 | 34 | 11.1 |
| High IOP | 3 | 3 | 4 | 2 | 27 | 11.0 |
| IOL related | 17 | 14 | 8 | 0 | 56 | 14.6 |
| Infective endophthalmitis | 9 | 9 | 5 | 2 | 41 | 11.0 |
| Others | 53 | 48 | 9 | 0 | 106 | 18.3 |

*n = No. of available information*

### 1.5.4 Post-operative Follow Up Period

Most patients were followed up until 7 weeks post-operatively.

Table 1.5.4-1: Median Follow-up Period by Types of Cataract Surgery (Eyes with Unaided Vision in Weeks), CSR 2014

| Types of surgery | N | n | Median | 25th percentile | 75th percentile |
|---|---|---|---|---|---|
| All surgeries | 36257 | 36209 | 7 | 5 | 8 |
| Phaco | 31996 | 31996 | 7 | 5 | 8 |
| ECCE | 3011 | 3007 | 8 | 6 | 11 |
| Phaco → ECCE | 694 | 691 | 8 | 6 | 11 |
| ICCE | 144 | 144 | 8 | 5 | 11 |
| Lens aspiration | 296 | 296 | 7 | 5 | 9 |

*n = No. of available information*

Table 1.5.4-2: Median Follow-up Period by Types of Cataract Surgery (Eyes with Refracted Vision) in Weeks, CSR 2014

| Types of surgery | N | n | Median | 25th percentile | 75th percentile |
|---|---|---|---|---|---|
| All surgeries | 33532 | 33494 | 7 | 6 | 9 |
| Phaco | 29792 | 29769 | 7 | 6 | 8 |
| ECCE | 2671 | 2668 | 8 | 7 | 11 |
| Phaco → ECCE | 623 | 620 | 9 | 6 | 11 |
| ICCE | 124 | 124 | 8 | 6 | 11 |
| Lens aspiration | 234 | 234 | 7 | 6 | 10 |

*n = No. of available information*

### 1.5.5 Post-operative Visual Acuity (All Eyes)

Only approximately 40-50% of eyes had vision unaided VA 6/12 or better i.e. good VA outcome. This percentage increased double folds following refraction. This trend remained unchanged throughout the years.

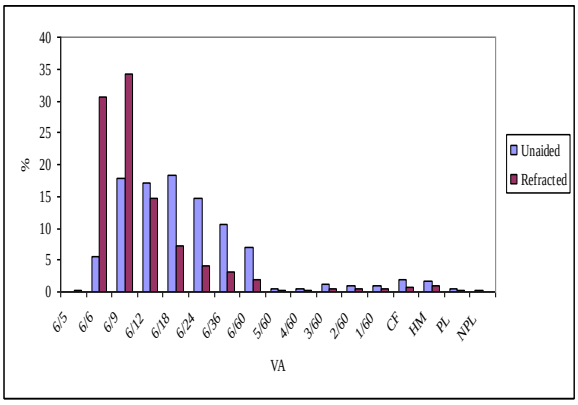
Table 1.5.5-1: Post-operative Visual Acuity (All Eyes), CSR 2007-2014

| Year | 2007 (N=18426) | | | | 2008 (N=21496) | | | | 2009 (N=24438) | | | | 2010 (N=28506) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | |
| **VA** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| 6/5 | 3 | 0.0 | 35 | 0.2 | 9 | 0.0 | 51 | 0.3 | 10 | 0.0 | 46 | 0.2 | 12 | 0.0 | 119 | 0.5 |
| 6/6 | 878 | 5.6 | 4409 | 30.5 | 1126 | 5.9 | 6072 | 35.2 | 1100 | 5.3 | 6555 | 34.7 | 1568 | 6.4 | 8362 | 37.0 |
| 6/9 | 2806 | 17.8 | 4961 | 34.3 | 3040 | 15.9 | 5714 | 33.1 | 3649 | 17.7 | 6550 | 34.7 | 4523 | 18.4 | 7369 | 32.6 |
| 6/12 | 2717 | 17.2 | 2100 | 14.6 | 3351 | 17.6 | 2577 | 14.9 | 3837 | 18.6 | 2762 | 14.6 | 5054 | 20.6 | 3332 | 14.8 |
| **6/12 and better** | **6404** | **40.6** | **11505** | **79.6** | **7526** | **39.4** | **14414** | **83.5** | **8596** | **41.7** | **15913** | **84.3** | **11157** | **45.5** | **19182** | **85.0** |
| 6/18 | 2893 | 18.3 | 1055 | 7.3 | 3792 | 19.9 | 1012 | 5.9 | 4052 | 19.7 | 1050 | 5.6 | 4727 | 19.3 | 1131 | 5.0 |
| **<6/12-6/18** | **2893** | **18.3** | **1055** | **7.3** | **3792** | **19.9** | **1012** | **5.9** | **4052** | **19.7** | **1050** | **5.6** | **4727** | **19.3** | **1131** | **5.0** |
| 6/24 | 2315 | 14.7 | 573 | 4.0 | 2978 | 15.6 | 607 | 3.5 | 2958 | 14.4 | 616 | 3.3 | 3232 | 13.2 | 666 | 2.9 |
| 6/36 | 1687 | 10.7 | 444 | 3.1 | 2018 | 10.6 | 421 | 2.4 | 2095 | 10.2 | 416 | 2.2 | 2211 | 9.0 | 497 | 2.2 |
| 6/60 | 1126 | 7.1 | 266 | 1.9 | 1300 | 6.8 | 261 | 1.5 | 1323 | 6.4 | 276 | 1.5 | 1456 | 5.9 | 350 | 1.6 |
| **<6/18-6/60** | **5128** | **32.5** | **1283** | **9.0** | **6296** | **33.0** | **1289** | **7.4** | **6376** | **31.0** | **1308** | **7.0** | **6899** | **28.1** | **1513** | **6.7** |
| 5/60 | 92 | 0.6 | 23 | 0.2 | 116 | 0.6 | 37 | 0.2 | 93 | 0.5 | 27 | 0.1 | 119 | 0.5 | 37 | 0.2 |
| 4/60 | 87 | 0.6 | 35 | 0.2 | 97 | 0.5 | 30 | 0.2 | 103 | 0.5 | 31 | 0.2 | 112 | 0.5 | 31 | 0.1 |
| 3/60 | 207 | 1.3 | 80 | 0.6 | 266 | 1.4 | 112 | 0.6 | 331 | 1.6 | 118 | 0.6 | 378 | 1.5 | 151 | 0.7 |
| **<6/60-3/60** | **386** | **2.5** | **138** | **1.0** | **479** | **2.5** | **179** | **1.0** | **527** | **2.6** | **176** | **0.9** | **609** | **2.5** | **219** | **1.0** |
| 2/60 | 158 | 1.0 | 73 | 0.5 | 186 | 1.0 | 70 | 0.4 | 199 | 1.0 | 77 | 0.4 | 227 | 0.9 | 97 | 0.4 |
| 1/60 | 155 | 1.0 | 76 | 0.5 | 159 | 0.8 | 60 | 0.3 | 168 | 0.8 | 66 | 0.3 | 196 | 0.8 | 93 | 0.4 |
| CF | 300 | 1.9 | 121 | 0.8 | 295 | 1.5 | 85 | 0.5 | 315 | 1.5 | 127 | 0.7 | 345 | 1.4 | 147 | 0.7 |
| HM | 253 | 1.6 | 149 | 1.0 | 230 | 1.2 | 84 | 0.5 | 269 | 1.3 | 126 | 0.7 | 280 | 1.1 | 155 | 0.7 |
| PL | 75 | 0.5 | 46 | 0.3 | 53 | 0.3 | 22 | 0.1 | 58 | 0.3 | 31 | 0.2 | 47 | 0.2 | 24 | 0.1 |
| NPL | 34 | 0.2 | 0 | 0.0 | 32 | 0.2 | 0 | 0.0 | 30 | 0.1 | 12 | 0.1 | 35 | 0.1 | 18 | 0.1 |
| **<3/60** | **975** | **6.2** | **465** | **3.1** | **955** | **5.0** | **321** | **1.8** | **1039** | **5.0** | **439** | **2.3** | **1130** | **4.6** | **534** | **2.4** |
| **TOTAL** | **15786** | **100.0** | **14446** | **100.0** | **19048** | **100.0** | **17215** | **100.0** | **20590** | **100.0** | **18886** | **100.0** | **24522** | **100.0** | **22579** | **100.0** |

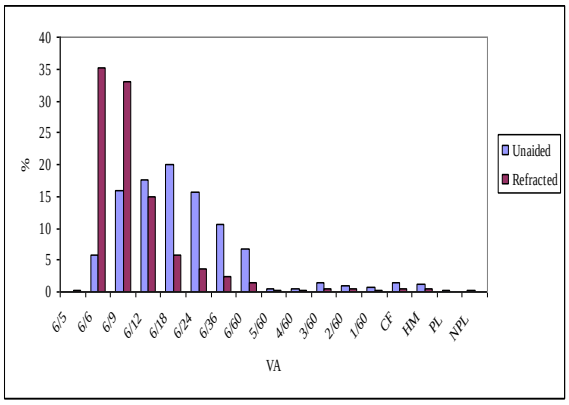
| Year | 2011 (N=30611) | | | | 2012 (N=32473) | | | | 2013 (N=37150) | | | | 2014 (N=40532) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | |
| **VA** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| 6/5 | 15 | 0.1 | 124 | 0.5 | 14 | 0.0 | 102 | 0.4 | 20 | 0.1 | 104 | 0.3 | 25 | 0.1 | 123 | 0.4 |
| 6/6 | 1776 | 6.5 | 9239 | 37.4 | 2011 | 7.0 | 9732 | 38.2 | 2664 | 8.1 | 11743 | 39.2 | 3165 | 8.7 | 13487 | 40.2 |
| 6/9 | 5040 | 18.5 | 8162 | 33.0 | 5498 | 19.2 | 8254 | 32.4 | 7101 | 21.5 | 9901 | 33.0 | 7765 | 21.4 | 10961 | 32.7 |
| 6/12 | 5499 | 20.2 | 3585 | 14.5 | 5925 | 20.7 | 3723 | 14.6 | 7122 | 21.5 | 4272 | 14.3 | 7870 | 21.7 | 4700 | 14.0 |
| **6/12 and better** | **12330** | **45.3** | **21110** | **85.4** | **13448** | **47.0** | **21811** | **85.5** | **16907** | **51.1** | **26020** | **86.8** | **18825** | **51.9** | **29271** | **87.3** |
| 6/18 | 5209 | 19.1 | 1218 | 4.9 | 5285 | 18.5 | 1327 | 5.2 | 5923 | 17.9 | 1381 | 4.6 | 6638 | 18.3 | 1475 | 4.4 |
| **<6/12-6/18** | **5209** | **19.1** | **1218** | **4.9** | **5285** | **18.5** | **1327** | **5.2** | **5923** | **17.9** | **1381** | **4.6** | **6638** | **18.3** | **1475** | **4.4** |
| 6/24 | 3689 | 13.6 | 738 | 3.0 | 3728 | 13.0 | 746 | 2.9 | 4062 | 12.3 | 820 | 2.7 | 4421 | 12.2 | 938 | 2.8 |
| 6/36 | 2528 | 9.3 | 503 | 2.0 | 2713 | 9.5 | 531 | 2.1 | 2592 | 7.8 | 552 | 1.8 | 2724 | 7.5 | 617 | 1.8 |
| 6/60 | 1558 | 5.7 | 388 | 1.6 | 1468 | 5.1 | 361 | 1.4 | 1606 | 4.9 | 390 | 1.3 | 1701 | 4.7 | 425 | 1.3 |
| **<6/18-6/60** | **7775** | **28.6** | **1629** | **6.6** | **7909** | **27.7** | **1638** | **6.4** | **8260** | **25.0** | **1762** | **5.9** | **8846** | **24.4** | **1980** | **5.9** |
| 5/60 | 111 | 0.4 | 28 | 0.1 | 130 | 0.5 | 38 | 0.1 | 135 | 0.4 | 33 | 0.1 | 122 | 0.3 | 33 | 0.1 |
| 4/60 | 109 | 0.4 | 32 | 0.1 | 119 | 0.4 | 26 | 0.1 | 103 | 0.3 | 43 | 0.1 | 104 | 0.3 | 35 | 0.1 |
| 3/60 | 435 | 1.6 | 155 | 0.6 | 469 | 1.6 | 168 | 0.7 | 479 | 1.4 | 167 | 0.6 | 447 | 1.2 | 199 | 0.6 |
| **<6/60-3/60** | **655** | **2.4** | **215** | **0.9** | **718** | **2.5** | **232** | **0.9** | **717** | **2.2** | **243** | **0.8** | **673** | **1.9** | **267** | **0.8** |
| 2/60 | 249 | 0.9 | 113 | 0.5 | 257 | 0.9 | 94 | 0.4 | 291 | 0.9 | 124 | 0.4 | 303 | 0.8 | 131 | 0.4 |
| 1/60 | 213 | 0.8 | 99 | 0.4 | 211 | 0.7 | 79 | 0.3 | 239 | 0.7 | 111 | 0.4 | 237 | 0.7 | 86 | 0.3 |
| CF | 400 | 1.5 | 135 | 0.5 | 371 | 1.3 | 125 | 0.5 | 352 | 1.1 | 138 | 0.5 | 353 | 1.0 | 128 | 0.4 |
| HM | 294 | 1.1 | 150 | 0.6 | 291 | 1.0 | 154 | 0.6 | 279 | 0.8 | 138 | 0.5 | 291 | 0.8 | 158 | 0.5 |
| PL | 52 | 0.2 | 20 | 0.1 | 61 | 0.2 | 28 | 0.1 | 64 | 0.2 | 34 | 0.1 | 59 | 0.2 | 24 | 0.1 |
| NPL | 42 | 0.2 | 18 | 0.1 | 38 | 0.1 | 17 | 0.1 | 35 | 0.1 | 17 | 0.1 | 32 | 0.1 | 12 | 0.0 |
| **<3/60** | **1250** | **4.6** | **535** | **2.2** | **1229** | **4.3** | **497** | **1.9** | **1260** | **3.8** | **562** | **1.9** | **1275** | **3.5** | **539** | **1.6** |
| **TOTAL** | **27219** | **100.0** | **24707** | **100.0** | **28589** | **100.0** | **25505** | **100.0** | **33067** | **100.0** | **29968** | **100.0** | **36257** | **100.0** | **33532** | **100.0** |

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

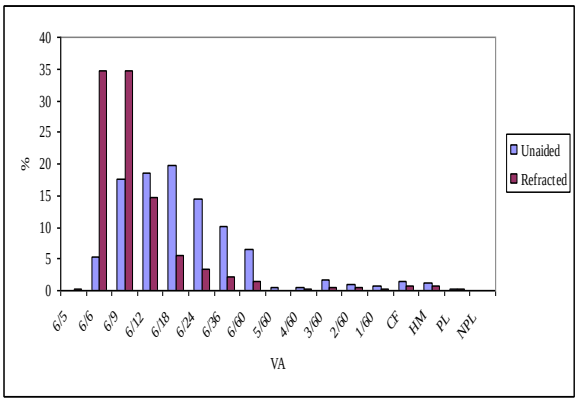
2007



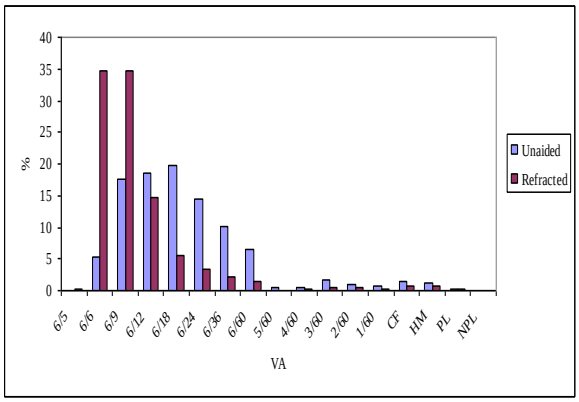

2008



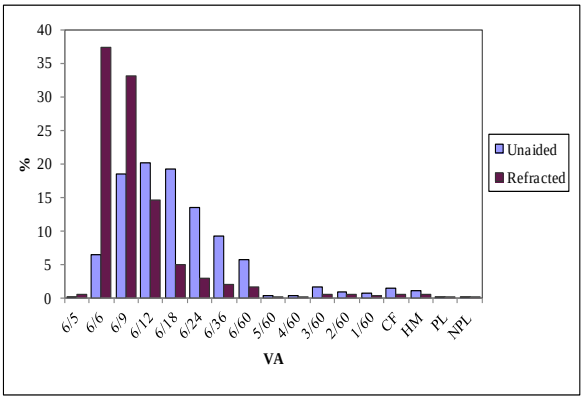

2009



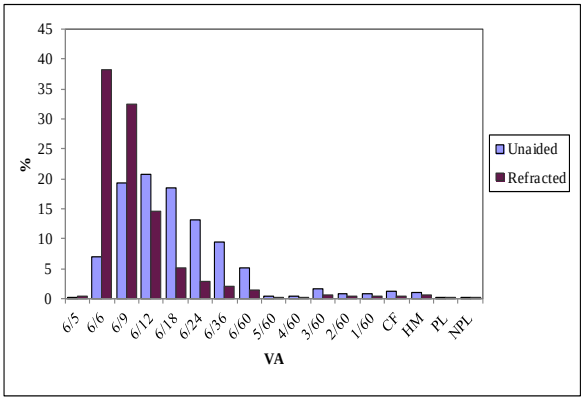

2010




2011




2012



2013 2014

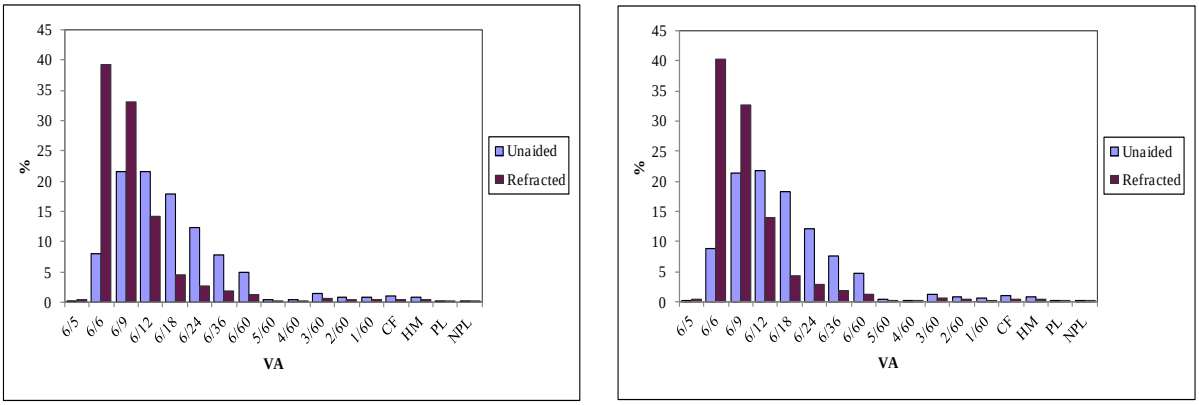



Figure 1.5.5-1: Percentage Distribution of Post-operative Unaided and Refracted Visual Acuity, CSR 2007-2014

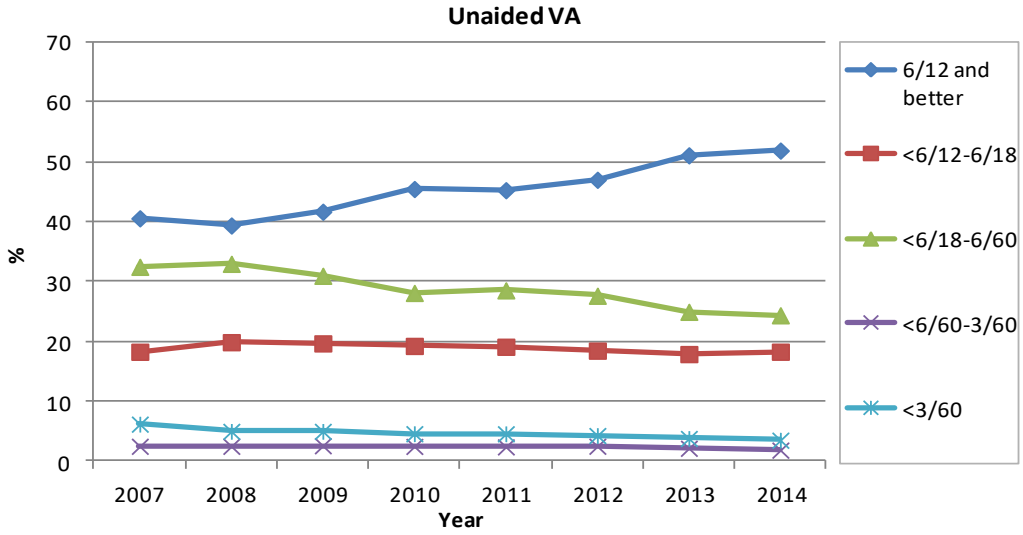



Figure 1.5.5-2: Post-operative Unaided Visual Acuity by Visual Category (All Eyes), CSR 2007-2014

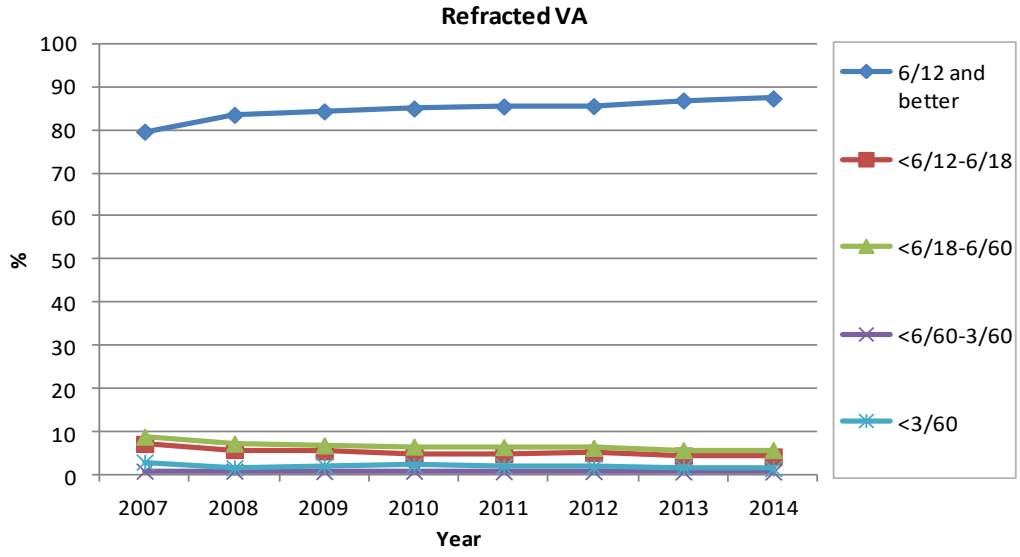



Figure 1.5.5-3: Post-operative Refracted Visual Acuity by Visual Category (All Eyes), CSR 2007-2014

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

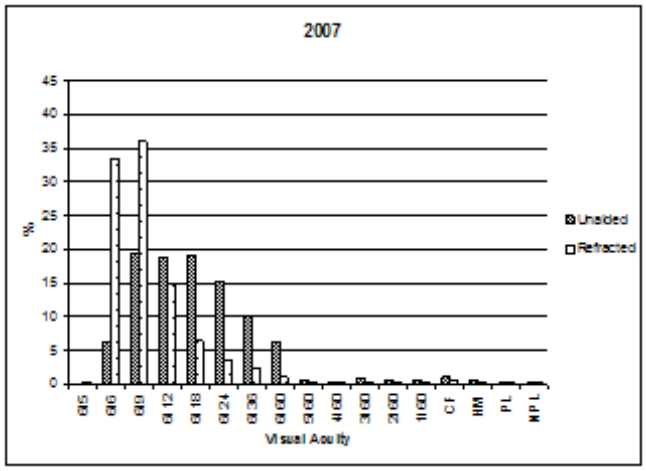
The percentage of eyes with unaided VA 6/12 or better slightly increased but similar to eyes with ocular co-morbidity; this percentage increased double folds following refraction. This trend remained unchanged throughout the years.

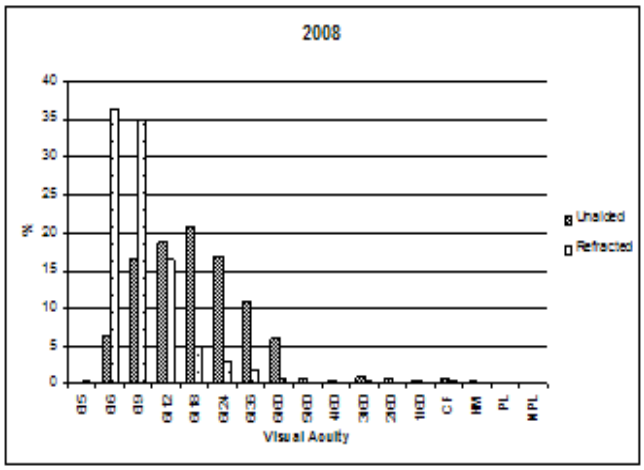
Table 1.5.6-1: Post-operative Visual Acuity (Eyes without Ocular Co-morbidity), CSR 2007-2014

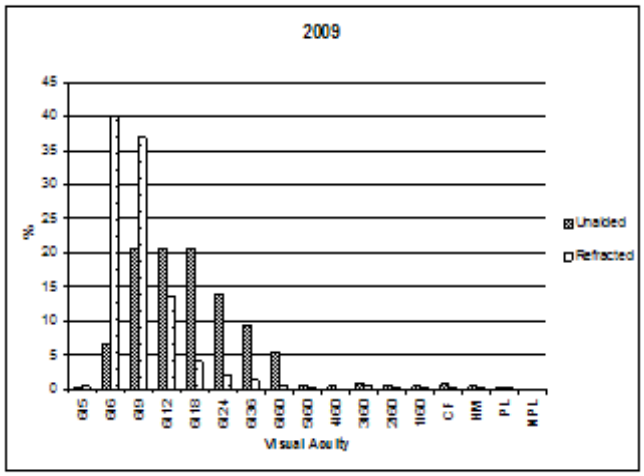
| Year | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | |
| VA | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| 6/5 | 3 | 0.0 | 25 | 0.3 | 2 | 0.0 | 23 | 0.3 | 8 | 0.1 | 37 | 0.3 | 7 | 0.0 | 83 | 0.6 |
| 6/6 | 667 | 6.2 | 3326 | 33.5 | 561 | 6.2 | 3061 | 36.4 | 802 | 6.4 | 4717 | 40.0 | 1127 | 8.0 | 5640 | 42.8 |
| 6/9 | 2061 | 19.3 | 3574 | 36.0 | 1477 | 16.4 | 2939 | 35.0 | 2595 | 20.6 | 4348 | 36.9 | 2989 | 21.1 | 4550 | 34.5 |
| 6/12 | 2021 | 18.9 | 1473 | 14.8 | 1683 | 18.7 | 1377 | 16.4 | 2585 | 20.5 | 1602 | 13.6 | 3311 | 23.4 | 1842 | 14.0 |
| **6/12 and better** | **4752** | **44.4** | **8398** | **84.6** | **3723** | **41.3** | **7400** | **88.1** | **5990** | **47.6** | **10704** | **90.8** | **7434** | **52.6** | **12115** | **92.0** |
| 6/18 | 2037 | 19.1 | 634 | 6.4 | 1882 | 20.9 | 411 | 4.9 | 2599 | 20.6 | 479 | 4.1 | 2777 | 19.6 | 445 | 3.4 |
| **<6/12-6/18** | **2037** | **19.1** | **634** | **6.4** | **1882** | **20.9** | **411** | **4.9** | **2599** | **20.6** | **479** | **4.1** | **2777** | **19.6** | **445** | **3.4** |
| 6/24 | 1619 | 15.1 | 351 | 3.5 | 1518 | 16.9 | 254 | 3.0 | 1772 | 14.0 | 251 | 2.1 | 1805 | 12.8 | 242 | 1.8 |
| 6/36 | 1087 | 10.2 | 234 | 2.4 | 975 | 10.8 | 151 | 1.8 | 1170 | 9.3 | 152 | 1.3 | 1113 | 7.9 | 139 | 1.1 |
| 6/60 | 650 | 6.1 | 113 | 1.1 | 536 | 6.0 | 71 | 0.8 | 651 | 5.2 | 61 | 0.5 | 586 | 4.1 | 83 | 0.6 |
| **<6/18-6/60** | **3356** | **31.4** | **698** | **7.0** | **3029** | **33.7** | **476** | **5.6** | **3593** | **28.5** | **464** | **3.9** | **3504** | **24.8** | **464** | **3.5** |
| 5/60 | 52 | 0.5 | 8 | 0.1 | 52 | 0.6 | 10 | 0.1 | 38 | 0.3 | 8 | 0.1 | 50 | 0.4 | 11 | 0.1 |
| 4/60 | 48 | 0.4 | 13 | 0.1 | 25 | 0.3 | 7 | 0.1 | 33 | 0.3 | 5 | 0.0 | 31 | 0.2 | 6 | 0.0 |
| 3/60 | 94 | 0.9 | 26 | 0.3 | 79 | 0.9 | 29 | 0.3 | 114 | 0.9 | 37 | 0.3 | 105 | 0.7 | 33 | 0.3 |
| **<6/60-3/60** | **194** | **1.8** | **47** | **0.5** | **156** | **1.8** | **46** | **0.5** | **185** | **1.5** | **50** | **0.4** | **186** | **1.3** | **50** | **0.4** |
| 2/60 | 62 | 0.6 | 25 | 0.3 | 54 | 0.6 | 16 | 0.2 | 60 | 0.5 | 15 | 0.1 | 56 | 0.4 | 16 | 0.1 |
| 1/60 | 68 | 0.6 | 23 | 0.2 | 33 | 0.4 | 8 | 0.1 | 46 | 0.4 | 16 | 0.1 | 40 | 0.3 | 18 | 0.1 |
| CF | 120 | 1.1 | 47 | 0.5 | 73 | 0.8 | 23 | 0.3 | 87 | 0.7 | 27 | 0.2 | 87 | 0.6 | 31 | 0.2 |
| HM | 69 | 0.6 | 42 | 0.4 | 31 | 0.3 | 12 | 0.1 | 46 | 0.4 | 20 | 0.2 | 48 | 0.3 | 26 | 0.2 |
| PL | 23 | 0.2 | 13 | 0.1 | 7 | 0.1 | 4 | 0.0 | 9 | 0.1 | 6 | 0.1 | 7 | 0.0 | 5 | 0.0 |
| NPL | 8 | 0.1 | 7 | 0.1 | 7 | 0.1 | 0 | 0.0 | 3 | 0.0 | 1 | 0.0 | 3 | 0.0 | 1 | 0.0 |
| **<3/60** | **350** | **3.2** | **157** | **1.6** | **205** | **2.3** | **63** | **0.7** | **251** | **2.1** | **85** | **0.7** | **241** | **1.7** | **97** | **0.7** |
| **TOTAL** | **10689** | **100.0** | **9934** | **100.0** | **8995** | **100.0** | **8396** | **100.0** | **12618** | **100.0** | **11782** | **100.0** | **14142** | **100.0** | **13171** | **100.0** |

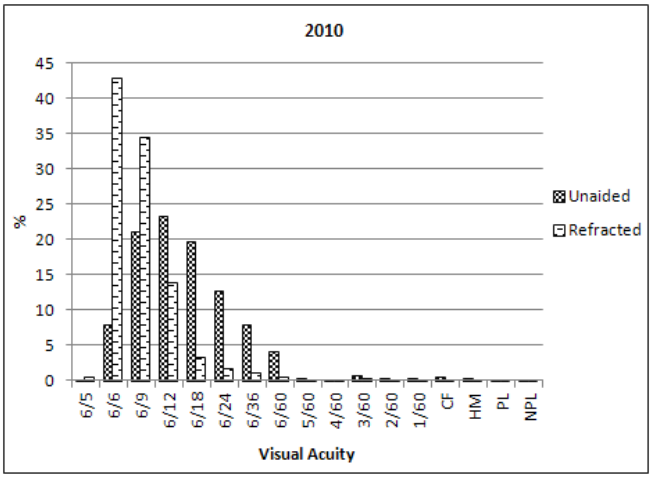
| Year | 2011 | | | | 2012 | | | | 2013 | | | | 2014 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | | Unaided | | Refracted | |
| VA | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| 6/5 | 14 | 0.1 | 105 | 0.7 | 11 | 0.1 | 82 | 0.5 | 15 | 0.1 | 80 | 0.4 | 14 | 0.1 | 87 | 0.4 |
| 6/6 | 1249 | 7.9 | 6314 | 43.3 | 1422 | 8.3 | 6779 | 44.0 | 1922 | 9.9 | 8110 | 45.2 | 2214 | 10.3 | 9296 | 45.5 |
| 6/9 | 3447 | 21.8 | 5167 | 35.4 | 3845 | 22.5 | 5358 | 34.8 | 4846 | 24.9 | 6281 | 35.0 | 5369 | 24.9 | 7111 | 34.8 |
| 6/12 | 3587 | 22.6 | 1882 | 12.9 | 3870 | 22.7 | 2060 | 13.4 | 4502 | 23.1 | 2273 | 12.7 | 5036 | 23.3 | 2677 | 13.1 |
| **6/12 and better** | **8297** | **52.4** | **13468** | **92.4** | **9148** | **53.6** | **14279** | **92.6** | **11285** | **58.0** | **16744** | **93.3** | **12633** | **58.5** | **19171** | **93.8** |
| 6/18 | 3061 | 19.3 | 480 | 3.3 | 3212 | 18.8 | 501 | 3.3 | 3508 | 18.0 | 508 | 2.8 | 4004 | 18.5 | 548 | 2.7 |
| **<6/12-6/18** | **3061** | **19.3** | **480** | **3.3** | **3212** | **18.8** | **501** | **3.3** | **3508** | **18.0** | **508** | **2.8** | **4004** | **18.5** | **548** | **2.7** |
| 6/24 | 2098 | 13.2 | 267 | 1.8 | 2154 | 12.6 | 248 | 1.6 | 2235 | 11.5 | 288 | 1.6 | 2482 | 11.5 | 305 | 1.5 |
| 6/36 | 1253 | 7.9 | 132 | 0.9 | 1419 | 8.3 | 159 | 1.0 | 1268 | 6.5 | 160 | 0.9 | 1284 | 5.9 | 164 | 0.8 |
| 6/60 | 651 | 4.1 | 107 | 0.7 | 640 | 3.7 | 100 | 0.6 | 683 | 3.5 | 90 | 0.5 | 685 | 3.2 | 98 | 0.5 |
| **<6/18-6/60** | **4002** | **25.3** | **506** | **3.5** | **4213** | **24.7** | **507** | **3.3** | **4186** | **21.5** | **538** | **3.0** | **4451** | **20.6** | **567** | **2.8** |
| 5/60 | 40 | 0.3 | 5 | 0.0 | 41 | 0.2 | 4 | 0.0 | 41 | 0.2 | 7 | 0.0 | 38 | 0.2 | 11 | 0.1 |
| 4/60 | 39 | 0.2 | 8 | 0.1 | 31 | 0.2 | 3 | 0.0 | 34 | 0.2 | 12 | 0.1 | 25 | 0.1 | 4 | 0.0 |
| 3/60 | 131 | 0.8 | 26 | 0.2 | 142 | 0.8 | 33 | 0.2 | 139 | 0.7 | 33 | 0.2 | 152 | 0.7 | 44 | 0.2 |
| **<6/60-3/60** | **210** | **1.3** | **39** | **0.3** | **214** | **1.3** | **40** | **0.3** | **214** | **1.1** | **52** | **0.3** | **215** | **1.0** | **59** | **0.3** |
| 2/60 | 71 | 0.4 | 22 | 0.2 | 78 | 0.5 | 18 | 0.1 | 72 | 0.4 | 23 | 0.1 | 83 | 0.4 | 20 | 0.1 |
| 1/60 | 51 | 0.3 | 15 | 0.1 | 60 | 0.4 | 22 | 0.1 | 55 | 0.3 | 21 | 0.1 | 75 | 0.3 | 19 | 0.1 |
| CF | 93 | 0.6 | 19 | 0.1 | 102 | 0.6 | 26 | 0.2 | 93 | 0.5 | 30 | 0.2 | 84 | 0.4 | 27 | 0.1 |
| HM | 46 | 0.3 | 23 | 0.2 | 37 | 0.2 | 15 | 0.1 | 46 | 0.2 | 21 | 0.1 | 43 | 0.2 | 19 | 0.1 |
| PL | 9 | 0.1 | 3 | 0.0 | 11 | 0.1 | 3 | 0.0 | 6 | 0.0 | 2 | 0.0 | 8 | 0.0 | 6 | 0.0 |
| NPL | 6 | 0.0 | 1 | 0.0 | 3 | 0.0 | 2 | 0.0 | 7 | 0.0 | 5 | 0.0 | 3 | 0.0 | 1 | 0.0 |
| **<3/60** | **276** | **1.7** | **83** | **0.6** | **291** | **1.7** | **86** | **0.6** | **279** | **1.4** | **102** | **0.6** | **296** | **1.4** | **92** | **0.5** |
| **TOTAL** | **15846** | **100.0** | **14576** | **100.0** | **17078** | **100.0** | **15413** | **100.0** | **19472** | **100.0** | **17944** | **100.0** | **21599** | **100.0** | **20437** | **100.0** |

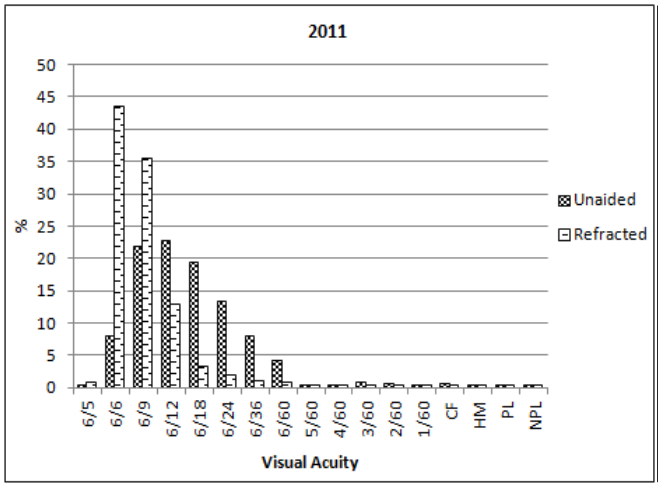
*Number and percentage (%) are based on available information.*

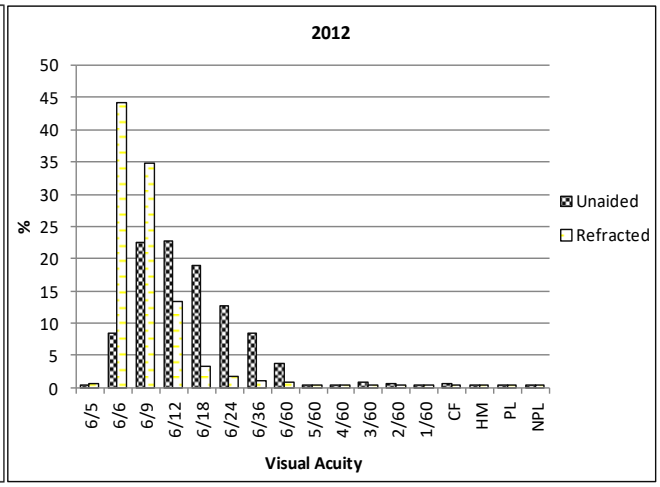

2007
%
Visual Acuity
Unaided
Refracted


2008
%
Visual Acuity
Unaided
Refracted


2009
%
Visual Acuity
Unaided
Refracted


2010
%
6/5
6/6
6/9
6/12
6/18
6/24
6/36
6/60
5/60
4/60
3/60
2/60
1/60
CF
HM
PL
NPL
Visual Acuity
Unaided
Refracted


2011
%
6/5
6/6
6/9
6/12
6/18
6/24
6/36
6/60
5/60
4/60
3/60
2/60
1/60
CF
HM
PL
NPL
Visual Acuity
Unaided
Refracted


2012
%
6/5
6/6
6/9
6/12
6/18
6/24
6/36
6/60
5/60
4/60
3/60
2/60
1/60
CF
HM
PL
NPL
Visual Acuity
Unaided
Refracted

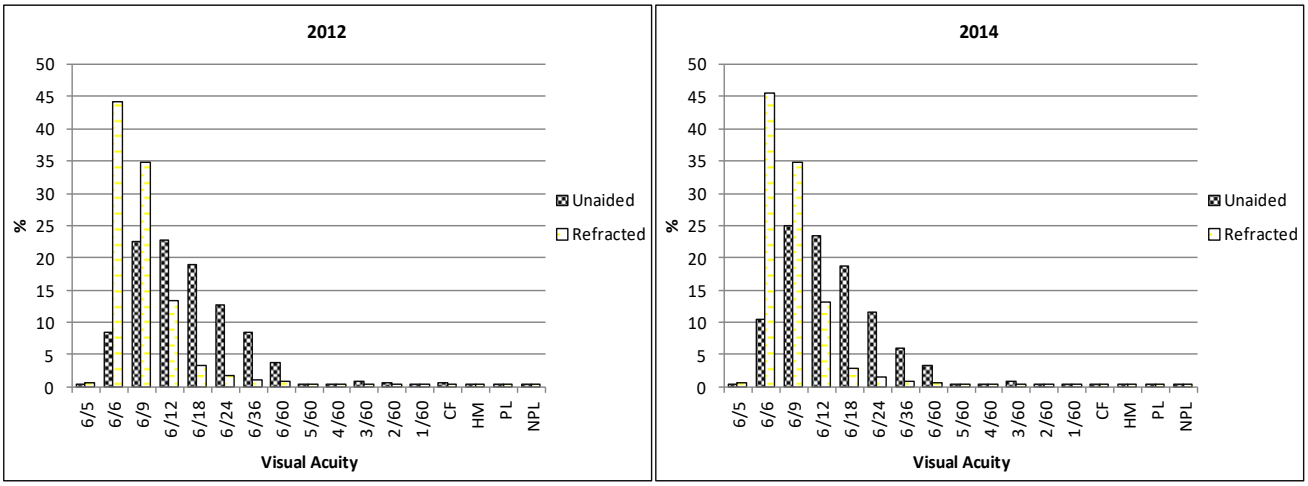



Figure 1.5.6-1: Post-operative Visual Acuity for Eyes Without Ocular Co-morbidity, CSR 2007-2014

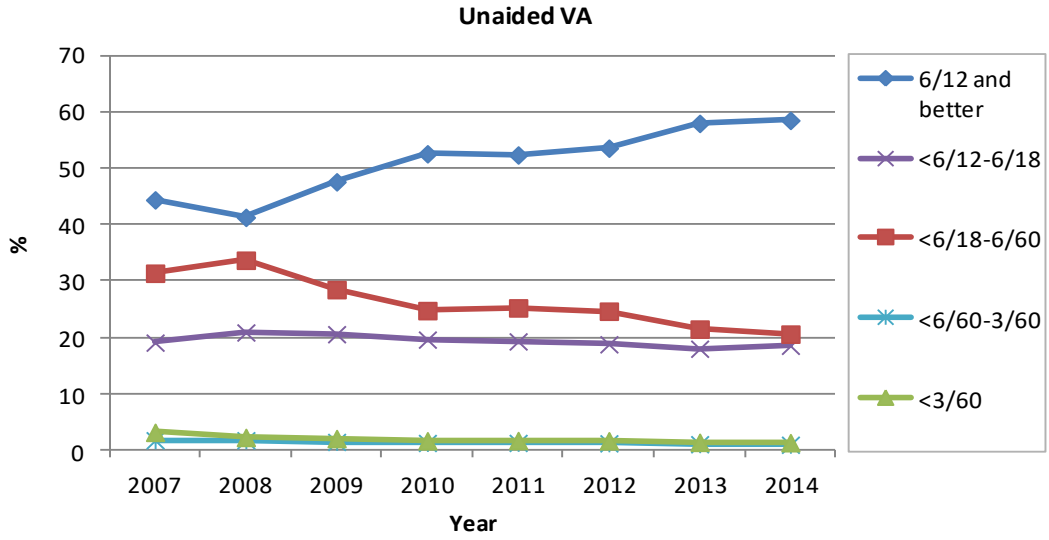



Figure 1.5.6-2: Post-operative Unaided Visual Acuity by Visual Category (No Ocular Co-morbidity), CSR 2007- 2014

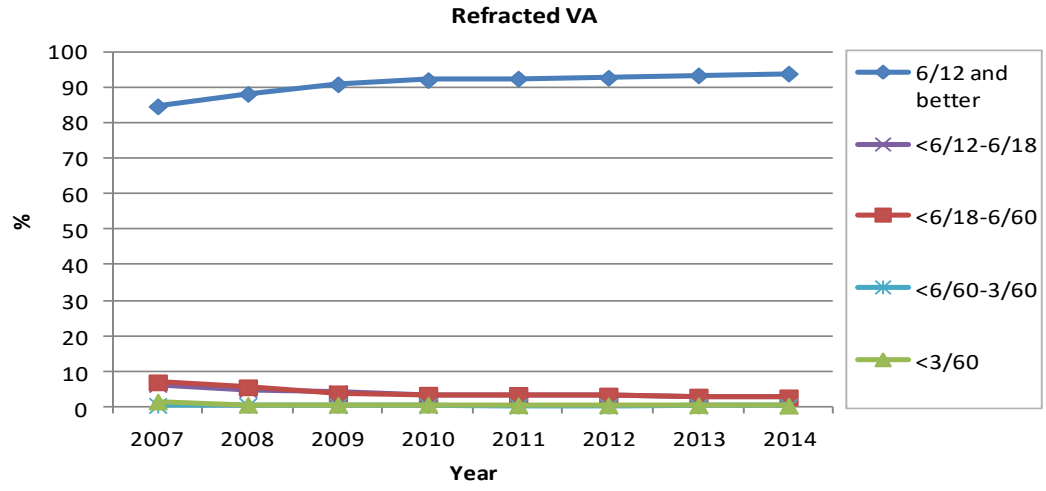



Figure 1.5.6-3: Post-operative Refracted Visual Acuity by Visual Category (No Ocular Co-morbidity), CSR 2007-2014

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

The patients who had undergone phacoemulsification showed the highest proportion of achieving good visual outcome when compared with other surgeries. The percentage demonstrated an increasing trend (from 86.0% in 2007 to 94.8% in 2014). When complication occurred in phacoemulsification which necessitated conversion to ECCE, the visual outcome became less favorable.

The proportion of eyes with unaided VA 6/12 or better was poor in almost all types of surgery throughout the years. This percentage increased double folds following refraction. These findings indicated that a large number of patients required some forms of visual rehabilitation or correction post-operatively.

Table 1.5.7-1: Post-operative Visual Acuity in Eyes without Ocular Co-morbidity by Types of Surgery, CSR 2007-2014

| Year | 2007 | | | | | | 2008 | | | | | | 2009 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unaided | | | Refracted | | | Unaided | | | Refracted | | | Unaided | | | Refracted | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| All Surgeries | 7130 | 3080 | 43.0 | 6632 | 5551 | 84.0 | 8983 | 3719 | 41.0 | 8390 | 7392 | 88.0 | 12618 | 5990 | 47.5 | 11782 | 10704 | 90.9 |
| Phaco | 4868 | 2332 | 48.0 | 4508 | 3890 | 86.0 | 6419 | 3017 | 47.0 | 5958 | 5440 | 91.0 | 9511 | 5038 | 53.0 | 9001 | 8397 | 93.3 |
| ECCE | 2033 | 675 | 33.0 | 1910 | 1520 | 80.0 | 2263 | 629 | 28.0 | 2158 | 1744 | 81.0 | 2607 | 816 | 31.3 | 2329 | 1967 | 84.5 |
| Phaco → ECCE | 158 | 36 | 23.0 | 143 | 89 | 62.0 | 201 | 40 | 20.0 | 184 | 140 | 76.0 | 270 | 53 | 19.6 | 259 | 200 | 77.2 |
| Lens Aspiration | 62 | 33 | 53.0 | 59 | 46 | 78.0 | 74 | 29 | 39.0 | 66 | 54 | 82.0 | 160 | 57 | 35.6 | 128 | 89 | 69.5 |
| ICCE | 15 | 2 | 13.0 | 10 | 4 | 39.0 | 24 | 4 | 17.0 | 19 | 11 | 58.0 | 29 | 7 | 24.1 | 25 | 15 | 60.0 |

| Year | 2010 | | | | | | 2011 | | | | | | 2012 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unaided | | | Refracted | | | Unaided | | | Refracted | | | Unaided | | | Refracted | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| All Surgeries | 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 | 11520 | 6589 | 57.2 | 10816 | 10151 | 93.8 | 13036 | 7454 | 57.2 | 12155 | 11465 | 94.3 | 14540 | 8439 | 58.0 | 13344 | 12564 | 94.2 |
| ECCE | 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 | 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 | 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 | 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 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unaided | | | Refracted | | | Unaided | | | Refracted | | |
| | 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 |
| Phaco | 17505 | 10710 | 61.2 | 16155 | 15275 | 94.5 | 19937 | 12128 | 60.8 | 18914 | 17924 | 94.8 |
| ECCE | 1403 | 386 | 27.5 | 1269 | 1053 | 83.0 | 1139 | 335 | 29.4 | 1051 | 886 | 84.3 |
| Phaco → ECCE | 306 | 69 | 22.5 | 281 | 219 | 77.9 | 301 | 81 | 26.9 | 283 | 211 | 74.6 |
| Lens Aspiration | 164 | 84 | 51.2 | 151 | 129 | 85.4 | 145 | 66 | 45.5 | 125 | 107 | 85.6 |
| ICCE | 38 | 8 | 21.1 | 35 | 28 | 80.0 | 30 | 8 | 26.7 | 28 | 16 | 57.1 |

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

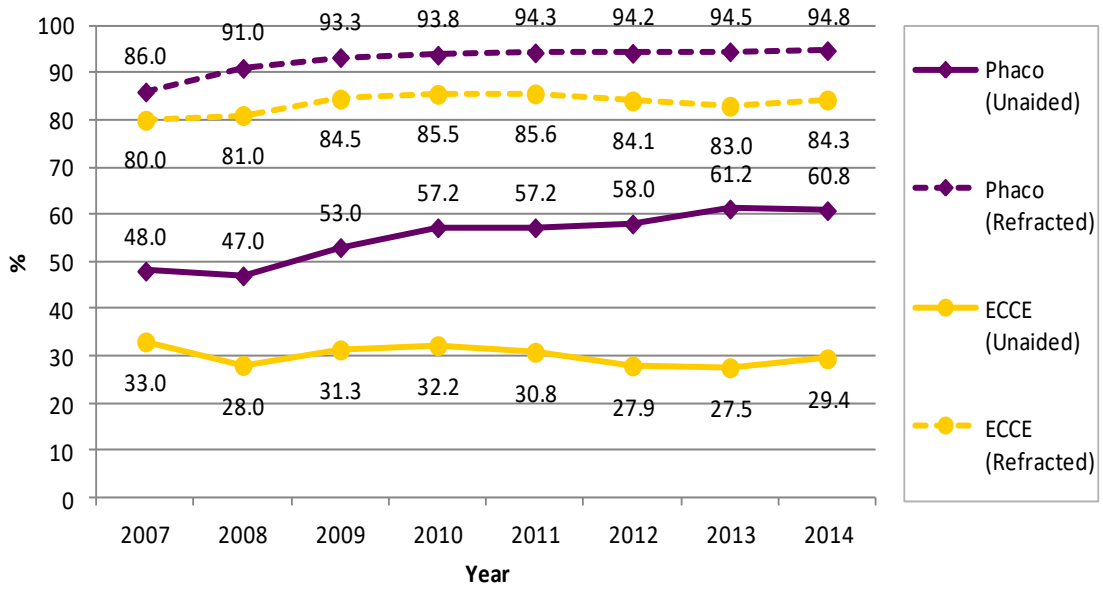



Figure 1.5.7-1: Post-operative Visual Acuity 6/12 or Better for Eyes Without Ocular Co-morbidity (ECCE and Phaco), CSR 2007-2014

Table 1.5.7-2: Post-operative Refracted Visual Acuity in Eyes without Ocular Co-morbidity by Intra-operative Complications and Types of Surgery, CSR 2014

| | Types of Cataract Surgery | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | | Lens Aspiration | | | ECCE | | | Phaco | | | Phaco → ECCE | | | ICCE | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| | 20425 | 19160 | 93.8 | 125 | 107 | 85.6 | 1051 | 886 | 84.3 | 18914 | 17924 | 94.8 | 283 | 211 | 74.6 | 28 | 16 | 57.1 |
| With intra-op complications | 875 | 704 | 80.5 | 9 | 7 | 77.8 | 99 | 75 | 75.8 | 619 | 522 | 84.3 | 133 | 93 | 69.9 | 6 | 3 | 50.0 |
| No intra-op complications | 19550 | 18456 | 94.4 | 116 | 100 | 86.2 | 952 | 811 | 85.2 | 18295 | 17402 | 95.1 | 150 | 118 | 78.7 | 22 | 13 | 59.1 |

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

Table 1.5.7-3: Post-operative Refracted Visual Acuity in Eyes without Ocular Co-morbidity by Surgeon Status and Types of Surgery, CSR 2014

| | Types of Cataract Surgery | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | | Lens Aspiration | | | ECCE | | | Phaco | | | Phaco → ECCE | | | ICCE | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| | 20425 | 19160 | 93.8 | 125 | 107 | 85.6 | 1051 | 886 | 84.3 | 18914 | 17924 | 94.8 | 283 | 211 | 74.6 | 28 | 16 | 57.1 |
| Specialist | 18254 | 17160 | 94.0 | 118 | 100 | 84.7 | 651 | 551 | 84.6 | 17201 | 16304 | 94.8 | 243 | 179 | 73.7 | 22 | 13 | 59.1 |
| Gazetting Specialis | 1165 | 1078 | 92.5 | 5 | 5 | 100.0 | 70 | 57 | 81.4 | 1052 | 988 | 93.9 | 32 | 25 | 78.1 | 3 | 1 | 33.3 |
| Medical Officer | 966 | 883 | 91.4 | 2 | 2 | 100.0 | 329 | 277 | 84.2 | 623 | 595 | 95.5 | 7 | 6 | 85.7 | 3 | 2 | 66.7 |

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

In general, better visual outcomes were observed in ECCE performed by the specialists. Otherwise they are all comparable.

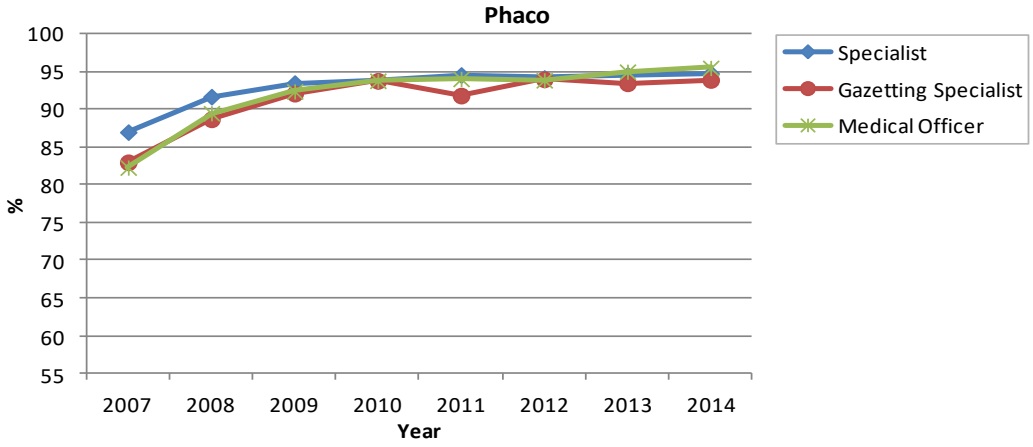



Figure 1.5.7-2: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes Without Ocular Co-morbidity by Surgeon Status in Phaco, CSR 2007-2014

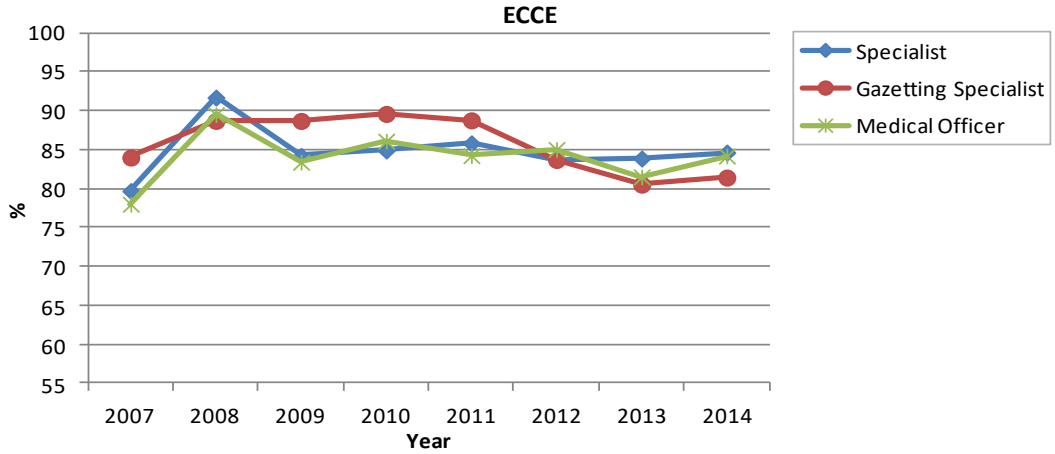



Figure 1.5.7-3: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes Without Ocular Co-morbidity by Surgeon Status in ECCE, CSR 2007-2014

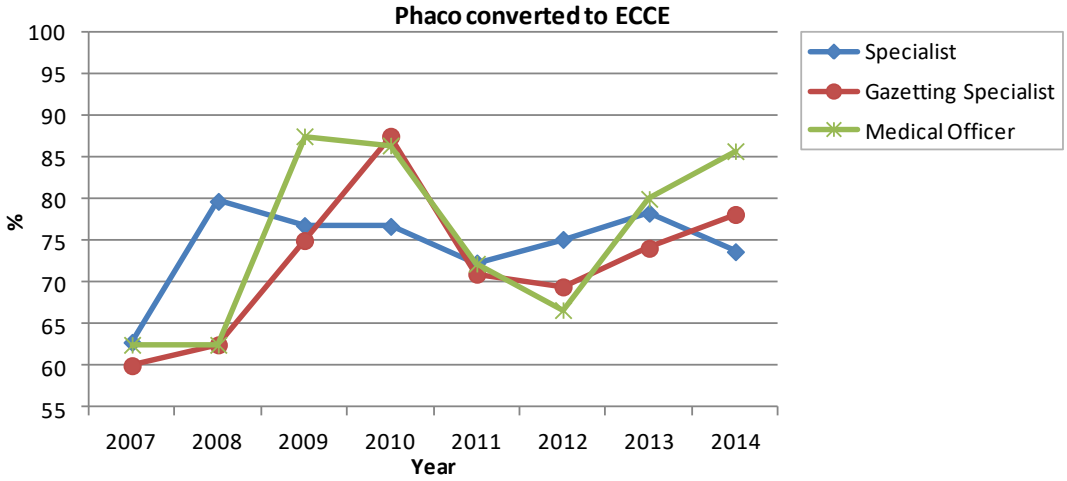



Figure 1.5.7-4: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes Without Ocular Co-morbidity by Surgeon Status in Phaco Converted to ECCE, CSR 2007-2014

Table 1.5.7-4: Post-operative Refracted Visual Acuity in Eyes without Ocular Co-morbidity by SDP and Types of Surgery, CSR 2014

| Hospital | Type of Cataract Surgery | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Patients | All Surgeries | | | Lens Aspiration | | | ECCE | | | Phaco | | | Phaco → ECCE | | | ICCE | | |
| | **N** | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** | **N** | **n** | **%** |
| **All centre** | 20437 | 20425 | 19160 | 93.8 | 125 | 107 | 85.6 | 1051 | 886 | 84.3 | 18914 | 17924 | 94.8 | 283 | 211 | 74.6 | 28 | 16 | 57.1 |
| Alor Setar | 1021 | 1021 | 925 | 90.6 | 9 | 7 | 77.8 | 119 | 92 | 77.3 | 876 | 818 | 93.4 | 12 | 6 | 50.0 | 0 | 0 | 0.0 |
| Ampang | 463 | 463 | 457 | 98.7 | 0 | 0 | 0.0 | 16 | 16 | 100.0 | 439 | 433 | 98.6 | 7 | 7 | 100.0 | 0 | 0 | 0.0 |
| Batu Pahat | 272 | 272 | 257 | 94.5 | 1 | 1 | 100.0 | 32 | 27 | 84.4 | 224 | 216 | 96.4 | 15 | 13 | 86.7 | 0 | 0 | 0.0 |
| Bintulu | 253 | 253 | 241 | 95.3 | 0 | 0 | 0.0 | 3 | 3 | 100.0 | 244 | 232 | 95.1 | 6 | 6 | 100.0 | 0 | 0 | 0.0 |
| Bukit Mertajam | 369 | 369 | 364 | 98.6 | 0 | 0 | 0.0 | 37 | 35 | 94.6 | 329 | 326 | 99.1 | 3 | 3 | 100.0 | 0 | 0 | 0.0 |
| Ipoh | 1636 | 1636 | 1517 | 92.7 | 5 | 3 | 60.0 | 52 | 44 | 84.6 | 1563 | 1458 | 93.3 | 12 | 8 | 66.7 | 1 | 1 | 100.0 |
| Johor Bahru | 481 | 481 | 436 | 90.6 | 3 | 2 | 66.7 | 11 | 7 | 63.6 | 461 | 424 | 92.0 | 4 | 2 | 50.0 | 1 | 1 | 100.0 |
| Kangar | 129 | 129 | 120 | 93.0 | 1 | 1 | 100.0 | 3 | 3 | 100.0 | 125 | 116 | 92.8 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Kemaman | 13 | 13 | 13 | 100.0 | 0 | 0 | 0.0 | 4 | 4 | 100.0 | 9 | 9 | 100.0 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Keningau | 78 | 78 | 78 | 100.0 | 0 | 0 | 0.0 | 17 | 17 | 100.0 | 61 | 61 | 100.0 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Klang | 973 | 973 | 906 | 93.1 | 4 | 4 | 100.0 | 42 | 34 | 81.0 | 910 | 856 | 94.1 | 11 | 9 | 81.8 | 3 | 0 | 0.0 |
| Kota Bharu | 43 | 43 | 41 | 95.3 | 2 | 1 | 50.0 | 10 | 9 | 90.0 | 31 | 31 | 100.0 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Kota Kinabalu | 652 | 651 | 598 | 91.9 | 7 | 5 | 71.4 | 62 | 54 | 87.1 | 559 | 526 | 94.1 | 14 | 9 | 64.3 | 4 | 2 | 50.0 |
| Kuala Krai | 156 | 156 | 150 | 96.2 | 2 | 1 | 50.0 | 13 | 13 | 100.0 | 135 | 130 | 96.3 | 6 | 6 | 100.0 | 0 | 0 | 0.0 |
| Kuala Lumpur | 743 | 737 | 676 | 91.7 | 3 | 3 | 100.0 | 92 | 78 | 84.8 | 631 | 587 | 93.0 | 11 | 8 | 72.7 | 0 | 0 | 0.0 |
| Kuala Pilah | 336 | 336 | 326 | 97.0 | 4 | 4 | 100.0 | 17 | 16 | 94.1 | 301 | 294 | 97.7 | 12 | 10 | 83.3 | 2 | 2 | 100.0 |
| Kuala Terengganu | 530 | 530 | 492 | 92.8 | 12 | 11 | 91.7 | 79 | 62 | 78.5 | 432 | 412 | 95.4 | 5 | 5 | 100.0 | 2 | 2 | 100.0 |
| Kuantan | 362 | 362 | 347 | 95.9 | 4 | 3 | 75.0 | 67 | 61 | 91.0 | 284 | 278 | 97.9 | 6 | 5 | 83.3 | 1 | 0 | 0.0 |
| Kuching | 1054 | 1054 | 961 | 91.2 | 6 | 5 | 83.3 | 4 | 2 | 50.0 | 1034 | 948 | 91.7 | 9 | 5 | 55.6 | 1 | 1 | 100.0 |
| Kulim | 145 | 145 | 136 | 93.8 | 3 | 1 | 33.3 | 6 | 4 | 66.7 | 134 | 130 | 97.0 | 1 | 1 | 100.0 | 1 | 0 | 0.0 |
| Melaka | 1023 | 1023 | 950 | 92.9 | 7 | 7 | 100.0 | 37 | 30 | 81.1 | 970 | 906 | 93.4 | 9 | 7 | 77.8 | 0 | 0 | 0.0 |
| Miri | 614 | 614 | 585 | 95.3 | 0 | 0 | 0.0 | 19 | 18 | 94.7 | 590 | 565 | 95.8 | 3 | 2 | 66.7 | 2 | 0 | 0.0 |
| Muar | 318 | 318 | 298 | 93.7 | 0 | 0 | 0.0 | 18 | 16 | 88.9 | 284 | 268 | 94.4 | 14 | 13 | 92.9 | 2 | 1 | 50.0 |
| Pulau Pinang | 823 | 823 | 781 | 94.9 | 2 | 2 | 100.0 | 3 | 3 | 100.0 | 811 | 771 | 95.1 | 4 | 3 | 75.0 | 1 | 1 | 100.0 |
| Putrajaya | 186 | 186 | 178 | 95.7 | 4 | 4 | 100.0 | 8 | 5 | 62.5 | 166 | 162 | 97.6 | 8 | 7 | 87.5 | 0 | 0 | 0.0 |
| Sandakan | 122 | 122 | 111 | 91.0 | 1 | 1 | 100.0 | 12 | 8 | 66.7 | 109 | 102 | 93.6 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Sarikei | 268 | 268 | 254 | 94.8 | 0 | 0 | 0.0 | 1 | 1 | 100.0 | 266 | 252 | 94.7 | 0 | 0 | 0.0 | 1 | 1 | 100.0 |
| Selayang | 408 | 408 | 371 | 90.9 | 13 | 11 | 84.6 | 15 | 13 | 86.7 | 371 | 342 | 92.2 | 6 | 3 | 50.0 | 1 | 0 | 0.0 |
| Serdang | 609 | 609 | 548 | 90.0 | 8 | 8 | 100.0 | 25 | 22 | 88.0 | 559 | 507 | 90.7 | 17 | 11 | 64.7 | 0 | 0 | 0.0 |
| Seremban | 707 | 707 | 664 | 93.9 | 1 | 1 | 100.0 | 19 | 15 | 78.9 | 681 | 645 | 94.7 | 6 | 3 | 50.0 | 0 | 0 | 0.0 |
| Sibu | 323 | 323 | 308 | 95.4 | 1 | 1 | 100.0 | 2 | 2 | 100.0 | 320 | 305 | 95.3 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Sri Manjung | 415 | 412 | 397 | 96.4 | 0 | 0 | 0.0 | 5 | 3 | 60.0 | 407 | 394 | 96.8 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Sultan Ismail | 317 | 317 | 314 | 99.1 | 4 | 4 | 100.0 | 30 | 29 | 96.7 | 273 | 271 | 99.3 | 10 | 10 | 100.0 | 0 | 0 | 0.0 |
| Sungai Buloh | 411 | 411 | 379 | 92.2 | 2 | 1 | 50.0 | 18 | 11 | 61.1 | 375 | 358 | 95.5 | 16 | 9 | 56.3 | 0 | 0 | 0.0 |
| Sungei Petani | 294 | 294 | 284 | 96.6 | 8 | 8 | 100.0 | 12 | 9 | 75.0 | 267 | 262 | 98.1 | 7 | 5 | 71.4 | 0 | 0 | 0.0 |
| Taiping | 315 | 315 | 314 | 99.7 | 0 | 0 | 0.0 | 8 | 8 | 100.0 | 307 | 306 | 99.7 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| Tawau | 84 | 84 | 75 | 89.3 | 0 | 0 | 0.0 | 19 | 17 | 89.5 | 61 | 55 | 90.2 | 3 | 2 | 66.7 | 1 | 1 | 100.0 |
| Teluk Intan | 494 | 492 | 474 | 96.3 | 0 | 0 | 0.0 | 16 | 14 | 87.5 | 471 | 457 | 97.0 | 3 | 2 | 66.7 | 1 | 0 | 0.0 |
| Temerloh | 775 | 775 | 727 | 93.8 | 7 | 6 | 85.7 | 56 | 44 | 78.6 | 693 | 665 | 96.0 | 18 | 11 | 61.1 | 1 | 1 | 100.0 |
| KK1M Terengganu | 29 | 29 | 28 | 96.6 | 0 | 0 | 0.0 | 7 | 6 | 85.7 | 22 | 22 | 100.0 | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| KK1M Kelantan | 71 | 71 | 67 | 94.4 | 0 | 0 | 0.0 | 26 | 24 | 92.3 | 42 | 40 | 95.2 | 2 | 2 | 100.0 | 0 | 0 | 0.0 |
| KK1M Sarawak | 551 | 551 | 494 | 89.7 | 0 | 0 | 0.0 | 2 | 1 | 50.0 | 548 | 493 | 90.0 | 1 | 0 | 0.0 | 0 | 0 | 0.0 |
| MAIWP | 1571 | 1571 | 1518 | 96.6 | 1 | 1 | 100.0 | 7 | 6 | 85.7 | 1539 | 1491 | 96.9 | 22 | 18 | 81.8 | 2 | 2 | 100.0 |

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

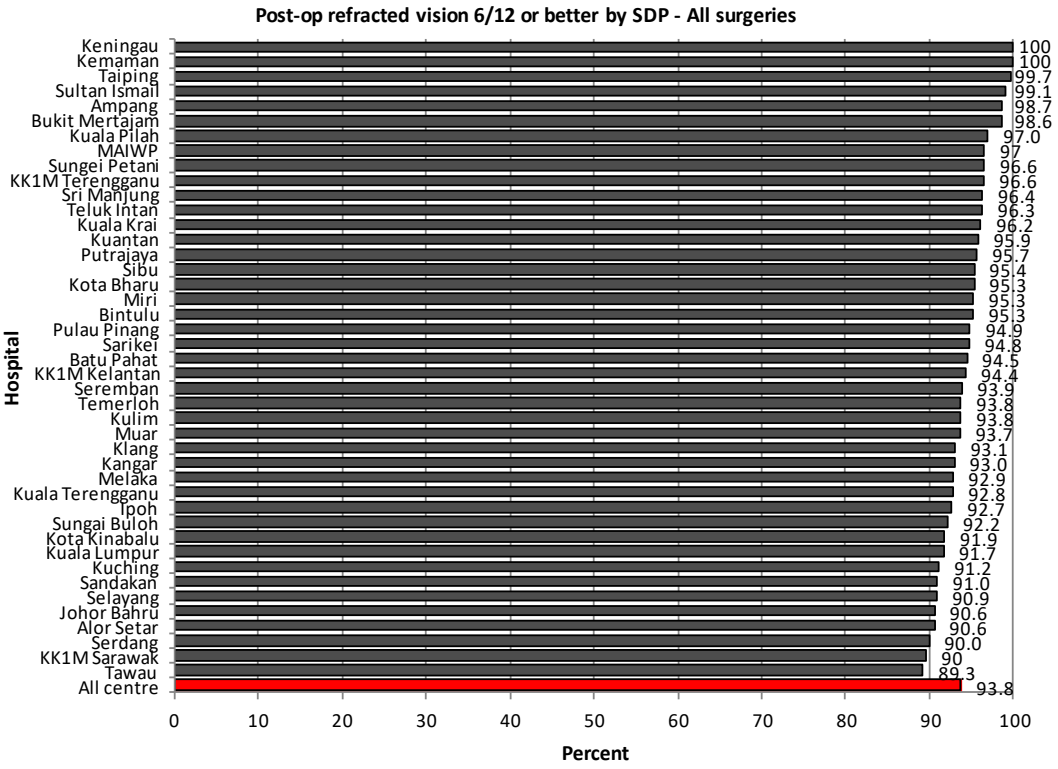



Figure 1.5.7-5: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes Without Ocular Co-morbidity by SDP (All Surgery), CSR 2014

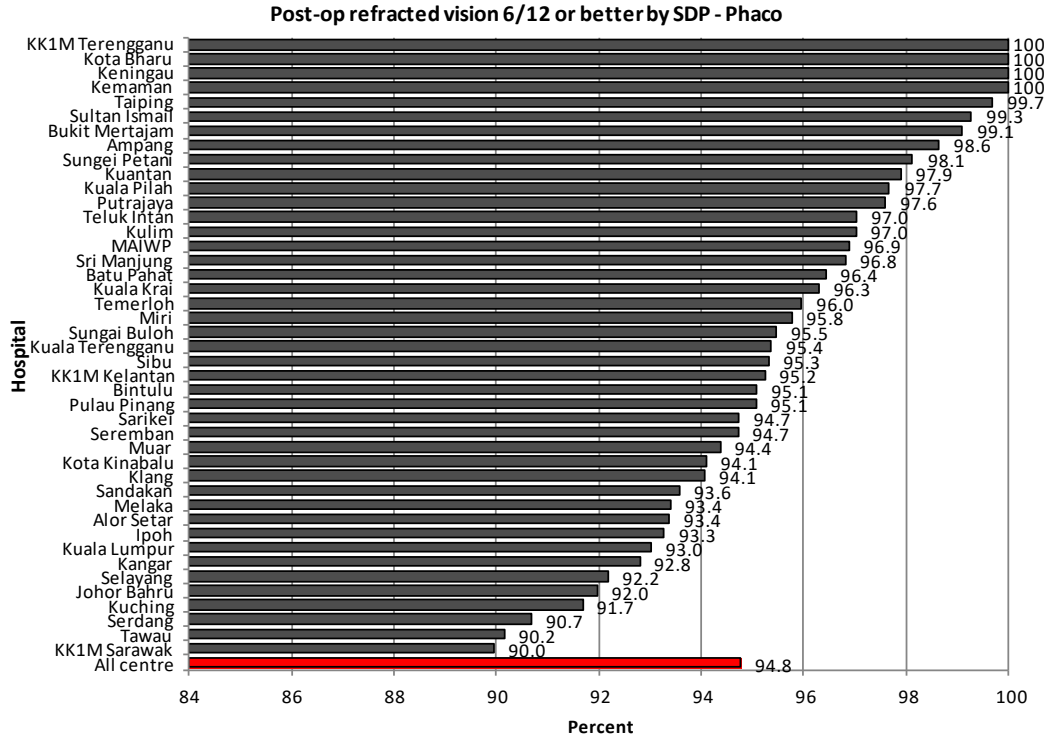



Figure 1.5.7-6: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes Without Ocular Co-morbidity by SDP (Phaco), CSR 2014

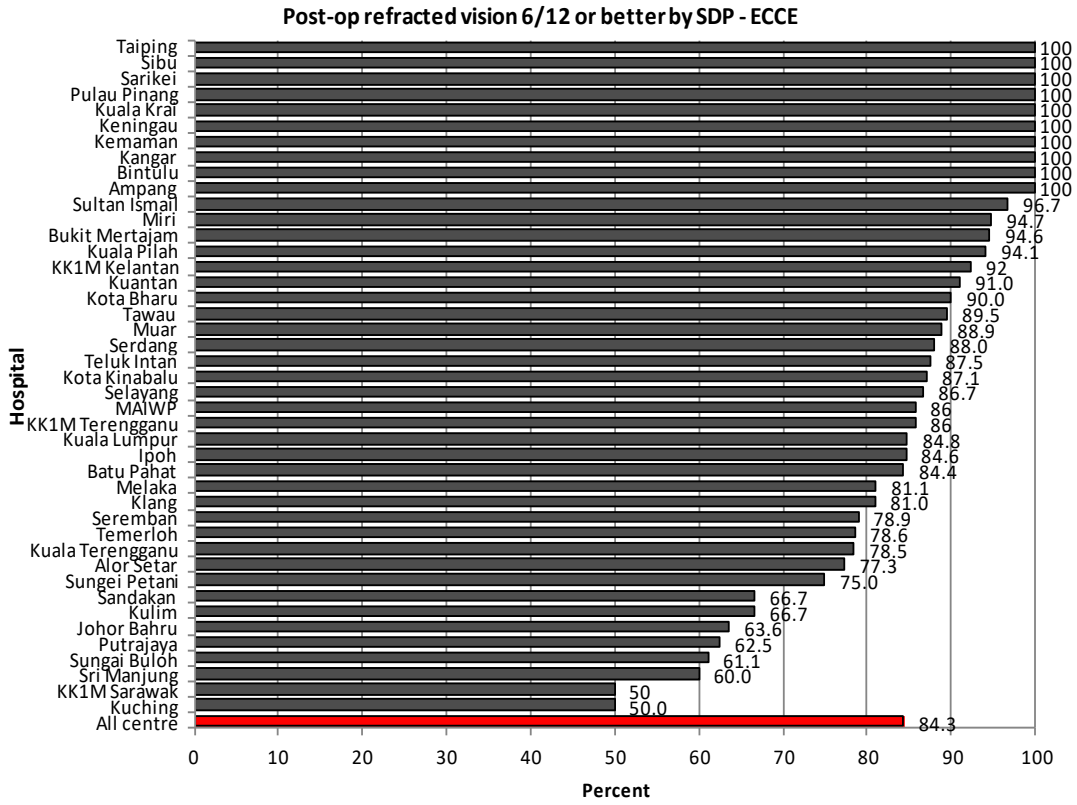



Figure 1.5.7-7: Post-operative Refracted Visual Acuity 6/12 or Better in Eyes Without Ocular Co-morbidity by SDP (ECCE), CSR 2014

### 1.5.8 Reasons for No Record of Visual Acuity

Table 1.5.8-1: Reasons for No Records of Visual Acuity, CSR 2007-2014

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Reasons** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| All cases | 1428 | 100.0 | 1535 | 100.0 | 1805 | 100.0 | 1659 | 100.0 | 2036 | 100.0 | 2022 | 100.0 | 2333 | 100.0 | 2247 | 100.0 |
| Loss to follow-up | 1018 | 71.3 | 1230 | 80.1 | 1261 | 69.9 | 1078 | 65.0 | 1362 | 66.9 | 1451 | 71.8 | 1697 | 72.7 | 1698 | 75.6 |
| Discharged by doctor | 31 | 2.2 | 13 | 0.8 | 44 | 2.4 | 38 | 2.3 | 32 | 1.6 | 22 | 1.1 | 36 | 1.5 | 21 | 0.9 |
| Unable to take vision | 47 | 3.3 | 26 | 1.7 | 30 | 1.7 | 33 | 2.0 | 27 | 1.3 | 33 | 1.6 | 26 | 1.1 | 15 | 0.7 |
| Others | 269 | 18.8 | 194 | 12.6 | 222 | 12.3 | 210 | 12.7 | 186 | 9.1 | 281 | 13.9 | 260 | 11.1 | 238 | 10.6 |

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

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

The main contributing factors for eyes with post-operative refracted VA worse than 6/12 were pre-existing ocular co-morbidity followed by high astigmatism. High astigmatism, PCO and CMO in particular showed a decreasing trend consistent with the shift towards phacoemulsification and improvement in other aspect of cataract surgery technique over the years. Percentages of eyes with preexisting ocular co-morbidity were in an increasing trend.

Table 1.5.9-1: Factors Contributing to Post-operative Refracted Visual Acuity of Worse than 6/12 (All Eyes), CSR 2007-2014

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Factors | 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 | |
| Preexisting ocular co-morbidity | 904 | 28.8 | 802 | 28.4 | 1016 | 34.2 | 1364 | 40.2 | 1412 | 39.3 | 1544 | 41.8 | 1571 | 39.8 | 1715 | 40.2 |
| High astigmatism | 478 | 15.2 | 460 | 16.3 | 395 | 13.3 | 378 | 11.1 | 397 | 11.0 | 438 | 11.9 | 435 | 11.0 | 364 | 8.5 |
| Posterior capsular opacity | 140 | 4.5 | 112 | 4.0 | 136 | 4.6 | 112 | 3.3 | 111 | 3.1 | 114 | 3.1 | 91 | 2.3 | 94 | 2.2 |
| Cystoid macular oedema | 101 | 3.2 | 64 | 2.3 | 82 | 2.8 | 94 | 2.8 | 96 | 2.7 | 88 | 2.4 | 80 | 2.0 | 110 | 2.6 |
| Endophthalmitis | 14 | 0.4 | 6 | 0.2 | 6 | 0.2 | 5 | 0.1 | 2 | 0.1 | 4 | 0.1 | 2 | 0.1 | 10 | 0.2 |
| Corneal decompensation | 28 | 0.9 | 31 | 1.1 | 61 | 2.1 | 33 | 1.0 | 36 | 1.0 | 42 | 1.1 | 50 | 1.3 | 84 | 2.0 |
| Decentered IOL | 4 | 0.1 | 6 | 0.2 | 5 | 0.2 | 5 | 0.1 | 8 | 0.2 | 9 | 0.2 | 15 | 0.4 | 7 | 0.2 |
| Retinal detachment | 67 | 2.1 | 50 | 1.8 | 56 | 1.9 | 44 | 1.3 | 35 | 1.0 | 69 | 1.9 | 29 | 0.7 | 36 | 0.8 |
| Others | 620 | 19.8 | 603 | 21.3 | 794 | 26.7 | 857 | 25.2 | 927 | 25.8 | 1072 | 29.0 | 1111 | 28.1 | 1098 | 25.8 |

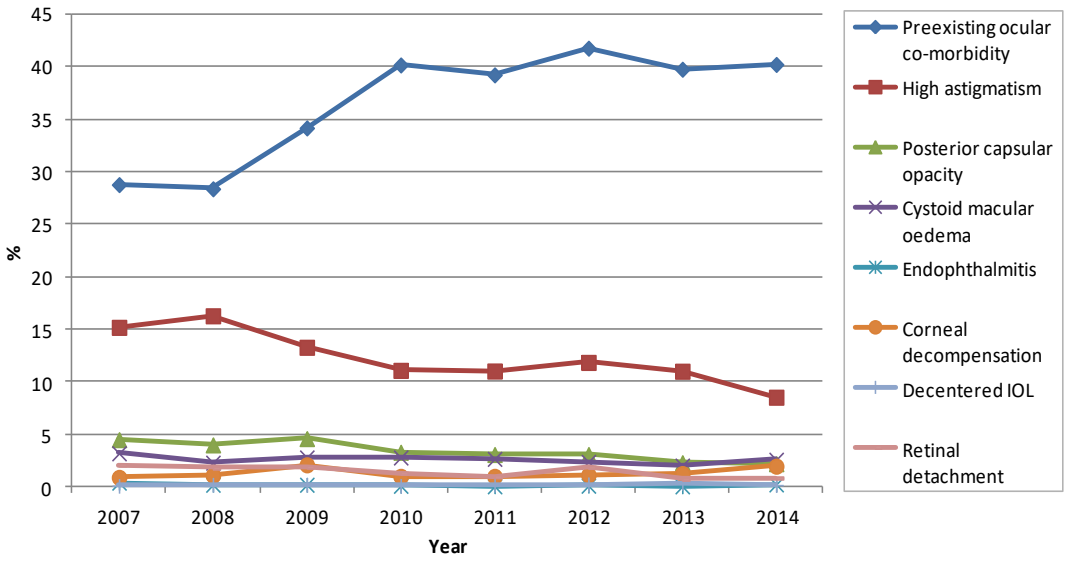



Figure 1.5.9-1: Factors Contributing to Post-operative Refracted Visual Acuity worse than 6/12 (All Eyes), CSR 2007-2014

Table 1.5.9-2: Factors Contributing to Post-operative Refracted Visual Acuity of Worse than 6/12 (Eyes without Ocular Co-morbidity), CSR 2007-2014

| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Factors | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| N | | | | | 1078 | | 1056 | | 1108 | | 1134 | | 1200 | | 1266 | |
| Preexisting ocular co-morbidity (not detected pre-operatively) | 271 | 17.6 | 229 | 16.5 | 121 | 11.2 | 92 | 8.7 | 66 | 6.0 | 98 | 8.6 | 70 | 5.8 | 112 | 8.8 |
| High astigmatism | 303 | 19.7 | 286 | 20.6 | 178 | 16.5 | 180 | 17.0 | 175 | 15.8 | 193 | 17.0 | 167 | 13.9 | 162 | 12.8 |
| Posterior capsular opacity | 83 | 5.4 | 61 | 4.4 | 87 | 8.1 | 65 | 6.2 | 50 | 4.5 | 51 | 4.5 | 39 | 3.3 | 39 | 3.1 |
| Cystoid macular oedema | 52 | 3.4 | 26 | 1.9 | 32 | 3.0 | 42 | 4.0 | 38 | 3.4 | 38 | 3.4 | 29 | 2.4 | 45 | 3.6 |
| Endophthalmitis | 9 | 0.6 | 4 | 0.3 | 4 | 0.4 | 2 | 0.2 | 1 | 0.1 | 2 | 0.2 | 0 | 0.0 | 4 | 0.3 |
| Corneal decompensation | 15 | 1.0 | 13 | 0.9 | 36 | 3.3 | 21 | 2.0 | 18 | 1.6 | 18 | 1.6 | 18 | 1.5 | 36 | 2.8 |
| Decentered IOL | 4 | 0.3 | 2 | 0.1 | 1 | 0.1 | 0 | 0.0 | 4 | 0.4 | 5 | 0.4 | 6 | 0.5 | 1 | 0.1 |
| Retinal detachment | 18 | 1.2 | 11 | 0.8 | 11 | 1.0 | 6 | 0.6 | 1 | 0.1 | 6 | 0.5 | 3 | 0.3 | 3 | 0.2 |
| Others | 320 | 20.8 | 323 | 23.3 | 368 | 34.1 | 389 | 36.8 | 453 | 40.9 | 506 | 44.6 | 521 | 43.4 | 501 | 39.6 |
| Missing/Unavailable | 461 | 30.0 | NA | - | NA | - | NA | - | NA | - | NA | - | NA | - | NA | - |

1.5.10 Actual or Residual Refractive Power (in Spherical Equivalent)

Target refractive power is the refractive power aimed by the surgeon for a patient while the actual or residual refractive power or spherical equivalent (SE) is the postoperative refraction results for the same eye. Myopic shift is the shift of the refraction status (actual refraction) towards more negative value as compared to the targeted refraction pre-operatively. It can be the results of surgery induced astigmatism or more anterior placement of IOL in the bag. It can also be due to indentation of eyeball during biometry resulting in shorter axial length.

Data from 2007 to 2009 demonstrated that ECCE produced more myopic shift as compared to phaco. The difference between the target and actual refraction remained a broad-based distribution curve indicating that a large percentage of eyes did not achieve the target refraction status post-operatively.

Table 1.5.10-1: Distribution of Target and Actual Refractive Power in ECCE and Phaco, CSR 2007-2014

| | Target Refraction | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | All Patient | | | | | | | |
| Years | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| N | 11876 | 15083 | 20279 | 24528 | 25887 | 26061 | 28693 | 32260 |
| Mean | -0.5 | -0.1 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 |
| SD | +0.4 | +0.4 | +0.4 | +0.4 | +0.3 | +0.4 | +0.3 | +0.3 |
| Median | -0.5 | -0.5 | -0.5 | -0.4 | -0.4 | -0.4 | -0.4 | -0.4 |
| Min | -9.0 | -9.9 | -9.9 | -9.1 | -9.1 | -8.0 | -8.5 | -8.1 |
| Max | +5.0 | +9.5 | +5.9 | +6.0 | +4.8 | +9.0 | +9.0 | +6.0 |

| | Actual Refraction | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECCE | | | | | | | | Phaco | | | | | | | |
| Years | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| N | 3624 | 4400 | 4014 | 3853 | 3714 | 3153 | 2809 | 2429 | 8343 | 12085 | 12891 | 15485 | 17197 | 17931 | 22173 | 25325 |
| Mean | -1.1 | -0.2 | -1.1 | -1.0 | -1.0 | -0.9 | -0.9 | -0.9 | -0.8 | 0.0 | -0.8 | -0.7 | -0.7 | -0.6 | -0.6 | -0.6 |
| SD | +1.4 | +1.2 | +1.3 | +1.4 | +1.3 | +1.4 | +1.4 | +1.2 | +1.1 | 1.03 | +1.0 | +0.9 | +0.9 | +0.9 | +0.8 | +0.8 |
| Median | -1.0 | -0.2 | -1.0 | -1.0 | -1.0 | -1.0 | -0.9 | -0.9 | -0.7 | 0.0 | -0.7 | -0.6 | -0.6 | -0.6 | -0.5 | -0.5 |
| Min | -10.0 | -8.4 | -10.0 | -9.2 | -7.3 | -8.5 | -10.0 | -6.7 | -10.0 | -10.0 | -9.0 | -10.0 | -10.0 | -9.9 | -9.7 | -10.0 |
| Max | +9.8 | +10.0 | +10.0 | +10.0 | +10.0 | +10.0 | +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*

| | Actual-Target Refraction | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | All Patient | | | | | | | |
| Years | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| N | 8738 | 12295 | 14670 | 17697 | 18813 | 17964 | 20457 | 23180 |
| Mean | -0.5 | -0.4 | -0.4 | -0.3 | -0.3 | -0.3 | -0.3 | -0.2 |
| SD | +1.1 | +1.2 | +1.1 | +1.1 | +1.0 | +1.0 | +0.9 | +0.9 |
| Median | -0.4 | -0.4 | -0.4 | -0.3 | -0.3 | -0.3 | -0.2 | -0.2 |
| Min | -9.5 | -9.9 | -8.8 | -9.8 | -9.2 | -9.9 | -9.7 | -9.4 |
| Max | +5.0 | +9.0 | +10.7 | +10.7 | +10.7 | +10.6 | +10.7 | +10.6 |

*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 1.5.10-2: Distribution of Target and Actual Refractive Power in ECCE and Phaco by Diopter, CSR 2007-2014

| | Target Refraction | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Patients | | | | | | | | | | | | | | | |
| **Years** | **2007** | | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | |
| Dioptre (D) | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| -10.0-<(-9.5) | 0 | 0.0 | 1 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| -9.5-<(-9.0) | 4 | 0.0 | 1 | 0.0 | 1 | 0.0 | 2 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| -9.0-<(-8.5) | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| -8.5-<(-8.0) | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 |
| -8.0-<(-7.5) | 2 | 0.0 | 3 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 1 | 0.0 |
| -7.5-<(-7.0) | 1 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| -7.0-<(-6.5) | 3 | 0.0 | 1 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 |
| -6.5-<(-5.0) | 1 | 0.0 | 2 | 0.0 | 7 | 0.0 | 4 | 0.0 | 10 | 0.0 | 10 | 0.0 | 9 | 0.0 | 10 | 0.0 |
| -5.0-<(-4.5) | 3 | 0.0 | 4 | 0.0 | 7 | 0.0 | 3 | 0.0 | 3 | 0.0 | 5 | 0.0 | 5 | 0.0 | 1 | 0.0 |
| -4.5-<(-4.0) | 2 | 0.0 | 3 | 0.0 | 5 | 0.0 | 10 | 0.0 | 3 | 0.0 | 5 | 0.0 | 3 | 0.0 | 4 | 0.0 |
| -4.0-<(-3.5) | 7 | 0.1 | 8 | 0.1 | 11 | 0.1 | 5 | 0.0 | 11 | 0.0 | 5 | 0.0 | 1 | 0.0 | 5 | 0.0 |
| -3.5-<(-3.0) | 6 | 0.0 | 7 | 0.0 | 11 | 0.1 | 15 | 0.1 | 12 | 0.0 | 6 | 0.0 | 8 | 0.0 | 5 | 0.0 |
| -3.0-<(-2.5) | 13 | 0.1 | 22 | 0.1 | 18 | 0.1 | 29 | 0.1 | 15 | 0.1 | 15 | 0.1 | 15 | 0.1 | 9 | 0.0 |
| -2.5-<(-2.0) | 29 | 0.2 | 21 | 0.1 | 29 | 0.1 | 33 | 0.1 | 26 | 0.1 | 38 | 0.1 | 35 | 0.1 | 27 | 0.1 |
| -2.0-<(-1.5) | 77 | 0.6 | 48 | 0.3 | 58 | 0.3 | 46 | 0.2 | 54 | 0.2 | 67 | 0.3 | 55 | 0.2 | 52 | 0.2 |
| -1.5-<(-1.0) | 429 | 3.5 | 373 | 2.5 | 260 | 1.3 | 292 | 1.2 | 201 | 0.8 | 226 | 0.9 | 174 | 0.6 | 209 | 0.6 |
| -1.0-<(-0.5) | 4670 | 37.7 | 6155 | 40.9 | 7972 | 39.3 | 7590 | 30.9 | 7507 | 29.0 | 7190 | 27.6 | 6241 | 21.8 | 6840 | 21.2 |
| -0.5-<0.0 | 6631 | 53.5 | 7481 | 49.7 | 10604 | 52.3 | 15220 | 62.1 | 16915 | 65.3 | 17421 | 66.8 | 21135 | 73.7 | 24210 | 75.0 |
| 0.0-<0.5 | 406 | 3.3 | 719 | 4.8 | 977 | 4.8 | 921 | 3.8 | 849 | 3.3 | 631 | 2.4 | 705 | 2.5 | 793 | 2.5 |
| 0.5-<1.0 | 77 | 0.6 | 145 | 1.0 | 182 | 0.9 | 238 | 1.0 | 234 | 0.9 | 216 | 0.8 | 187 | 0.7 | 73 | 0.2 |
| 1.0-<1.5 | 12 | 0.1 | 28 | 0.2 | 17 | 0.1 | 23 | 0.1 | 20 | 0.1 | 32 | 0.1 | 8 | 0.0 | 4 | 0.0 |
| 1.5-<2.0 | 5 | 0.0 | 14 | 0.1 | 22 | 0.1 | 19 | 0.1 | 9 | 0.0 | 52 | 0.2 | 28 | 0.1 | 5 | 0.0 |
| 2.0-<2.5 | 15 | 0.1 | 10 | 0.1 | 85 | 0.4 | 69 | 0.3 | 12 | 0.0 | 123 | 0.5 | 69 | 0.2 | 6 | 0.0 |
| 2.5-<3.0 | 0 | 0.0 | 6 | 0.0 | 4 | 0.0 | 3 | 0.0 | 2 | 0.0 | 10 | 0.0 | 11 | 0.0 | 2 | 0.0 |
| 3.0-<3.5 | 1 | 0.0 | 2 | 0.0 | 2 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 3.5-<4.0 | 1 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 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 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 4.5-<5.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5.0-<5.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5.5-<6.0 | 0 | 0.0 | 0 | 0.0 | 2 | 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 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 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 |
| 7.0-<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 |
| 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 |
| 8.0-<8.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 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 | 0.0 | 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 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| 9.5-<10.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |

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

| | Actual Refraction | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECCE | | | | | | | | | | | | | | | |
| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
| Dioptre (D) | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| -10.0-<(-9.5) | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| -9.5-<(-9.0) | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 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 |
| -8.5-<(-8.0) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 2 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| -8.0-<(-7.5) | 0 | 0.0 | 0 | 0.0 | 3 | 0.1 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| -7.5-<(-7.0) | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| -7.0-<(-6.5) | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 3 | 0.1 | 5 | 0.2 | 0 | 0.0 | 1 | 0.0 |
| -6.5-<(-5.0) | 0 | 0.0 | 3 | 0.1 | 10 | 0.2 | 10 | 0.3 | 16 | 0.4 | 4 | 0.1 | 2 | 0.1 | 6 | 0.2 |
| -5.0-<(-4.5) | 1 | 0.0 | 1 | 0.0 | 12 | 0.3 | 15 | 0.4 | 8 | 0.2 | 11 | 0.3 | 8 | 0.3 | 4 | 0.2 |
| -4.5-<(-4.0) | 3 | 0.1 | 5 | 0.1 | 16 | 0.4 | 16 | 0.4 | 20 | 0.5 | 20 | 0.6 | 5 | 0.2 | 8 | 0.3 |
| -4.0-<(-3.5) | 8 | 0.2 | 7 | 0.2 | 52 | 1.3 | 42 | 1.1 | 30 | 0.8 | 26 | 0.8 | 27 | 1.0 | 21 | 0.9 |
| -3.5-<(-3.0) | 19 | 0.5 | 15 | 0.3 | 75 | 1.9 | 71 | 1.8 | 63 | 1.7 | 51 | 1.6 | 45 | 1.6 | 29 | 1.2 |
| -3.0-<(-2.5) | 26 | 0.6 | 41 | 0.9 | 184 | 4.6 | 137 | 3.6 | 131 | 3.5 | 128 | 4.1 | 93 | 3.3 | 75 | 3.1 |
| -2.5-<(-2.0) | 65 | 1.6 | 76 | 1.7 | 323 | 8.0 | 256 | 6.6 | 236 | 6.4 | 204 | 6.5 | 164 | 5.8 | 152 | 6.3 |
| -2.0-<(-1.5) | 149 | 3.6 | 203 | 4.6 | 515 | 12.8 | 464 | 12.0 | 464 | 12.5 | 377 | 12.0 | 303 | 10.8 | 260 | 10.7 |
| -1.5-<(-1.0) | 360 | 8.7 | 431 | 9.7 | 723 | 18.0 | 721 | 18.7 | 665 | 17.9 | 530 | 16.8 | 492 | 17.5 | 424 | 17.5 |
| -1.0-<(-0.5) | 722 | 17.5 | 763 | 17.2 | 771 | 19.2 | 817 | 21.2 | 776 | 20.9 | 667 | 21.2 | 636 | 22.6 | 547 | 22.5 |
| -0.5-<0.0 | 956 | 23.2 | 956 | 21.6 | 657 | 16.4 | 616 | 16.0 | 640 | 17.2 | 544 | 17.3 | 485 | 17.3 | 443 | 18.2 |
| 0.0-<0.5 | 860 | 20.8 | 983 | 22.2 | 391 | 9.7 | 375 | 9.7 | 372 | 10.0 | 297 | 9.4 | 296 | 10.5 | 264 | 10.9 |
| 0.5-<1.0 | 444 | 10.8 | 460 | 10.4 | 147 | 3.7 | 157 | 4.1 | 146 | 3.9 | 144 | 4.6 | 136 | 4.8 | 110 | 4.5 |
| 1.0-<1.5 | 236 | 5.7 | 228 | 5.1 | 54 | 1.3 | 77 | 2.0 | 66 | 1.8 | 65 | 2.1 | 46 | 1.6 | 39 | 1.6 |
| 1.5-<2.0 | 129 | 3.1 | 98 | 2.2 | 31 | 0.8 | 26 | 0.7 | 30 | 0.8 | 33 | 1.0 | 21 | 0.7 | 20 | 0.8 |
| 2.0-<2.5 | 50 | 1.2 | 48 | 1.1 | 18 | 0.4 | 13 | 0.3 | 17 | 0.5 | 9 | 0.3 | 10 | 0.4 | 9 | 0.4 |
| 2.5-<3.0 | 24 | 0.6 | 22 | 0.5 | 5 | 0.1 | 6 | 0.2 | 3 | 0.1 | 6 | 0.2 | 4 | 0.1 | 2 | 0.1 |
| 3.0-<3.5 | 15 | 0.4 | 16 | 0.4 | 1 | 0.0 | 5 | 0.1 | 4 | 0.1 | 4 | 0.1 | 3 | 0.1 | 2 | 0.1 |
| 3.5-<4.0 | 10 | 0.2 | 8 | 0.2 | 2 | 0.0 | 1 | 0.0 | 0 | 0.0 | 3 | 0.1 | 2 | 0.1 | 2 | 0.1 |
| 4.0-<4.5 | 3 | 0.1 | 3 | 0.1 | 0 | 0.0 | 2 | 0.1 | 0 | 0.0 | 3 | 0.1 | 3 | 0.1 | 2 | 0.1 |
| 4.5-<5.0 | 3 | 0.1 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 2 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| 5.0-<5.5 | 3 | 0.1 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 2 | 0.1 | 2 | 0.1 |
| 5.5-<6.0 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.1 | 1 | 0.0 |
| 6.0-<6.5 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.1 | 1 | 0.0 | 2 | 0.1 | 0 | 0.0 |
| 6.5-<7.0 | 2 | 0.0 | 1 | 0.0 | 0 | 0.0 | 2 | 0.1 | 2 | 0.1 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 7.0-<7.5 | 1 | 0.0 | 3 | 0.1 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| 7.5-<8.0 | 2 | 0.0 | 1 | 0.0 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| 8.0-<8.5 | 1 | 0.0 | 3 | 0.1 | 1 | 0.0 | 1 | 0.0 | 2 | 0.1 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| 8.5-<9.0 | 5 | 0.1 | 1 | 0.0 | 0 | 0.0 | 1 | 0.0 | 3 | 0.1 | 0 | 0.0 | 1 | 0.0 | 2 | 0.1 |
| 9.0-<9.5 | 1 | 0.0 | 8 | 0.2 | 3 | 0.1 | 4 | 0.1 | 5 | 0.1 | 3 | 0.1 | 3 | 0.1 | 2 | 0.1 |
| 9.5-<10.0 | 5 | 0.1 | 2 | 0.0 | 10 | 0.2 | 11 | 0.3 | 6 | 0.2 | 7 | 0.2 | 13 | 0.5 | 2 | 0.1 |

*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.*

| | Actual Refraction | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Phaco | | | | | | | | | | | | | | | |
| Years | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
| Dioptre (D) | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| -10.0-<(-9.5) | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 4 | 0.0 |
| -9.5-<(-9.0) | 0 | 0.0 | 7 | 0.1 | 0 | 0.0 | 1 | 0.0 | 2 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| -9.0-<(-8.5) | 0 | 0.0 | 1 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 |
| -8.5-<(-8.0) | 0 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 2 | 0.0 | 2 | 0.0 |
| -8.0-<(-7.5) | 0 | 0.0 | 3 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 2 | 0.0 | 4 | 0.0 | 1 | 0.0 |
| -7.5-<(-7.0) | 1 | 0.0 | 11 | 0.1 | 0 | 0.0 | 3 | 0.0 | 1 | 0.0 | 2 | 0.0 | 1 | 0.0 | 3 | 0.0 |
| -7.0-<(-6.5) | 0 | 0.0 | 6 | 0.0 | 3 | 0.0 | 3 | 0.0 | 2 | 0.0 | 2 | 0.0 | 2 | 0.0 | 2 | 0.0 |
| -6.5-<(-5.0) | 1 | 0.0 | 16 | 0.1 | 24 | 0.2 | 22 | 0.1 | 11 | 0.1 | 21 | 0.1 | 27 | 0.1 | 21 | 0.1 |
| -5.0-<(-4.5) | 1 | 0.0 | 15 | 0.1 | 14 | 0.1 | 13 | 0.1 | 11 | 0.1 | 13 | 0.1 | 11 | 0.0 | 8 | 0.0 |
| -4.5-<(-4.0) | 3 | 0.0 | 15 | 0.1 | 14 | 0.1 | 17 | 0.1 | 19 | 0.1 | 21 | 0.1 | 15 | 0.1 | 16 | 0.1 |
| -4.0-<(-3.5) | 5 | 0.1 | 19 | 0.2 | 44 | 0.3 | 41 | 0.3 | 35 | 0.2 | 37 | 0.2 | 31 | 0.1 | 35 | 0.1 |
| -3.5-<(-3.0) | 2 | 0.0 | 29 | 0.2 | 80 | 0.6 | 81 | 0.5 | 74 | 0.4 | 74 | 0.4 | 69 | 0.3 | 74 | 0.3 |
| -3.0-<(-2.5) | 7 | 0.1 | 58 | 0.5 | 212 | 1.6 | 190 | 1.2 | 163 | 0.9 | 164 | 0.9 | 169 | 0.8 | 172 | 0.7 |
| -2.5-<(-2.0) | 27 | 0.3 | 80 | 0.7 | 448 | 3.5 | 436 | 2.8 | 450 | 2.6 | 451 | 2.5 | 383 | 1.7 | 451 | 1.8 |
| -2.0-<(-1.5) | 88 | 1.0 | 147 | 1.2 | 1067 | 8.3 | 1067 | 6.9 | 1138 | 6.6 | 1100 | 6.1 | 1079 | 4.9 | 1187 | 4.7 |
| -1.5-<(-1.0) | 277 | 3.1 | 393 | 3.2 | 2115 | 16.4 | 2390 | 15.4 | 2701 | 15.7 | 2700 | 15.1 | 2993 | 13.5 | 3280 | 13.0 |
| -1.0-<(-0.5) | 1022 | 11.4 | 1370 | 11.3 | 3232 | 25.1 | 3870 | 25.0 | 4461 | 25.9 | 4716 | 26.3 | 5735 | 25.9 | 6776 | 26.8 |
| -0.5-<0.0 | 2602 | 29.1 | 3152 | 26.0 | 3143 | 24.4 | 3941 | 25.5 | 4570 | 26.6 | 4753 | 26.5 | 6610 | 29.8 | 7865 | 31.1 |
| 0.0-<0.5 | 2551 | 28.5 | 3568 | 29.5 | 1680 | 13.0 | 2177 | 14.1 | 2350 | 13.7 | 2562 | 14.3 | 3403 | 15.3 | 3761 | 14.9 |
| 0.5-<1.0 | 1273 | 14.2 | 1738 | 14.3 | 513 | 4.0 | 772 | 5.0 | 762 | 4.4 | 844 | 4.7 | 1081 | 4.9 | 1130 | 4.5 |
| 1.0-<1.5 | 546 | 6.1 | 780 | 6.4 | 168 | 1.3 | 265 | 1.7 | 249 | 1.4 | 277 | 1.5 | 317 | 1.4 | 320 | 1.3 |
| 1.5-<2.0 | 268 | 3.0 | 367 | 3.0 | 66 | 0.5 | 99 | 0.6 | 90 | 0.5 | 85 | 0.5 | 123 | 0.6 | 98 | 0.4 |
| 2.0-<2.5 | 117 | 1.3 | 160 | 1.3 | 21 | 0.2 | 38 | 0.2 | 42 | 0.2 | 44 | 0.2 | 44 | 0.2 | 47 | 0.2 |
| 2.5-<3.0 | 59 | 0.7 | 56 | 0.5 | 10 | 0.1 | 14 | 0.1 | 17 | 0.1 | 17 | 0.1 | 18 | 0.1 | 19 | 0.1 |
| 3.0-<3.5 | 28 | 0.3 | 32 | 0.3 | 8 | 0.1 | 10 | 0.1 | 13 | 0.1 | 11 | 0.1 | 11 | 0.0 | 9 | 0.0 |
| 3.5-<4.0 | 17 | 0.2 | 23 | 0.2 | 4 | 0.0 | 5 | 0.0 | 4 | 0.0 | 7 | 0.0 | 4 | 0.0 | 8 | 0.0 |
| 4.0-<4.5 | 12 | 0.1 | 12 | 0.1 | 3 | 0.0 | 5 | 0.0 | 2 | 0.0 | 6 | 0.0 | 11 | 0.0 | 7 | 0.0 |
| 4.5-<5.0 | 11 | 0.1 | 4 | 0.0 | 2 | 0.0 | 2 | 0.0 | 4 | 0.0 | 1 | 0.0 | 6 | 0.0 | 3 | 0.0 |
| 5.0-<5.5 | 3 | 0.0 | 1 | 0.0 | 2 | 0.0 | 4 | 0.0 | 4 | 0.0 | 1 | 0.0 | 3 | 0.0 | 2 | 0.0 |
| 5.5-<6.0 | 1 | 0.0 | 3 | 0.0 | 1 | 0.0 | 1 | 0.0 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 2 | 0.0 |
| 6.0-<6.5 | 4 | 0.0 | 2 | 0.0 | 2 | 0.0 | 3 | 0.0 | 1 | 0.0 | 2 | 0.0 | 1 | 0.0 | 2 | 0.0 |
| 6.5-<7.0 | 4 | 0.0 | 1 | 0.0 | 2 | 0.0 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 4 | 0.0 | 2 | 0.0 |
| 7.0-<7.5 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 2 | 0.0 | 2 | 0.0 | 2 | 0.0 | 4 | 0.0 | 0 | 0.0 |
| 7.5-<8.0 | 2 | 0.0 | 3 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 2 | 0.0 | 3 | 0.0 | 0 | 0.0 |
| 8.0-<8.5 | 3 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.0 | 3 | 0.0 |
| 8.5-<9.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 1 | 0.0 | 4 | 0.0 |
| 9.0-<9.5 | 0 | 0.0 | 0 | 0.0 | 2 | 0.0 | 0 | 0.0 | 6 | 0.0 | 1 | 0.0 | 2 | 0.0 | 5 | 0.0 |
| 9.5-<10.0 | 4 | 0.0 | 6 | 0.0 | 6 | 0.0 | 7 | 0.0 | 5 | 0.0 | 6 | 0.0 | 1 | 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.*

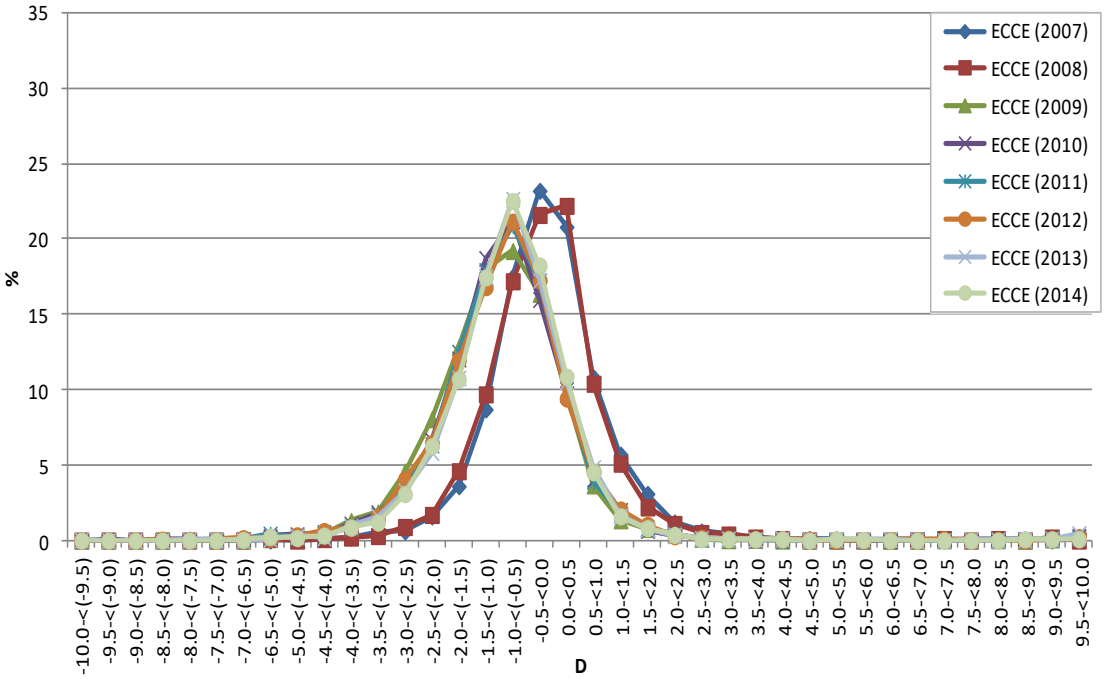



Figure 1.5.10-1: Percentage Distribution of Actual Refractive Power (ECCE), CSR 2007-2014

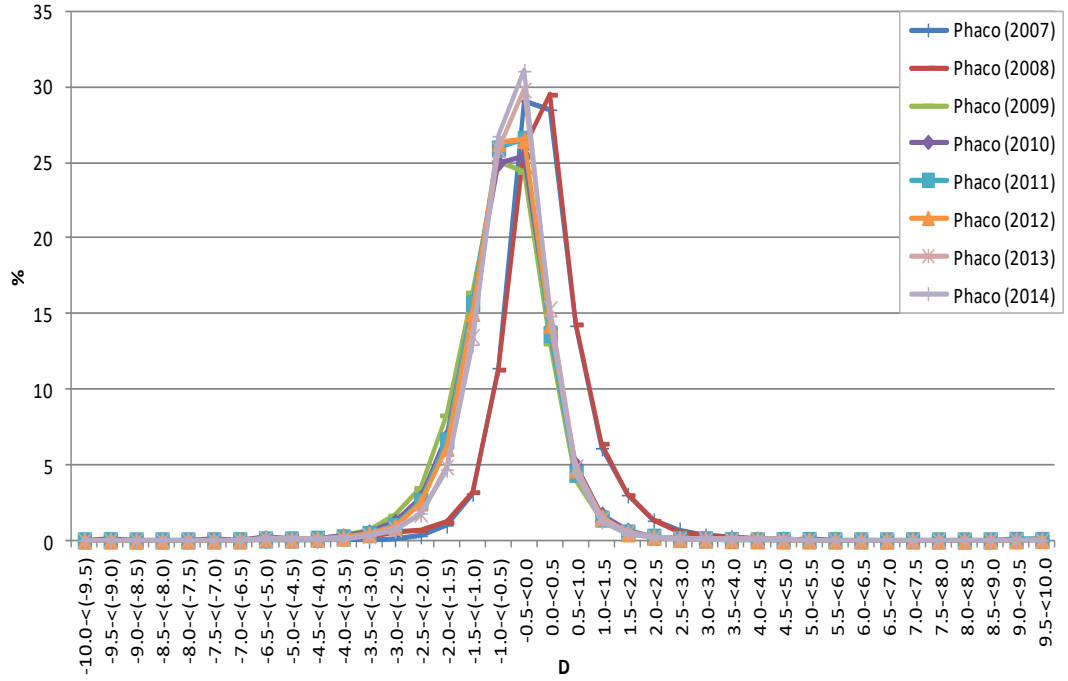



Figure 1.5.10-2: Percentage Distribution of Actual Refractive Power (Phaco), CSR 2007-2014

Table 1.5.10-3: Difference Between Target and Actual Refractive Power by Diopter in Phaco, CSR 2007-2014

| | Target Refraction | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Years** | **2007** | | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | |
| **Power (D)** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **N** | 7975 | 100.0 | 10660 | 100.0 | 14976 | 100.0 | 18938 | 100.0 | 20321 | 100.0 | 21328 | 100.0 | 24306 | 100.0 | 28256 | 100.0 |
| -5.0-<(-4.5) | 2 | 0.0 | 4 | 0.0 | 7 | 0.0 | 2 | 0.0 | 2 | 0.0 | 5 | 0.0 | 4 | 0.0 | 1 | 0.0 |
| -4.5-<(-4.0) | 1 | 0.0 | 3 | 0.0 | 5 | 0.0 | 9 | 0.0 | 2 | 0.0 | 4 | 0.0 | 3 | 0.0 | 4 | 0.0 |
| -4.0-<(-3.5) | 5 | 0.1 | 7 | 0.1 | 7 | 0.0 | 5 | 0.0 | 8 | 0.0 | 5 | 0.0 | 1 | 0.0 | 4 | 0.0 |
| -3.5-<(-3.0) | 5 | 0.1 | 6 | 0.1 | 9 | 0.1 | 12 | 0.1 | 10 | 0.0 | 4 | 0.0 | 8 | 0.0 | 3 | 0.0 |
| -3.0-<(-2.5) | 10 | 0.1 | 20 | 0.2 | 14 | 0.1 | 23 | 0.1 | 12 | 0.1 | 13 | 0.1 | 14 | 0.1 | 8 | 0.0 |
| -2.5-<(-2.0) | 18 | 0.2 | 16 | 0.2 | 19 | 0.1 | 27 | 0.1 | 19 | 0.1 | 30 | 0.1 | 30 | 0.1 | 23 | 0.1 |
| -2.0-<(-1.5) | 51 | 0.6 | 35 | 0.3 | 44 | 0.3 | 32 | 0.2 | 38 | 0.2 | 49 | 0.2 | 43 | 0.2 | 44 | 0.2 |
| -1.5-<(-1.0) | 239 | 3.0 | 288 | 2.7 | 184 | 1.2 | 195 | 1.0 | 158 | 0.8 | 164 | 0.8 | 149 | 0.6 | 180 | 0.6 |
| -1.0-<(-0.5) | 2473 | 31.0 | 4065 | 38.1 | 5602 | 37.4 | 5672 | 30.0 | 5567 | 27.4 | 5709 | 26.8 | 5031 | 20.7 | 5642 | 20.0 |
| -0.5-<0.0 | 4512 | 56.6 | 5498 | 51.6 | 8201 | 54.8 | 12144 | 64.1 | 13864 | 68.2 | 14653 | 68.7 | 18302 | 75.3 | 21641 | 76.6 |
| 0.0-<0.5 | 583 | 7.3 | 563 | 5.3 | 663 | 4.4 | 601 | 3.2 | 470 | 2.3 | 345 | 1.6 | 461 | 1.9 | 635 | 2.2 |
| 0.5-<1.0 | 45 | 0.6 | 107 | 1.0 | 129 | 0.9 | 147 | 0.8 | 143 | 0.7 | 160 | 0.8 | 144 | 0.6 | 52 | 0.2 |
| 1.0-<1.5 | 6 | 0.1 | 23 | 0.2 | 9 | 0.1 | 9 | 0.0 | 7 | 0.0 | 16 | 0.1 | 5 | 0.0 | 3 | 0.0 |
| 1.5-<2.0 | 2 | 0.0 | 7 | 0.1 | 11 | 0.1 | 7 | 0.0 | 1 | 0.0 | 43 | 0.2 | 23 | 0.1 | 2 | 0.0 |
| 2.0-<2.5 | 9 | 0.1 | 6 | 0.1 | 63 | 0.4 | 42 | 0.2 | 10 | 0.0 | 106 | 0.5 | 65 | 0.3 | 3 | 0.0 |
| 2.5-<3.0 | 1 | 0.0 | 4 | 0.0 | 2 | 0.0 | 1 | 0.0 | 2 | 0.0 | 6 | 0.0 | 10 | 0.0 | 0 | 0.0 |
| 3.0-<3.5 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 3.5-<4.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 4.0-<4.5 | 2 | 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 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5.0-<5.5 | 1 | 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.*

| | Actual Refraction | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Years** | **2007** | | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | |
| **Power (D)** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **N** | 8342 | 100.0 | 12154 | 100.0 | 12891 | 100.0 | 15485 | 100.0 | 17197 | 100.0 | 17931 | 100.0 | 22173 | 100.0 | 25325 | 100.0 |
| -5.0-<(-4.5) | 15 | 0.2 | 13 | 0.1 | 14 | 0.1 | 13 | 0.1 | 11 | 0.1 | 13 | 0.1 | 11 | 0.0 | 8 | 0.0 |
| -4.5-<(-4.0) | 30 | 0.4 | 19 | 0.2 | 14 | 0.1 | 17 | 0.1 | 19 | 0.1 | 21 | 0.1 | 15 | 0.1 | 16 | 0.1 |
| -4.0-<(-3.5) | 49 | 0.6 | 17 | 0.1 | 44 | 0.3 | 41 | 0.3 | 35 | 0.2 | 37 | 0.2 | 31 | 0.1 | 35 | 0.1 |
| -3.5-<(-3.0) | 97 | 1.2 | 20 | 0.2 | 80 | 0.6 | 81 | 0.5 | 74 | 0.4 | 74 | 0.4 | 69 | 0.3 | 74 | 0.3 |
| -3.0-<(-2.5) | 200 | 2.4 | 55 | 0.5 | 212 | 1.6 | 190 | 1.2 | 163 | 0.9 | 164 | 0.9 | 169 | 0.8 | 172 | 0.7 |
| -2.5-<(-2.0) | 405 | 4.9 | 85 | 0.7 | 448 | 3.5 | 436 | 2.8 | 450 | 2.6 | 451 | 2.5 | 383 | 1.7 | 451 | 1.8 |
| -2.0-<(-1.5) | 746 | 8.9 | 164 | 1.3 | 1067 | 8.3 | 1067 | 6.9 | 1138 | 6.6 | 1100 | 6.1 | 1079 | 4.9 | 1187 | 4.7 |
| -1.5-<(-1.0) | 1382 | 16.6 | 423 | 3.5 | 2115 | 16.4 | 2390 | 15.4 | 2701 | 15.7 | 2700 | 15.1 | 2993 | 13.5 | 3280 | 13.0 |
| -1.0-<(-0.5) | 1771 | 21.2 | 1408 | 11.6 | 3232 | 25.1 | 3870 | 25.0 | 4461 | 25.9 | 4716 | 26.3 | 5735 | 25.9 | 6776 | 26.8 |
| -0.5-<0.0 | 1884 | 22.6 | 3167 | 26.1 | 3143 | 24.4 | 3941 | 25.5 | 4570 | 26.6 | 4753 | 26.5 | 6610 | 29.8 | 7865 | 31.1 |
| 0.0-<0.5 | 1069 | 12.8 | 3534 | 29.1 | 1680 | 13.0 | 2177 | 14.1 | 2350 | 13.7 | 2562 | 14.3 | 3403 | 15.3 | 3761 | 14.9 |
| 0.5-<1.0 | 399 | 4.8 | 1740 | 14.3 | 513 | 4.0 | 772 | 5.0 | 762 | 4.4 | 844 | 4.7 | 1081 | 4.9 | 1130 | 4.5 |
| 1.0-<1.5 | 142 | 1.7 | 786 | 6.5 | 168 | 1.3 | 265 | 1.7 | 249 | 1.4 | 277 | 1.5 | 317 | 1.4 | 320 | 1.3 |
| 1.5-<2.0 | 55 | 0.7 | 365 | 3.0 | 66 | 0.5 | 99 | 0.6 | 90 | 0.5 | 85 | 0.5 | 123 | 0.6 | 98 | 0.4 |
| 2.0-<2.5 | 14 | 0.2 | 156 | 1.3 | 21 | 0.2 | 38 | 0.2 | 42 | 0.2 | 44 | 0.2 | 44 | 0.2 | 47 | 0.2 |
| 2.5-<3.0 | 15 | 0.2 | 55 | 0.5 | 10 | 0.1 | 14 | 0.1 | 17 | 0.1 | 17 | 0.1 | 18 | 0.1 | 19 | 0.1 |
| 3.0-<3.5 | 13 | 0.2 | 30 | 0.2 | 8 | 0.1 | 10 | 0.1 | 13 | 0.1 | 11 | 0.1 | 11 | 0.0 | 9 | 0.0 |
| 3.5-<4.0 | 4 | 0.0 | 22 | 0.2 | 4 | 0.0 | 5 | 0.0 | 4 | 0.0 | 7 | 0.0 | 4 | 0.0 | 8 | 0.0 |
| 4.0-<4.5 | 3 | 0.0 | 10 | 0.1 | 3 | 0.0 | 5 | 0.0 | 2 | 0.0 | 6 | 0.0 | 11 | 0.0 | 7 | 0.0 |
| 4.5-<5.0 | 4 | 0.0 | 4 | 0.0 | 2 | 0.0 | 2 | 0.0 | 4 | 0.0 | 1 | 0.0 | 6 | 0.0 | 3 | 0.0 |
| 5.0-<5.5 | 1 | 0.0 | 1 | 0.0 | 2 | 0.0 | 4 | 0.0 | 4 | 0.0 | 1 | 0.0 | 3 | 0.0 | 2 | 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 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Years** | **2007** | | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | |
| **Power (D)** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **N** | 5782 | 100 | 8803 | 100 | 10842 | 100.0 | 13653 | 100.0 | 14906 | 100.0 | 14738 | 100.0 | 17438 | 100.0 | 20484 | 100.0 |
| -5.0-<(-4.5) | 12 | 0.2 | 12 | 0.1 | 5 | 0.0 | 5 | 0.0 | 7 | 0.0 | 8 | 0.1 | 8 | 0.0 | 5 | 0.0 |
| -4.5-<(-4.0) | 14 | 0.2 | 19 | 0.2 | 8 | 0.1 | 7 | 0.1 | 10 | 0.1 | 9 | 0.1 | 12 | 0.1 | 10 | 0.0 |
| -4.0-<(-3.5) | 28 | 0.5 | 18 | 0.2 | 24 | 0.2 | 28 | 0.2 | 14 | 0.1 | 18 | 0.1 | 10 | 0.1 | 16 | 0.1 |
| -3.5-<(-3.0) | 43 | 0.7 | 51 | 0.6 | 52 | 0.5 | 37 | 0.3 | 32 | 0.2 | 38 | 0.3 | 37 | 0.2 | 35 | 0.2 |
| -3.0-<(-2.5) | 93 | 1.6 | 103 | 1.2 | 95 | 0.9 | 110 | 0.8 | 81 | 0.5 | 100 | 0.7 | 92 | 0.5 | 84 | 0.4 |
| -2.5-<(-2.0) | 176 | 3.0 | 245 | 2.8 | 243 | 2.2 | 198 | 1.5 | 192 | 1.3 | 204 | 1.4 | 184 | 1.1 | 223 | 1.1 |
| -2.0-<(-1.5) | 311 | 5.4 | 541 | 6.1 | 475 | 4.4 | 520 | 3.8 | 532 | 3.6 | 533 | 3.6 | 473 | 2.7 | 568 | 2.8 |
| -1.5-<(-1.0) | 595 | 10.3 | 1052 | 12.0 | 1149 | 10.6 | 1294 | 9.5 | 1391 | 9.3 | 1300 | 8.8 | 1366 | 7.8 | 1534 | 7.5 |
| -1.0-<(-0.5) | 994 | 17.2 | 1984 | 22.5 | 2151 | 19.8 | 2685 | 19.7 | 3081 | 20.7 | 3005 | 20.4 | 3424 | 19.6 | 3847 | 18.8 |
| -0.5-<0.0 | 1367 | 23.6 | 2278 | 25.9 | 2877 | 26.5 | 3712 | 27.2 | 4411 | 29.6 | 4269 | 29.0 | 5382 | 30.9 | 6538 | 31.9 |
| 0.0-<0.5 | 1179 | 20.4 | 1434 | 16.3 | 2246 | 20.7 | 3054 | 22.4 | 3276 | 22.0 | 3258 | 22.1 | 4129 | 23.7 | 4974 | 24.3 |
| 0.5-<1.0 | 573 | 9.9 | 558 | 6.3 | 977 | 9.0 | 1312 | 9.6 | 1250 | 8.4 | 1341 | 9.1 | 1545 | 8.9 | 1813 | 8.9 |
| 1.0-<1.5 | 225 | 3.9 | 214 | 2.4 | 310 | 2.9 | 398 | 2.9 | 399 | 2.7 | 401 | 2.7 | 484 | 2.8 | 506 | 2.5 |
| 1.5-<2.0 | 73 | 1.3 | 97 | 1.1 | 125 | 1.2 | 156 | 1.1 | 99 | 0.7 | 144 | 1.0 | 167 | 1.0 | 168 | 0.8 |
| 2.0-<2.5 | 32 | 0.6 | 46 | 0.5 | 43 | 0.4 | 56 | 0.4 | 61 | 0.4 | 45 | 0.3 | 46 | 0.3 | 58 | 0.3 |
| 2.5-<3.0 | 14 | 0.2 | 26 | 0.3 | 14 | 0.1 | 20 | 0.1 | 19 | 0.1 | 19 | 0.1 | 22 | 0.1 | 29 | 0.1 |
| 3.0-<3.5 | 13 | 0.2 | 15 | 0.2 | 5 | 0.0 | 10 | 0.1 | 12 | 0.1 | 10 | 0.1 | 6 | 0.0 | 12 | 0.1 |
| 3.5-<4.0 | 8 | 0.1 | 15 | 0.2 | 8 | 0.1 | 10 | 0.1 | 4 | 0.0 | 6 | 0.0 | 7 | 0.0 | 6 | 0.0 |
| 4.0-<4.5 | 3 | 0.0 | 12 | 0.1 | 3 | 0.0 | 4 | 0.0 | 3 | 0.0 | 2 | 0.0 | 4 | 0.0 | 6 | 0.0 |
| 4.5-<5.0 | 3 | 0.0 | 12 | 0.1 | 2 | 0.0 | 3 | 0.0 | 0 | 0.0 | 2 | 0.0 | 7 | 0.0 | 6 | 0.0 |
| 5.0-<5.5 | 9 | 0.2 | 9 | 0.1 | 1 | 0.0 | 2 | 0.0 | 1 | 0.0 | 0 | 0.0 | 2 | 0.0 | 3 | 0.0 |

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

*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.*

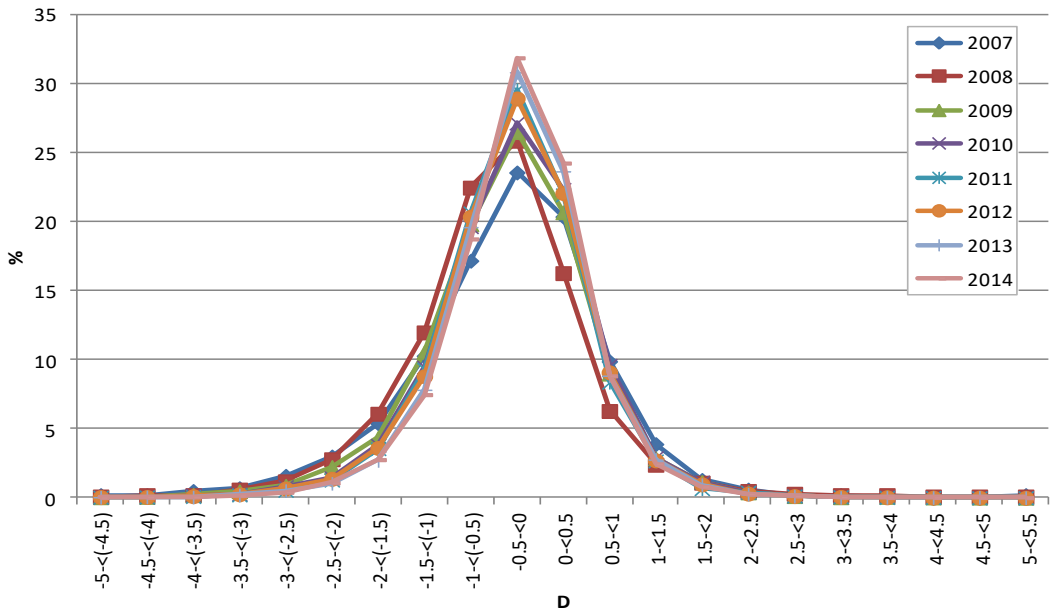



Figure 1.5.10-3: Difference in Target and Actual Refractive Power (Phaco), CSR 2007-2014

Table 1.5.10-4: Difference Between Target and Actual Refractive Power within ±1.0D by SDP in Phaco and ECCE, CSR 2014

| 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 | % | N | n | % |
| **All centre** | **23180** | **18931** | **81.7** | **20484** | **17172** | **83.8** | **2022** | **1327** | **65.6** |
| Alor Setar | 1501 | 1062 | 70.8 | 1214 | 915 | 75.4 | 243 | 124 | 51.0 |
| Ampang | 514 | 398 | 77.4 | 448 | 348 | 77.7 | 50 | 37 | 74.0 |
| Batu Pahat | 153 | 119 | 77.8 | 103 | 88 | 85.4 | 33 | 23 | 69.7 |
| Bukit Mertajam | 742 | 595 | 80.2 | 562 | 457 | 81.3 | 174 | 134 | 77.0 |
| Ipoh | 1774 | 1530 | 86.2 | 1654 | 1441 | 87.1 | 87 | 68 | 78.2 |
| Johor Bahru | 705 | 577 | 81.8 | 667 | 552 | 82.8 | 17 | 9 | 52.9 |
| Kangar | 299 | 245 | 81.9 | 253 | 214 | 84.6 | 35 | 23 | 65.7 |
| Kemaman | 14 | 9 | 64.3 | 9 | 7 | 77.8 | 5 | 2 | 40.0 |
| Keningau | 58 | 48 | 82.8 | 43 | 38 | 88.4 | 14 | 10 | 71.4 |
| Klang | 46 | 37 | 80.4 | 46 | 37 | 80.4 | 0 | 0 | 0.0 |
| Kota Bharu | 25 | 17 | 68.0 | 13 | 11 | 84.6 | 10 | 6 | 60.0 |
| Kota Kinabalu | 505 | 394 | 78.0 | 423 | 346 | 81.8 | 64 | 37 | 57.8 |
| Kuala Krai | 211 | 177 | 83.9 | 175 | 155 | 88.6 | 26 | 16 | 61.5 |
| Kuala Lumpur | 691 | 587 | 84.9 | 593 | 517 | 87.2 | 79 | 57 | 72.2 |
| Kuala Pilah | 66 | 41 | 62.1 | 58 | 37 | 63.8 | 5 | 3 | 60.0 |
| Kuala Terengganu | 656 | 567 | 86.4 | 522 | 472 | 90.4 | 108 | 78 | 72.2 |
| Kuantan | 455 | 404 | 88.8 | 349 | 318 | 91.1 | 90 | 74 | 82.2 |
| Kuching | 1359 | 1112 | 81.8 | 1326 | 1093 | 82.4 | 5 | 3 | 60.0 |
| Kulim | 215 | 186 | 86.5 | 196 | 173 | 88.3 | 12 | 7 | 58.3 |
| Melaka | 1327 | 1127 | 84.9 | 1200 | 1039 | 86.6 | 94 | 63 | 67.0 |
| Miri | 410 | 384 | 93.7 | 388 | 366 | 94.3 | 20 | 17 | 85.0 |
| Muar | 577 | 454 | 78.7 | 513 | 420 | 81.9 | 35 | 18 | 51.4 |
| Pulau Pinang | 1467 | 1202 | 81.9 | 1418 | 1172 | 82.7 | 22 | 14 | 63.6 |
| Putrajaya | 289 | 251 | 86.9 | 233 | 211 | 90.6 | 35 | 21 | 60.0 |
| Sarikei | 53 | 49 | 92.5 | 51 | 48 | 94.1 | 2 | 1 | 50.0 |
| Selayang | 518 | 441 | 85.1 | 476 | 414 | 87.0 | 19 | 12 | 63.2 |
| Serdang | 1000 | 771 | 77.1 | 860 | 681 | 79.2 | 89 | 58 | 65.2 |
| Seremban | 1089 | 860 | 79.0 | 997 | 807 | 80.9 | 69 | 38 | 55.1 |
| Sibu | 644 | 561 | 87.1 | 618 | 541 | 87.5 | 9 | 8 | 88.9 |
| Sri Manjung | 444 | 393 | 88.5 | 433 | 388 | 89.6 | 6 | 3 | 50.0 |
| Sultan Ismail | 564 | 438 | 77.7 | 460 | 368 | 80.0 | 67 | 43 | 64.2 |
| Sungai Buloh | 11 | 11 | 100.0 | 11 | 11 | 100.0 | 0 | 0 | 0.0 |
| Sungei Petani | 704 | 573 | 81.4 | 516 | 447 | 86.6 | 136 | 92 | 67.6 |
| Taiping | 1107 | 979 | 88.4 | 929 | 855 | 92.0 | 170 | 118 | 69.4 |
| Tawau | 166 | 104 | 62.7 | 119 | 78 | 65.5 | 39 | 24 | 61.5 |
| Teluk Intan | 740 | 606 | 81.9 | 681 | 568 | 83.4 | 46 | 29 | 63.0 |
| Temerloh | 774 | 605 | 78.2 | 671 | 554 | 82.6 | 72 | 35 | 48.6 |
| KK1M Terengganu | 22 | 16 | 72.7 | 15 | 13 | 86.7 | 7 | 3 | 42.9 |
| KK1M Kelantan | 62 | 47 | 75.8 | 41 | 35 | 85.4 | 18 | 11 | 61.1 |
| KK1M Sarawak | 565 | 339 | 60.0 | 558 | 334 | 59.9 | 4 | 4 | 100.0 |
| MAIWP | 658 | 615 | 93.5 | 642 | 603 | 93.9 | 6 | 4 | 66.7 |

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

*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 1.5.10-5:Post-operative Visual Acuity and Week of Outcome Notification, CSR 2014

| 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 | 805 | 4.3 | 374 | 5.6 | 632 | 7.1 | 47 | 7.0 | 146 | 11.5 |
| 2–4 weeks | 857 | 4.6 | 395 | 6.0 | 553 | 6.3 | 43 | 6.4 | 139 | 10.9 |
| 5–12 weeks | 16494 | 87.6 | 5628 | 84.8 | 7232 | 81.8 | 539 | 80.1 | 913 | 71.6 |
| 13–20 weeks | 565 | 3.0 | 200 | 3.0 | 368 | 4.2 | 41 | 6.1 | 71 | 5.6 |
| 21–30 weeks | 49 | 0.3 | 27 | 0.4 | 35 | 0.4 | 3 | 0.4 | 2 | 0.2 |
| 31–60 weeks | 20 | 0.1 | 10 | 0.2 | 14 | 0.2 | 0 | 0.0 | 1 | 0.1 |
| >60 weeks | 4 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| (Missing) | 31 | 0.2 | 4 | 0.1 | 11 | 0.1 | 0 | 0.0 | 3 | 0.2 |
| **Total** | **18825** | | **6638** | | **8846** | | **673** | | **1275** | |

**Missing of unaided VA = 4275 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 | 379 | 2.0 | 28 | 0.4 | 33 | 0.4 | 4 | 0.6 | 33 | 2.6 |
| 2–4 weeks | 1327 | 7.0 | 85 | 1.3 | 135 | 1.5 | 22 | 3.3 | 42 | 3.3 |
| 5–12 weeks | 26393 | 140.2 | 1299 | 19.6 | 1702 | 19.2 | 232 | 34.5 | 435 | 34.1 |
| 13–20 weeks | 1010 | 5.4 | 54 | 0.8 | 95 | 1.1 | 8 | 1.2 | 26 | 2.0 |
| 21–30 weeks | 94 | 0.5 | 5 | 0.1 | 10 | 0.1 | 1 | 0.1 | 0 | 0.0 |
| 31–60 weeks | 37 | 0.2 | 2 | 0.0 | 3 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| >60 weeks | 5 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| (Missing) | 26 | 0.1 | 2 | 0.0 | 2 | 0.0 | 0 | 0.0 | 2 | 0.2 |
| **Total** | **29271** | | **1475** | | **1980** | | **267** | | **539** | |

**Missing of refracted VA = 7000 cases*

# CHAPTER 2

# KLINIK KATARAK 1MALAYSIA 2014

**Contributing Editors**

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# CHAPTER 2: KLINIK KATARAK 1MALAYSIA (MOBILE AND TRANSIT)

Klinik Katarak 1Malaysia (KK1M) is the outreach arm of the MOH cataract surgical services. The services include KK1M mobile, transit and static. KK1M mobile and transit are catagorised under each state and named after the hospital where the surgery is performed. KK1M Static is specifically Pusat Perubatan Katarak Majlis Agama Islam Wilayah Persekutuan-Hospital Selayang (PPKM-HS) (refer to report below).

## 2.1 Stock and Flow

The number of SDP varies depending on location and period of service. In general, the operational KK1M mobile are KK1M Sarawak and KK1M Eastern Zone (consists of KK1M Kelantan, KK1M Terengganu and KK1M Pahang). KK1M transit which is not using the bus, can be organised in any hospital throughout the country

### 2.1.1 Stock and Flow

2.1.1-1: Stock and Flow, CSR 2013-2014

| **Year** | **2013** | | **2014** | |
|---|---|---|---|---|
| No. of SDP | 2 | | 4 | |
| Total no. of cataract surgery registered to CSR | 140 | | 1055 | |
| | **n** | **%** | **n** | **%** |
| Cataract surgery with visual outcome records | 98 | 70.0 | 863 | 81.8 |

## 2.2 Characteristics of Patients

### 2.2.2 Demography

2.2.2-1: Age Distribution, CSR 2013-2014

The mean age for patients presenting for cataract surgery in KK1M was older than those presenting in a hospital setting.

| **Year** | **2013** | **2014** |
|---|---|---|
| Total number of cataract surgery | 140 | 1055 |
| **Age** | | |
| Mean (years) | 67.4 | 68.6 |
| Median (years) | 69 | 69 |
| Minimum (years) | 47 | 34 |
| Maximum (years) | 89 | 95 |

| % Distribution | | | | |
|---|---|---|---|---|
| **Age group, years** | **n** | **%** | **n** | **%** |
| 0-4 | 0 | 0.0 | 0 | 0.0 |
| 5-9 | 0 | 0.0 | 0 | 0.0 |
| 10-14 | 0 | 0.0 | 0 | 0.0 |
| 15-19 | 0 | 0.0 | 0 | 0.0 |
| 20-24 | 0 | 0.0 | 0 | 0.0 |
| 25-29 | 0 | 0.0 | 0 | 0.0 |
| 30-34 | 0 | 0.0 | 1 | 0.1 |
| 35-39 | 0 | 0.0 | 1 | 0.1 |
| 40-44 | 0 | 0.0 | 10 | 1.0 |
| 45-49 | 5 | 3.6 | 19 | 1.8 |
| 50-54 | 10 | 7.1 | 31 | 2.9 |
| 55-59 | 10 | 7.1 | 92 | 8.7 |
| 60-64 | 22 | 15.7 | 164 | 15.6 |
| 65-69 | 28 | 20.0 | 241 | 22.8 |
| 70-74 | 35 | 25.0 | 217 | 20.6 |
| 75-79 | 22 | 15.7 | 159 | 15.1 |
| ≥80 | 8 | 5.7 | 120 | 11.4 |
| Missing | 0 | 0 | 0 | 0 |
| **Gender** | | | | |
| Male | 59 | 42.1 | 495 | 46.9 |
| Female | 81 | 57.9 | 560 | 53.1 |
| Missing | 0 | 0 | 0 | 0 |

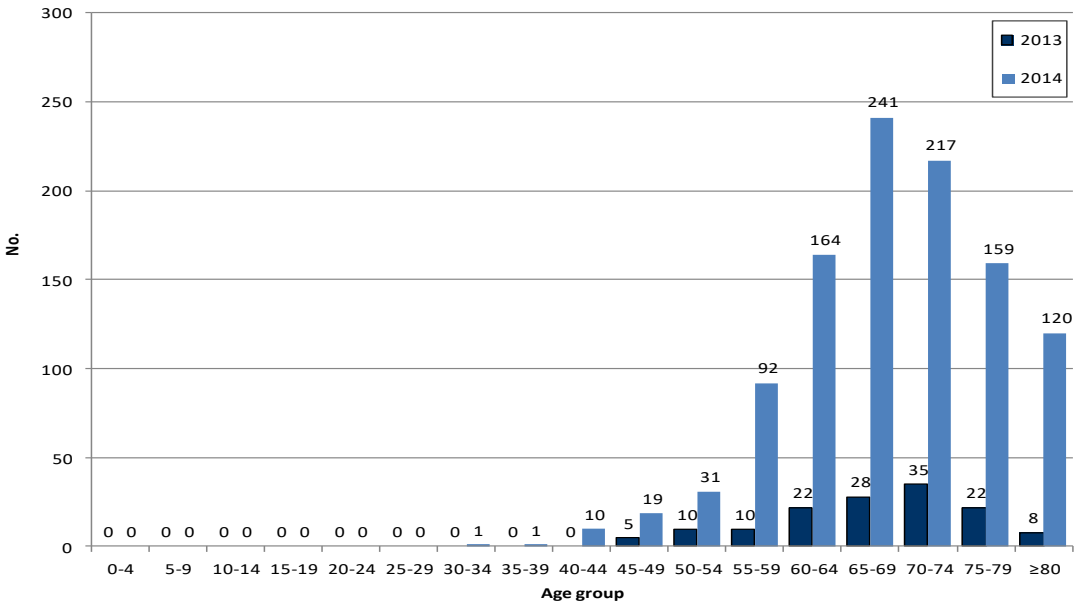



Figure 2.2.2 1: Age Distribution, CSR 2013-2014

2.2.1 Systemic Co-Morbidity

Table 2.2.1-1: Distribution of Systemic Co-morbidity, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 140 | | 1055 | |
| Percentage of patients with any systemic co-morbidity | 65.7 | | 57.3 | |
| **Percentage of patients with specific systemic co-morbidity** | | | | |
| | **n** | **%** | **n** | **%** |
| 1. Hypertension | 72 | 51.4 | 500 | 47.4 |
| 2. Diabetes Mellitus | 45 | 32.1 | 259 | 24.5 |
| 3. Ischaemic Heart Disease | 2 | 1.4 | 11 | 1.0 |
| 4. Renal Failure | 0 | 0.0 | 6 | 0.6 |
| 5. Cerebrovascular accident | 1 | 0.7 | 3 | 0.3 |
| 6. COAD/Asthma | 2 | 1.4 | 24 | 2.3 |
| 7. Others | 12 | 8.6 | 55 | 5.2 |

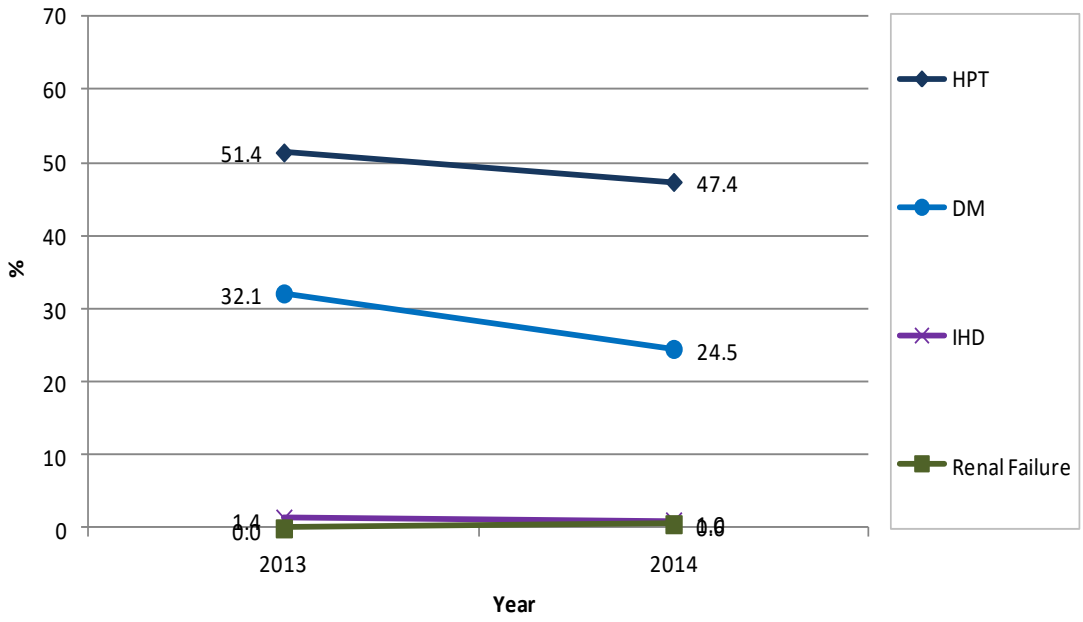



Figure 2.2.1-1: Percentage of Patients with Specific Systemic Co-morbidity, CSR 2013-2014

### 2.2.2 Causes of Cataract

Table 2.2.2-1: Causes of Cataract, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 140 | | 1055 | |
| | n | % | n | % |
| Primary cataract | 139 | 99.3 | 1043 | 98.9 |
| Secondary cataract | 1 | 0.7 | 3 | 0.3 |
| Missing value | 0 | 0.0 | 9 | 0.9 |
| **Primary Cataract (N)** | **139** | | **1043** | |
| | n | % | n | % |
| Senile/age related | 136 | 97.8 | 1039 | 99.6 |
| Congenital | 0 | 0.0 | 0 | 0.0 |
| Development | 0 | 0.0 | 0 | 0.0 |
| Others | 3 | 2.2 | 4 | 0.4 |
| **Secondary Cataract (N)** | **1** | | **3** | |
| | n | % | n | % |
| Trauma | 1 | 100.0 | 3 | 100.0 |
| Drug induced | 0 | 0.0 | 0 | 0.0 |
| Surgery induced | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 |

### 2.2.3 First of Second Eye Surgery

The percentage of patients presented for the second eye surgeries is 19.4% (as compared to total MOH 35.2% in 2014). This is expected as KK1M is operational in rural setting

Table 2.2.3-1: First or Fellow Eye Surgery, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 140 | | 1055 | |
| | n | % | n | % |
| First eye surgery | 132 | 94.3 | 850 | 80.6 |
| Fellow eye surgery | 8 | 5.7 | 205 | 19.4 |
| Missing | 0 | 0.0 | 0 | 0.0 |
| Patients who had second surgery in the same year | 2 | 1.4 | 58 | 5.5 |
| **Period of time between first and fellow eye surgery (months)** | | | | |
| N | 8 | | 205 | |
| Mean | 36.7 | | 75.9 | |
| SD | 21.8 | | 68.6 | |
| Median | 43.0 | | 50.1 | |
| Patients who had cataract surgery before | 620 | | 205 | |
| | n | % | n | % |
| Eyes with intra-operative complications during surgery in the first eye | 0 | 0.0 | 2 | 1.0 |

## 2.2.4 Past Ocular Surgery of the Operated Eye

Table 2.2.4-1: Past Ocular Surgery of the Operated Eye, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No. of patients | 104 | | 1055 | |
| No. of eyes with past ocular surgery record (N) | 129 | | 1042 | |
| | n | % | n | % |
| Patients with no past ocular surgery | 129 | 100.0 | 1037 | 99.5 |
| Vitreoretinal surgery | 0 | 0.0 | 1 | 0.1 |
| Pterygium excision | 0 | 0.0 | 3 | 0.3 |
| Filtering surgery | 0 | 0.0 | 0 | 0.0 |
| Penetrating keratoplasty | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.1 |

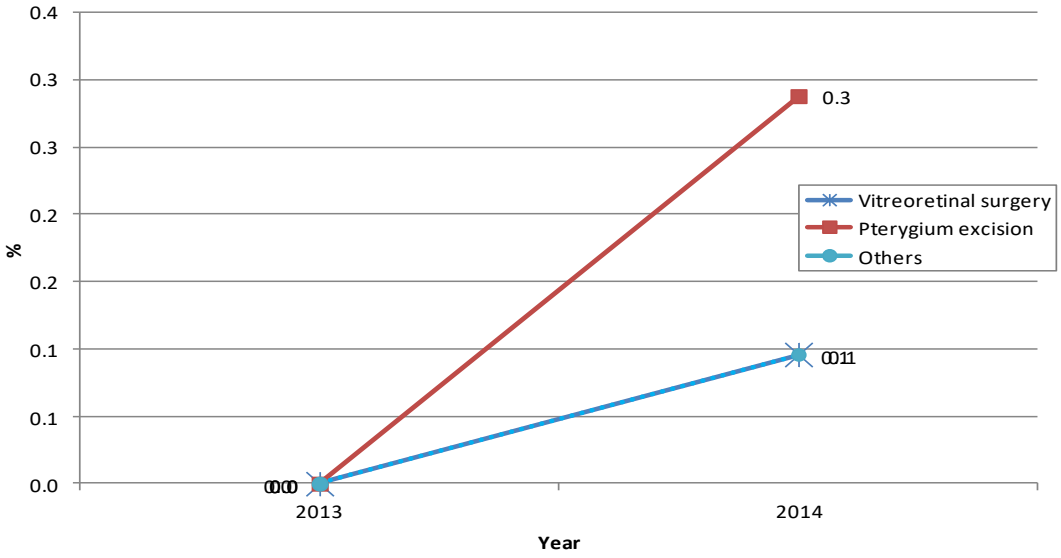



Figure 2.2.4-1:Distribition of Past Ocular Surgery of the Operated Eye, CSR 2013-2014

2.2.5 Pre-existing Ocular Co-morbidity

Table 2.2.5-1:Distribution of Pre-existing Ocular Co-morbidity, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 140 | | 1055 | |
| | **n** | **%** | **n** | **%** |
| Patients with any ocular co-morbidity | 47 | 33.6 | 256 | 24.3 |
| Patients with specific ocular co-morbidity | | | | |
| **Anterior segment** | | | | |
| 1. Glaucoma | 2 | 1.4 | 9 | 0.9 |
| 2. Pterygium involving the cornea | 4 | 2.9 | 17 | 1.6 |
| 3. Pseudoexfoliation | 1 | 0.7 | 3 | 0.3 |
| 4. Corneal opacity | 0 | 0.0 | 2 | 0.2 |
| 5. Chronic uveitis | 0 | 0.0 | 0 | 0.0 |
| **Len related complication** | | | | |
| 1. Phacomorphic | 0 | 0.0 | 0 | 0.0 |
| 2. Phacolytic | 0 | 0.0 | 0 | 0.0 |
| 3. Subluxated/Disclosed | 0 | 0.0 | 0 | 0.0 |
| **Posterior segment** | | | | |
| 1. Diabetic Retinopathy: Non Proliferative | 1 | 0.7 | 9 | 0.9 |
| 2. Diabetic Retinopathy: Proliferative | 0 | 0.0 | 0 | 0.0 |
| 3. Diabetic Retinopathy: CSME* | 0 | 0.0 | 1 | 0.1 |
| 4. Diabetic Retinopathy: Vitreous haemorrhage | 0 | 0.0 | 0 | 0.0 |
| 5. ARMD | 3 | 2.1 | 4 | 0.4 |
| 6. Other macular disease (includes hole or scar) | 0 | 0.0 | 2 | 0.2 |
| 7. Optic nerve disease, any type | 0 | 0.0 | 0 | 0.0 |
| 8. Retinal detachment | 0 | 0.0 | 0 | 0.0 |
| 9. Cannot be assessed | 34 | 24.3 | 204 | 19.3 |
| **Miscellaneous** | | | | |
| 1. Amblyopia | 0 | 0.0 | 1 | 0.1 |
| 2. Significant previous eye trauma | 0 | 0.0 | 1 | 0.1 |
| 3. Pre-existing non glaucoma field defect | 0 | 0.0 | 0 | 0.0 |
| 4. Others | 8 | 5.7 | 11 | 1.0 |

*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*

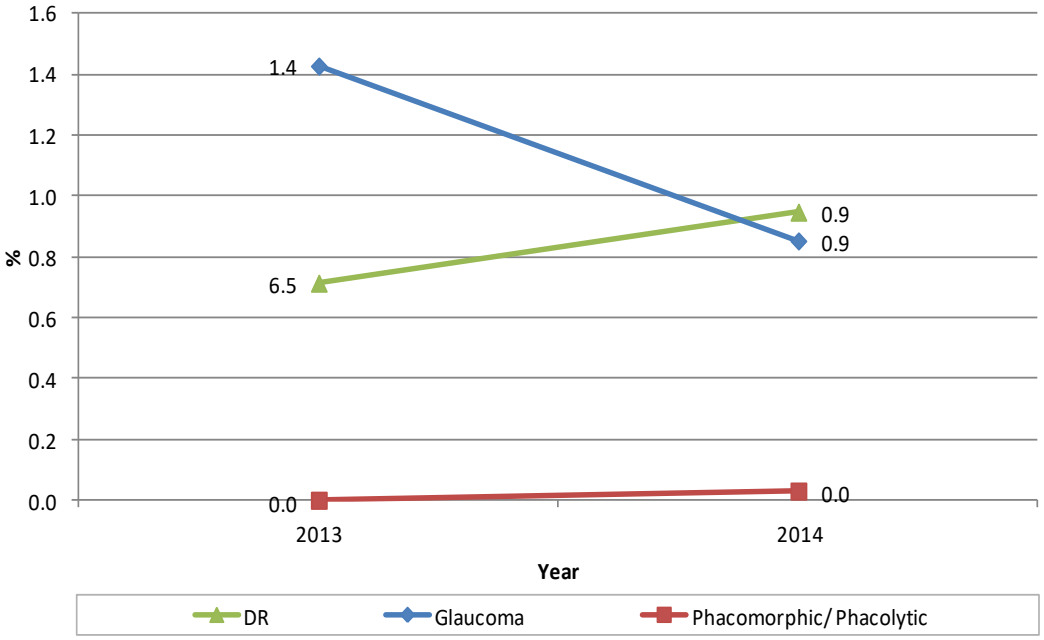



Figure 2.2.5-1:Distribution of Eyes with Specific Ocular Co-morbidity, CSR 2013-2014

## 2.2.6 Pre-operative Vision

Most patients presented with blindness, vision <3/60 (59.2% in 2014) as compared to total MOH (43.2% at same level of vision)

Table 2.2.6-1:Distribution of Pre-Operative Vision, CSR 2013-2014

| Year | | 2013 | | 2014 | |
|---|---|---|---|---|---|
| No. of patients (N) | | 140 | | 1055 | |
| | | n | % | n | % |
| Patients with unaided VA | | 136 | 97.1 | 1048 | 99.3 |
| Patients with refracted VA | | 29 | 20.7 | 56 | 5.3 |
| Patients with no refraction | | 108 | 77.1 | 992 | 94.0 |
| 6/12 and better | Unaided | 3 | 2.2 | 16 | 1.5 |
| | Refracted | 1 | 3.4 | 6 | 10.7 |
| <6/12 - 6/18 | Unaided | 1 | 0.7 | 42 | 4.0 |
| | Refracted | 5 | 17.2 | 12 | 21.4 |
| <6/18 - 6/60 | Unaided | 46 | 33.8 | 325 | 31.0 |
| | Refracted | 13 | 44.8 | 16 | 28.6 |
| <6/60 - 3/60 | Unaided | 5 | 3.7 | 45 | 4.3 |
| | Refracted | 3 | 10.3 | 1 | 1.8 |
| <3/60 | Unaided | 81 | 59.6 | 620 | 59.2 |
| | Refracted | 7 | 24.1 | 21 | 37.5 |
| Unaided VA for patient with no refraction | | | | | |
| n | | 108 | | 992 | |
| 6/12 and better | | 2 | 1.9 | 14 | 1.4 |
| <6/12 - 6/18 | | 0 | 0.0 | 35 | 3.5 |
| <6/18 - 6/60 | | 30 | 27.8 | 303 | 30.5 |
| <6/60 - 3/60 | | 3 | 2.8 | 44 | 4.4 |
| <3/60 | | 73 | 67.6 | 596 | 60.1 |

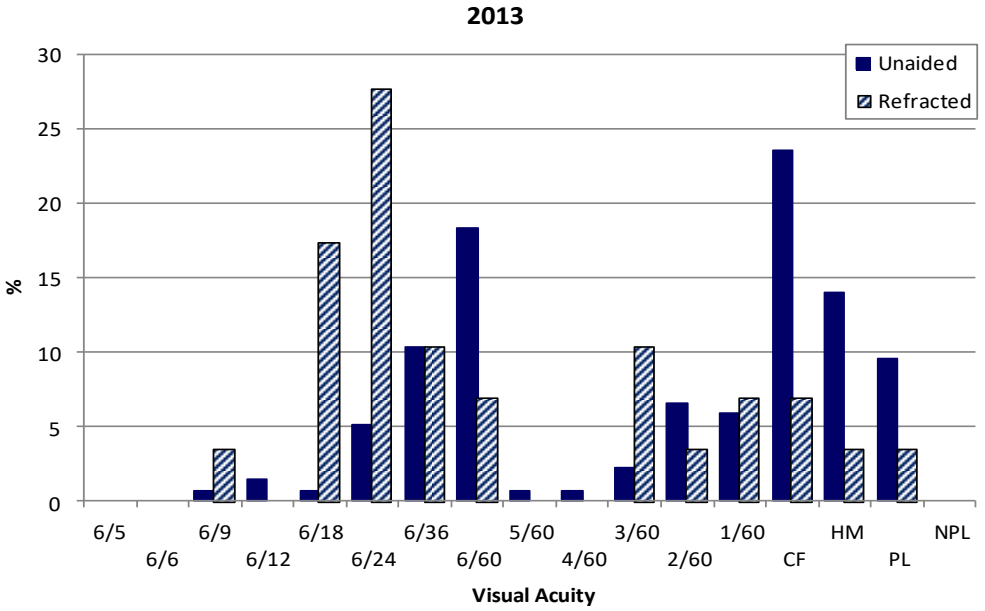



Figure 2.2.6-1:Distribution of Pre-Operative Vision (Unaided/presenting and refracted), CSR 2013

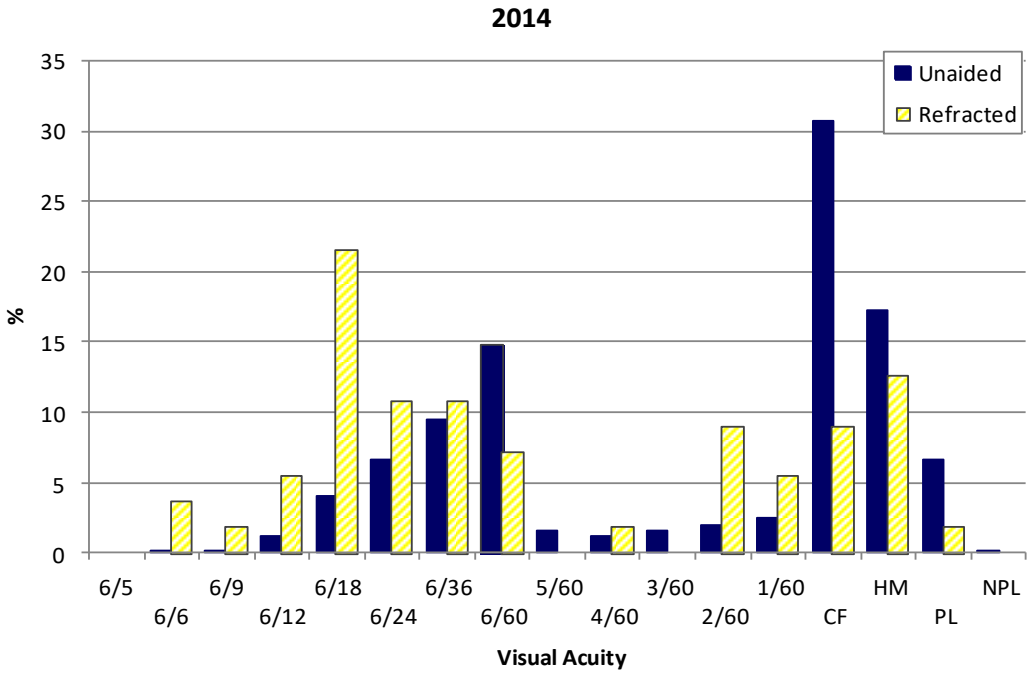



Figure 2.2.6-2:Distribution of Pre-Operative Vision (Unaided/presenting and refracted), CSR 2014

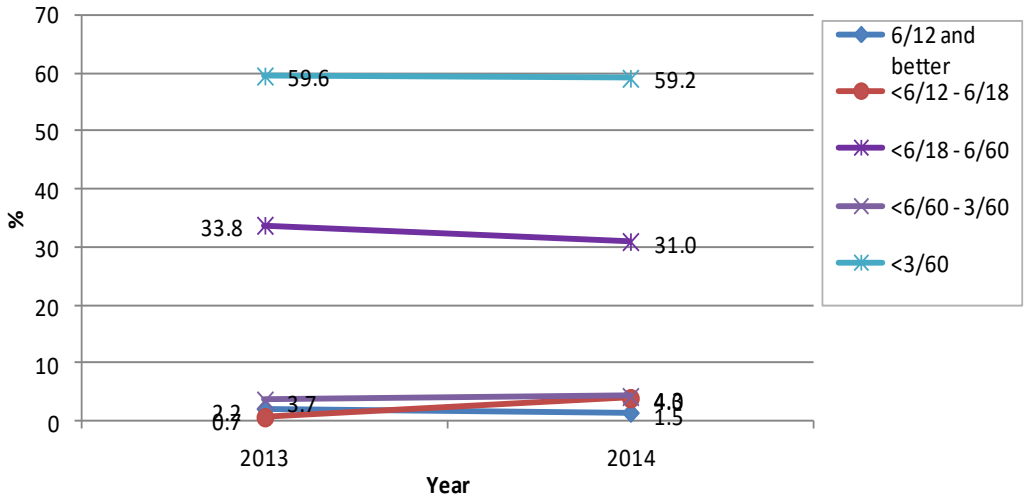



Figure 2.2.6-3:Distribution of Pre-Operative Vision (Unaided/presenting), CSR 2013-2014

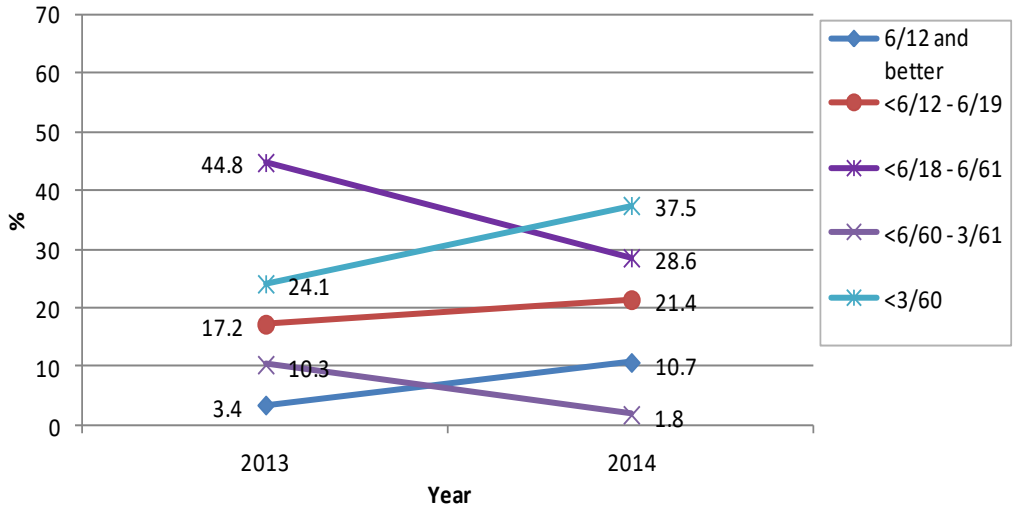



Figure 2.2.6-4:Distribution of Pre-Operative Vision (Refracted), CSR 2013-2014

## 2.2.7 Target Refractive Power

Table 2.2.7-1:Distribution of Target Refractive Power, CSR 2013-2014

| Year | 2013 | 2014 |
|---|---|---|
| Operated eye ( N) | 139 | 894 |
| Mean | -0.3 | -0.3 |
| SD | 0.2 | 0.2 |
| Median | -0.3 | -0.2 |
| Minimum | -0.8 | -1.6 |
| Maximum | 0.0 | 0.5 |

Table 2.2.7-2:Distribution of Target Refractive Power, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| Target refractive power (Dioptres) | Operated eye N=139 | | Operated eye N=894 | |
| | **n** | **%** | **n** | **%** |
| -10-<(-9.5) | 0 | 0 | 0 | 0 |
| -9.5-<(-9) | 0 | 0 | 0 | 0 |
| -9-<(-8.5) | 0 | 0 | 0 | 0 |
| -8.5-<(-8) | 0 | 0 | 0 | 0 |
| -8-<(-7.5) | 0 | 0 | 0 | 0 |
| -7.5-<(-7) | 0 | 0 | 0 | 0 |
| -7-<(-6.5) | 0 | 0 | 0 | 0 |
| -6.5-<(-5) | 0 | 0.0 | 0 | 0 |
| -5-<(-4.5) | 0 | 0 | 0 | 0 |
| -4.5-<(-4) | 0 | 0 | 0 | 0 |
| -4-<(-3.5) | 0 | 0 | 0 | 0 |
| -3.5-<(-3) | 0 | 0 | 0 | 0 |
| -3-<(-2.5) | 0 | 0 | 0 | 0 |
| -2.5-<(-2) | 0 | 0 | 0 | 0 |
| -2-<(-1.5) | 0 | 0.0 | 1 | 0.1 |
| -1.5-<(-1) | 0 | 0.0 | 0 | 0.0 |
| -1-<(-0.5) | 18 | 13.0 | 67 | 7.5 |
| -0.5-<0 | 120 | 86.3 | 822 | 92.0 |
| 0-<0.5 | 1 | 0.7 | 3 | 0.3 |
| 0.5-<1 | 0 | 0 | 1 | 0.1 |
| 1-<1.5 | 0 | 0 | 0 | 0 |
| 1.5-<2 | 0 | 0 | 0 | 0 |
| 2-<2.5 | 0 | 0 | 0 | 0 |
| 2.5-<3 | 0 | 0 | 0 | 0 |
| 3-<3.5 | 0 | 0 | 0 | 0 |
| 3.5-<4 | 0 | 0 | 0 | 0 |
| 4-<4.5 | 0 | 0 | 0 | 0 |
| 4.5-<5 | 0 | 0 | 0 | 0 |
| 5-<5.5 | 0 | 0 | 0 | 0 |
| 5.5-<6 | 0 | 0 | 0 | 0 |
| 6-<6.5 | 0 | 0 | 0 | 0 |
| 6.5-<7 | 0 | 0 | 0 | 0 |
| 7-<7.5 | 0 | 0 | 0 | 0 |
| 7.5-<8 | 0 | 0 | 0 | 0 |
| 8-<8.5 | 0 | 0 | 0 | 0 |
| 8.5-<9 | 0 | 0 | 0 | 0 |
| 9-<9.5 | 0 | 0 | 0 | 0 |
| 9.5-10 | 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 2013-2014

| State | 2013 | 2014 |
|---|---|---|
| Pahang | 64 | - |
| Kelantan | - | 186 |
| Terengganu | - | 38 |
| Sarawak | 76 | 831 |

### 2.3.2 Surgeon Status

Table 2.3.2-1:Surgeon Status, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No. of patients (N) | 140 | | 1055 | |
| | **n** | **%** | **n** | **%** |
| Specialist | 135 | 96.43 | 1016 | 96.3 |
| Gazetting Specialist | 5 | 3.57 | 35 | 3.32 |
| Medical Officer | 0 | 0 | 4 | 0.38 |
| Missing/NA | 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 2013-2014

| Year | 2013* | | 2014* | |
|---|---|---|---|---|
| | **Median** | **(25th percentile-75th percentile)** | **Median** | **(25th percentile-75th percentile)** |
| All eyes | 25 | (19-35) | 20 | (17-30) |
| Phaco | 22 | (18-30) | 20 | (16-25) |
| ECCE | 55 | (42-70) | 35 | (30-47) |
| Phaco → ECCE | 50 | (38-52) | 41 | (35-58) |
| ICCE | 50 | - | 32 | - |
| Lens Aspiration | - | - | - | - |

*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 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| Number of SDPs | 2 | | 4 | |
| Total number of cataract surgery registered to CSR | 140 | | 1055 | |
| Number of surgery excluding children and combined surgery | 137 | | 1031 | |
| | **n** | **%** | **n** | **%** |
| Number and % of day care surgery excluding children and combined surgery | 76 | 55.5 | 1003 | 97.3 |

### 2.3.5 Distribution of Types of Cataract Surgery

Table 2.3.5-1Distribution of Types of Cataract Surgery, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 140 | | 1055 | |
| | **n** | **%** | **n** | **%** |
| Phacoemulsification | 121 | 86.4 | 934 | 88.5 |
| ECCE | 12 | 8.6 | 100 | 9.5 |
| Lens Aspiration | 0 | 0.0 | 0 | 0.0 |
| Phaco converted to ECCE | 6 | 4.3 | 18 | 1.7 |
| ICCE | 1 | 0.7 | 1 | 0.1 |

Table 2.3.5-2:Distribution of Types of Cataract Surgery by SDP, CSR 2013-2014

| **Type of Cataract Surgery** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2013** | All Surgeries | | Phaco | | ECCE | | Lens Aspiration | | Phaco Converted to ECCE | | ICCE | |
| | **N** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 140 | 100.0 | 121 | 86.4 | 12 | 8.6 | 0 | 0.0 | 6 | 4.3 | 1 | 0.7 |
| KK1M Pahang | 64 | 100.0 | 47 | 73.4 | 11 | 17.2 | 0 | 0.0 | 5 | 7.8 | 1 | 1.6 |
| KK1M Sarawak | 76 | 100.0 | 74 | 97.4 | 1 | 1.3 | 0 | 0.0 | 1 | 1.3 | 0 | 0.0 |

| **Type of Cataract Surgery** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2014** | All Surgeries | | Phaco | | ECCE | | Lens Aspiration | | Phaco Converted to ECCE | | ICCE | |
| | **N** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **All Centres** | 1055 | 100.0 | 934 | 88.5 | 100 | 9.5 | 0 | 0.0 | 18 | 1.7 | 1 | 0.1 |
| KK1M Terengganu | 38 | 100.0 | 28 | 84.2 | 10 | 15.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| KK1M Kelantan | 186 | 100.0 | 94 | 50.5 | 82 | 44.1 | 0 | 0.0 | 9 | 4.8 | 0 | 0.0 |
| KK1M Sarawak | 831 | 100.0 | 812 | 97.2 | 8 | 1.4 | 0 | 0.0 | 9 | 1.1 | 1 | 0.1 |

Table 2.3.5-3:Distribution of Phacoemulsification by SDP, CSR 2013-2014

| Years | 2013 | | 2014 | |
|---|---|---|---|---|
| | n | % | n | % |
| **All Centres** | 121 | 86.4 | 934 | 94.2 |
| KK1M Pahang | 47 | 73.4 | - | - |
| KK1M Terengganu | - | - | 28 | 84.2 |
| KK1M Kelantan | - | - | 94 | 50.5 |
| KK1M Sarawak | 74 | 97.4 | 812 | 97.2 |

Table 2.3.5-4:Distribution of ECCE by SDP, CSR 2013-2014

| Years | 2013 | | 2014 | |
|---|---|---|---|---|
| | n | % | n | % |
| **All Centres** | 12 | 8.6 | 100 | 3.6 |
| KK1M Pahang | 11 | 17.2 | - | - |
| KK1M Terengganu | - | - | 10 | 15.8 |
| KK1M Kelantan | - | - | 82 | 44.1 |
| KK1M Sarawak | 1 | 1.3 | 8 | 1.4 |

## 2.3.6 Anaesthesia in Cataract Surgery

Table 2.3.6-1:Types of Anaesthesia, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 140 | | 1055 | |
| | n | % | n | % |
| General Anesthesia | 0 | 0.0 | 4 | 0.4 |
| Local Anesthesia | 139 | 99.3 | 1042 | 98.8 |
| **Type of local anasthesia** | | | | |
| Subtenon | 52 | 37.4 | 153 | 14.7 |
| Topical | 90 | 64.7 | 879 | 84.4 |
| Peribulbar | 0 | 0.0 | 0 | 0.0 |
| Retrobulbar | 3 | 2.2 | 0 | 0.0 |
| Intracameral | 3 | 2.2 | 5 | 0.5 |
| Subconjunctival | 0 | 0.0 | 2 | 0.2 |
| Facial block | 0 | 0.0 | 0 | 0.0 |
| Others | NA | NA | NA | NA |
| Combined local anaesthesia | 13 | 9.4 | 6 | 0.6 |
| **Types of sedation for patients under local anaesthesia** | | | | |
| No sedation | 39 | 28.1 | 582 | 55.9 |
| Oral sedation alone | 9 | 6.5 | 0 | 0.0 |
| Intravenous alone | 1 | 0.7 | 0 | 0.0 |
| Intravenous plus oral | 0 | 0.0 | 0 | 0.0 |
| Intramuscular alone | 17 | 12.2 | 0 | 0.0 |

Table 2.3.6-2:Types of Anaesthesia in Patients 50 years and above, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 135 | | 1024 | |
| | **n** | **%** | **n** | **%** |
| General Anesthesia | 0 | 0.0 | 4 | 0.4 |
| Local Anesthesia | 134 | 99.3 | 1011 | 98.7 |
| **Type of local anasthesia** | | | | |
| Subtenon | 49 | 36.6 | 148 | 14.6 |
| Topical | 89 | 66.4 | 855 | 84.6 |
| Peribulbar | 0 | 0.0 | 0 | 0.0 |
| Retrobulbar | 2 | 1.5 | 0 | 0.0 |
| Intracameral | 3 | 2.2 | 5 | 0.5 |
| Subconjunctival | 0 | 0.0 | 2 | 0.2 |
| Facial block | 0 | 0.0 | 0 | 0.0 |
| Others | NA | NA | NA | NA |
| Combined local anaesthesia | 13 | 9.7 | 6 | 0.6 |
| **Types of sedation for patients under local anaesthesia** | | | | |
| No sedation | 38 | 28.4 | 566 | 56.0 |
| Oral sedation alone | 9 | 6.7 | 0 | 0.0 |
| Intravenous alone | 1 | 0.7 | 0 | 0.0 |
| Intravenous plus oral | 0 | 0.0 | 0 | 0.0 |
| Intramuscular alone | 16 | 11.9 | 0 | 0.0 |

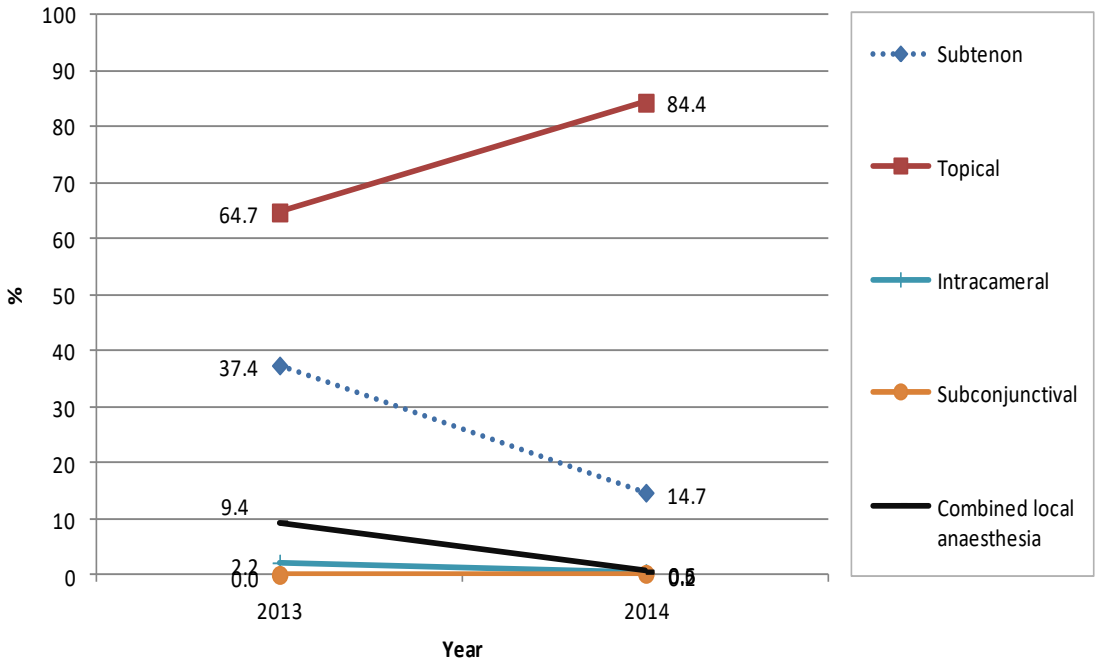



Figure 2.3.6-1:Types of Anaesthesia, CSR 2013-2014

## 2.3.7 Intraocular Lens Implantation

Table 2.3.7-1:Intraocular Lens Implantation, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 140 | | 1055 | |
| | **n** | **%** | **n** | **%** |
| With IOL | 139 | 99.3 | 1026 | 97.3 |
| Without IOL | 1 | 0.7 | 29 | 2.7 |
| Not Available | 0 | 0.0 | 0 | 0.0 |
| **IOL Placement** | | | | |
| No of IOL | 139 | | 1026 | |
| PCIOL | 131 | 94.2 | 974 | 94.9 |
| ACIOL | 4 | 2.9 | 4 | 0.4 |
| Scleral Fixated IOL | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 3 | 0.3 |
| Not Available /missing | 4 | 2.9 | 45 | 4.4 |
| **Materials of IOL** | | | | |
| No of IOL | 139 | | 1026 | |
| 1. Acrylic | 123 | 88.5 | 987 | 96.2 |
| 2. PMMA | 16 | 11.5 | 23 | 2.2 |
| 3. Silicone | 0 | 0.0 | 1 | 0.1 |
| 4. Others | 0 | 0.0 | 0 | 0.0 |
| Not Available/ missing | 0 | 0.0 | 15 | 1.5 |
| **Types of IOL** | | | | |
| No of IOL | 139 | | 1026 | |
| 1. Foldable | 121 | 87.1 | 1008 | 98.2 |
| 2. Non-foldable | 18 | 12.9 | 14 | 1.4 |
| Not Available/ missing | 0 | 0.0 | 4 | 0.4 |

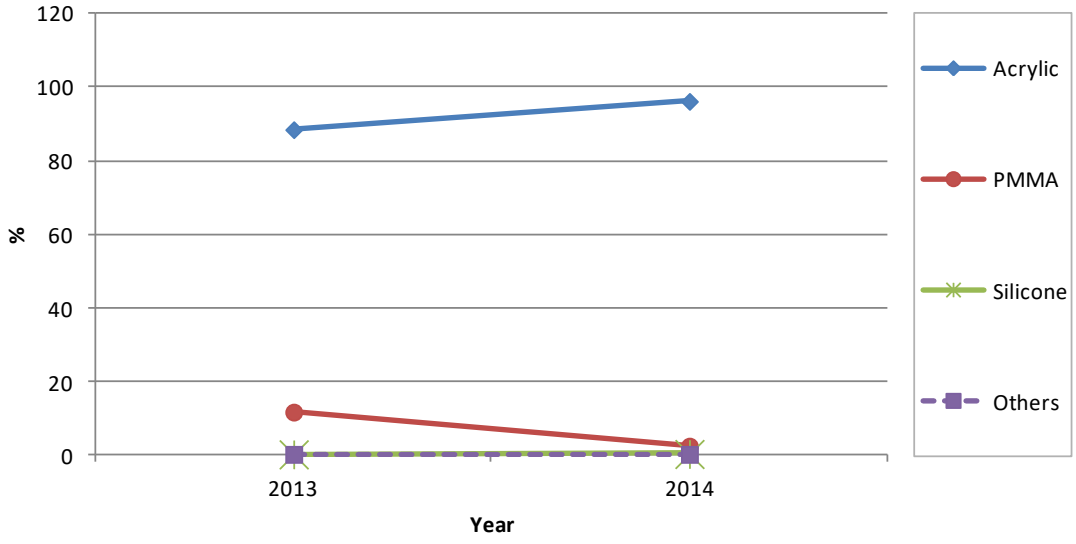



Figure 2.3.7-1:Intraocular Lens Implantation, CSR 2013-2014

Table 2.3.7-2:Distribution of IOL Placement, CSR 2013-2014

| Cataract Surgery With IOL | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | | | | | | | 2014 | | | | | | |
| | | Posterior Chamber IOL | | Anterior Chamber IOL | | Scleral Fixated IOL | | | Posterior Chamber IOL | | Anterior Chamber IOL | | Scleral Fixated IOL | |
| | **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 |
| KK1M Pahang | 64 | 58 | 90.6 | 3 | 4.7 | 0 | 0.0 | - | - | - | - | - | - | - |
| KK1M Terengganu | - | - | - | - | - | - | - | 36 | 34 | 94.4 | 0 | 0.0 | 0 | 0.0 |
| KK1M Kelantan | - | - | - | - | - | - | - | 185 | 174 | 94.1 | 4 | 2.2 | 0 | 0.0 |
| KK1M Sarawak | 75 | 73 | 97.3 | 1 | 1.3 | 0 | 0.0 | 805 | 766 | 95.2 | 0 | 0.0 | 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 2013-2014

| **Year** | **2013** | | **2014** | |
|---|---|---|---|---|
| No. of patients (N) | 140 | | 1055 | |
| | **n** | **%** | **n** | **%** |
| Patient with intra-op complication | 10 | 7.1 | 52 | 4.93 |
| **Types of complications** | | | | |
| PCR | 2 | 1.4 | 28 | 2.7 |
| Vitreous loss | 3 | 2.1 | 11 | 1.0 |
| Zonular dehiscence | 2 | 1.4 | 7 | 0.7 |
| Drop nucleus | 0 | 0.0 | 4 | 0.4 |
| Suprachoroidal haemorrhage | 0 | 0.0 | 1 | 0.1 |
| Central corneal oedema | 0 | 0.0 | 0 | 0.0 |
| Others | 6 | 4.3 | 12 | 1.1 |

Table 2.4.1-2:Distribution of Type of Intra-operative Complications – Posterior Capsule Rupture, CSR 2013-2014

| **Year** | **2013** | | **2014** | |
|---|---|---|---|---|
| No. of patients (N) | 140 | | 1055 | |
| | **n** | **%** | **n** | **%** |
| Patient with intra-op complication | 10 | 7.1 | 52 | 4.9 |
| **Types of complications** | | | | |
| PCR and Others | 1 | 0.7 | 7 | 0.7 |
| PCR Only | 1 | 0.7 | 21 | 2.0 |

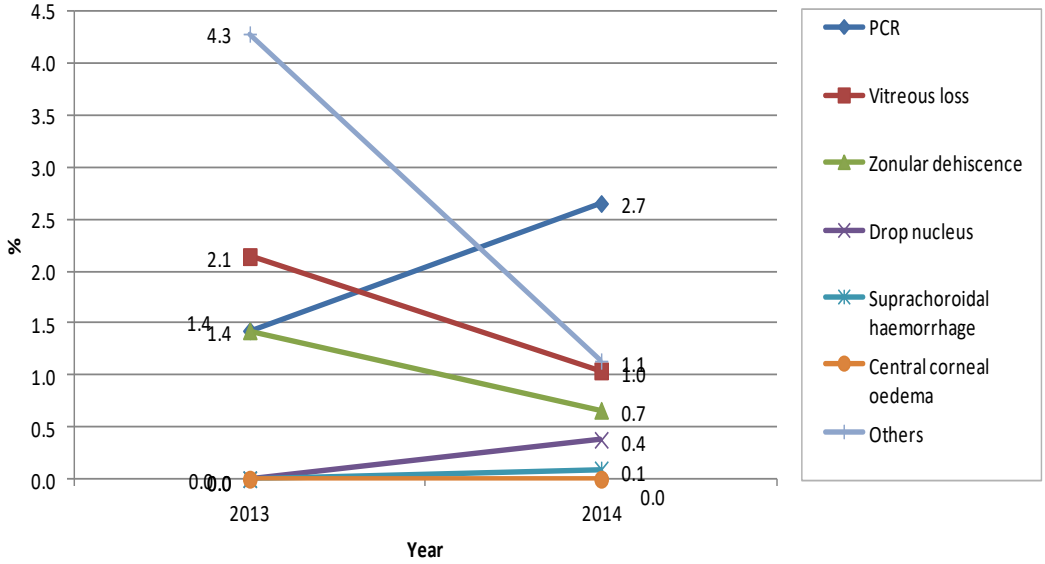



Figure 2.4.1-1:Distribution of Specific Type of Intra-operative Complications, CSR 2013-2014

Table 2.4.1-3:Distribution of Types of Intra-operative Complications, CSR 2013-2014

| Year | 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** | | | | | | | | | | | | | | | | | |
| KK1M 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 |
| KK1M 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** | | | | | | | | | | | | | | | | | |
| KK1M 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 |
| KK1M 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 |
| KK1M 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 |

## 2.4.2 PCR

Table 2.4.2-1:PCR, CSR 2013-2014

| Hospital | 2013 | | | 2014 | | |
|---|---|---|---|---|---|---|
| | N | n | % | N | n | % |
| KK1M Pahang | 64 | 2 | 3.1 | - | - | - |
| KK1M Terengganu | - | - | - | 38 | 0 | 0.0 |
| KK1M Kelantan | - | - | - | 186 | 8 | 4.3 |
| KK1M Sarawak | 76 | 0 | 0.0 | 831 | 20 | 2.4 |

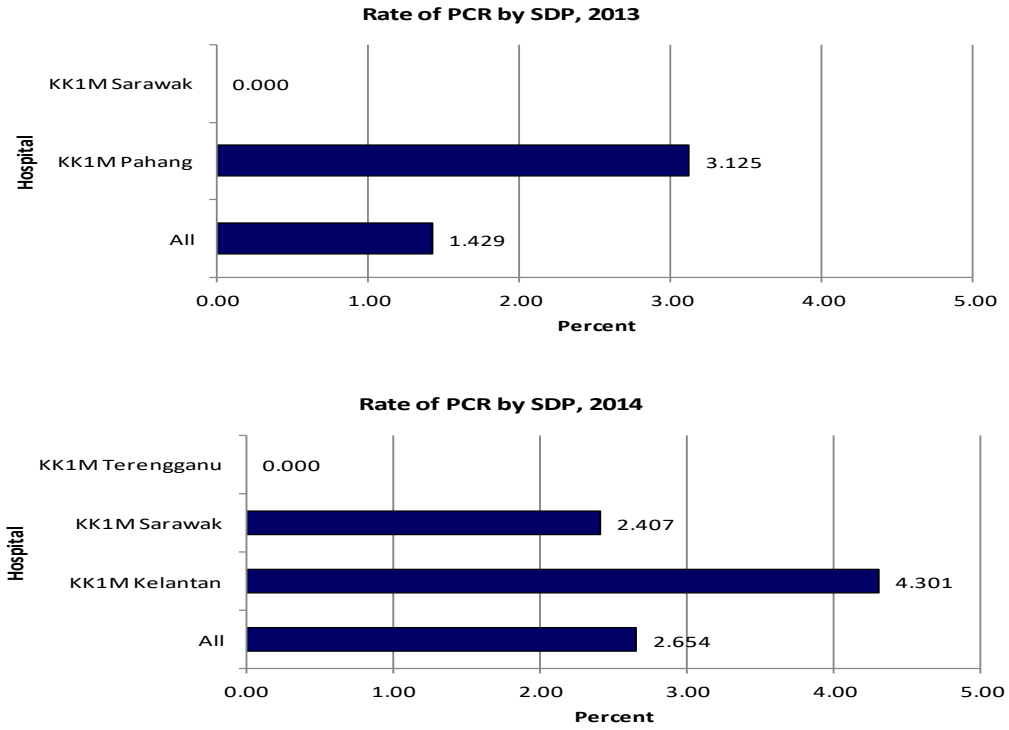



Figure 2.4.2-1:PCR (all surgeries) (National standard set at <3.0%), CSR 2013-2014

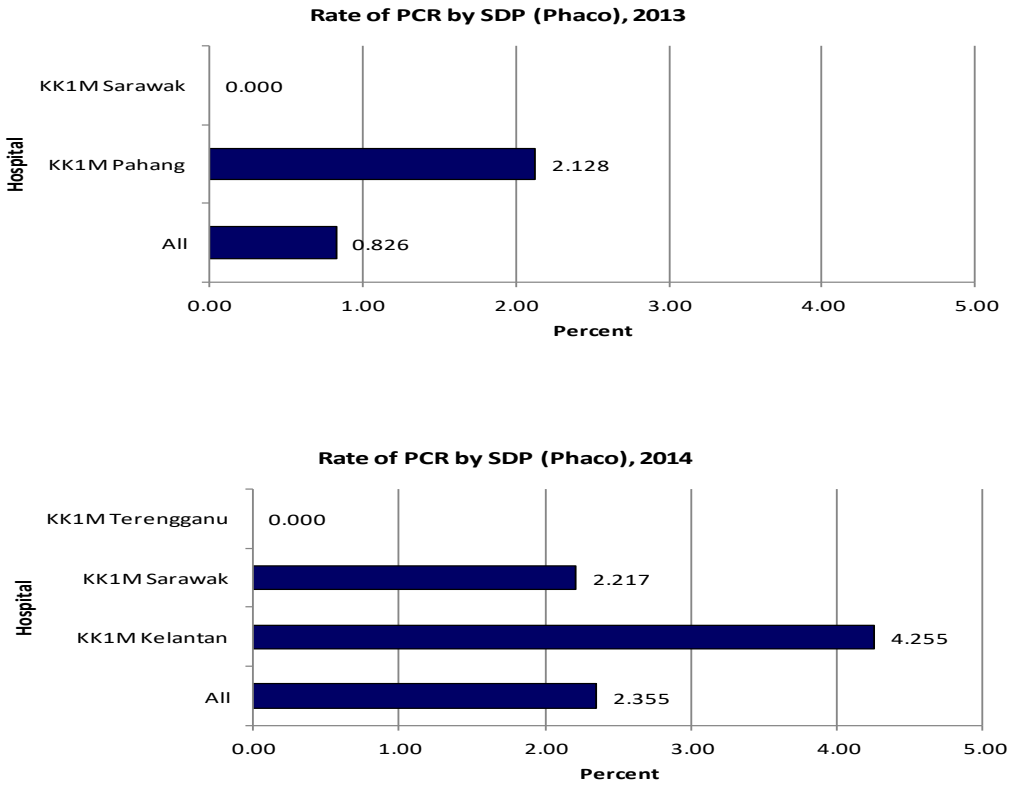



Figure 2.4.2-2:PCR (Phaco only) (National standard set at <3.0%), CSR 2013-2014

### 2.4.3 PCR by Type of Cataract Surgery

Table 2.4.3-1:PCR by Type of Cataract Surgery, CSR 2013-2014

| Year | 2013 | | | 2014 | | |
|---|---|---|---|---|---|---|
| No. of patients | 140 | | | 1055 | | |
| Total PCR | 2 | | | 28 | | |
| | **N** | **n** | **%** | **N** | **n** | **%** |
| Phaco | 121 | 1 | 0.8 | 934 | 22 | 2.4 |
| ECCE | 12 | 0 | 0.0 | 100 | 3 | 3.0 |
| Lens Aspiration | 0 | 0 | 0.0 | 0 | 0 | 0.0 |
| ICCE | 1 | 0 | 0.0 | 1 | 0 | 0.0 |
| Phaco converted to ECCE | 6 | 1 | 16.7 | 18 | 3 | 16.7 |

## 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 2013-2014

| Year | 2013 | 2014 |
|---|---|---|
| Total number of cataract surgery registered to CSR | 140 | 1055 |
| Cataract surgery with post-operative complication record | 115 | 981 |
| Ascertainment on post-operative complication (%) | (82.1) | (93.0) |
| Cataract surgery with visual outcome record | 98 | 863 |
| Ascertainment on visual outcome (%) | (70.0) | (81.8) |

### 2.5.2 Post-operative Infectious Endophthalmitis

Table 2.5.2-1:Post-operative Infectious Endophthalmitis, CSR 2013-2014

| Year | 2013 | 2014 |
|---|---|---|
| Eyes with post-operative complication records (N) | 115 | 981 |
| Eyes with post-operative infectious endophthalmitis (n) | 0 | 0 |
| Percentage of eyes with post-operative endophthalmitis (%) | 0.0 | 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 2013-2014

| Types of surgery | 2013 | | | | | 2014 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | n | Median | 25th percentile | 75th percentile | N | n | Median | 25th percentile | 75th 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 | - | - | - |

*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 2013-2014

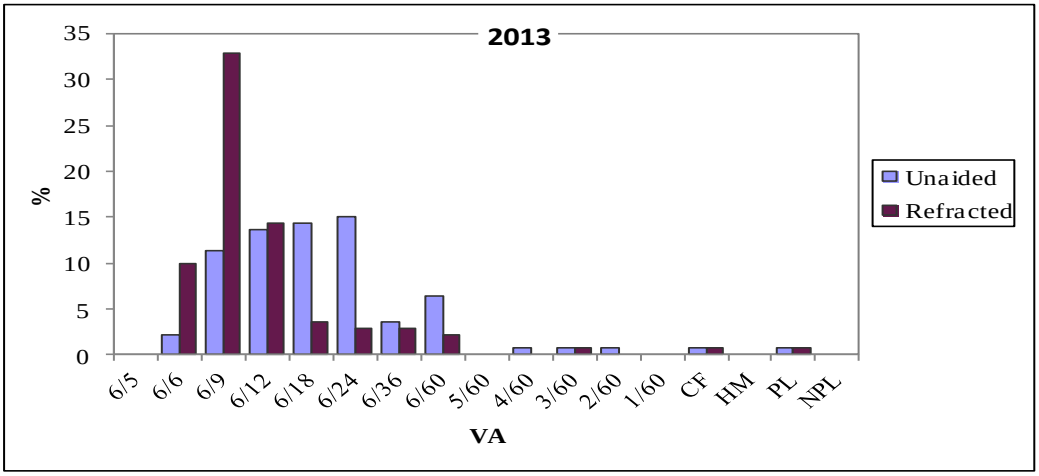
| Types of surgery | 2013 | | | | | 2014 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | n | Median | 25th percentile | 75th percentile | N | n | Median | 25th percentile | 75th percentile |
| All surgeries | 99 | 99 | 6 | 5 | 6 | 843 | 841 | 5 | 5 | 6 |
| Phaco | 88 | 88 | 5 | 4 | 6 | 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 | - | - | - |

*n = No. of available information*

2.5.4 Post-operative Visual Acuity

Table 2.5.4-1:Post-operative Visual Acuity, All Eyes, CSR 2013-2014

| **Year** | **2013** | | | | **2014** | | | |
|---|---|---|---|---|---|---|---|---|
| **VA** | **Unaided** | | **Refracted** | | **Unaided** | | **Refracted** | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| 6/5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| 6/6 | 3 | 2.1 | 14 | 10.0 | 54 | 5.1 | 315 | 29.9 |
| 6/9 | 16 | 11.4 | 46 | 32.9 | 128 | 12.1 | 268 | 25.4 |
| 6/12 | 19 | 13.6 | 20 | 14.3 | 182 | 17.3 | 161 | 15.3 |
| 6/18 | 20 | 14.3 | 5 | 3.6 | 189 | 17.9 | 42 | 4.0 |
| 6/24 | 21 | 15.0 | 4 | 2.9 | 151 | 14.3 | 22 | 2.1 |
| 6/36 | 5 | 3.6 | 4 | 2.9 | 81 | 7.7 | 17 | 1.6 |
| 6/60 | 9 | 6.4 | 3 | 2.1 | 51 | 4.8 | 8 | 0.8 |
| 5/60 | 0 | 0.0 | 0 | 0.0 | 6 | 0.6 | 0 | 0.0 |
| 4/60 | 1 | 0.7 | 0 | 0.0 | 2 | 0.2 | 0 | 0.0 |
| 3/60 | 1 | 0.7 | 1 | 0.7 | 5 | 0.5 | 2 | 0.2 |
| 2/60 | 1 | 0.7 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| 1/60 | 0 | 0.0 | 0 | 0.0 | 5 | 0.5 | 3 | 0.3 |
| CF | 1 | 0.7 | 1 | 0.7 | 5 | 0.5 | 2 | 0.2 |
| HM | 0 | 0.0 | 0 | 0.0 | 3 | 0.3 | 2 | 0.2 |
| PL | 1 | 0.7 | 1 | 0.7 | 0 | 0.0 | 0 | 0.0 |
| NPL | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Missing | 42 | 30.0 | 41 | 29.3 | 192 | 18.2 | 212 | 20.1 |
| **Total** | **140** | **100.0** | **140** | **100** | **1055** | **100** | **1055** | **100** |



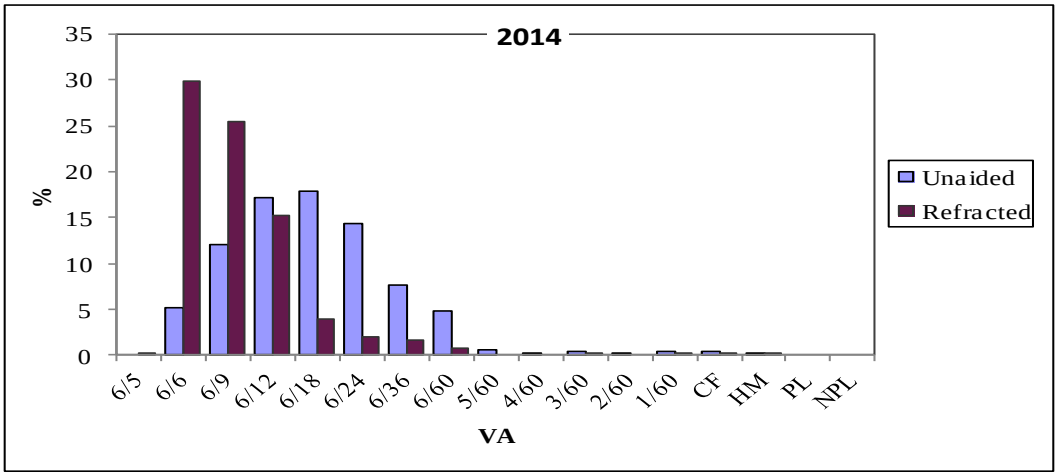




Figure 2.5.4-1:Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2013-2014

Table 2.5.4-2:Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013-2014

| Year | 2013 | | | | 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Unaided | | Refracted | | Unaided | | Refracted | |
| VA | n | % | n | % | n | % | n | % |
| 6/5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| 6/6 | 3 | 4.6 | 12 | 18.5 | 45 | 6.7 | 254 | 39.0 |
| 6/9 | 11 | 16.9 | 33 | 50.8 | 105 | 15.7 | 212 | 32.6 |
| 6/12 | 17 | 26.2 | 11 | 16.9 | 158 | 23.7 | 122 | 18.7 |
| 6/18 | 15 | 23.1 | 3 | 4.6 | 142 | 21.3 | 27 | 4.1 |
| 6/24 | 10 | 15.4 | 1 | 1.5 | 117 | 17.5 | 17 | 2.6 |
| 6/36 | 2 | 3.1 | 3 | 4.6 | 52 | 7.8 | 6 | 0.9 |
| 6/60 | 6 | 9.2 | 2 | 3.1 | 32 | 4.8 | 6 | 0.9 |
| 5/60 | 0 | 0.0 | 0 | 0.0 | 3 | 0.4 | 0 | 0.0 |
| 4/60 | 1 | 1.5 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| 3/60 | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 | 1 | 0.2 |
| 2/60 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| 1/60 | 0 | 0.0 | 0 | 0.0 | 3 | 0.4 | 2 | 0.3 |
| CF | 0 | 0.0 | 0 | 0.0 | 4 | 0.6 | 2 | 0.3 |
| HM | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 | 1 | 0.2 |
| PL | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| NPL | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **Total** | **65** | **100** | **65** | **100** | **667** | **100** | **651** | **100** |

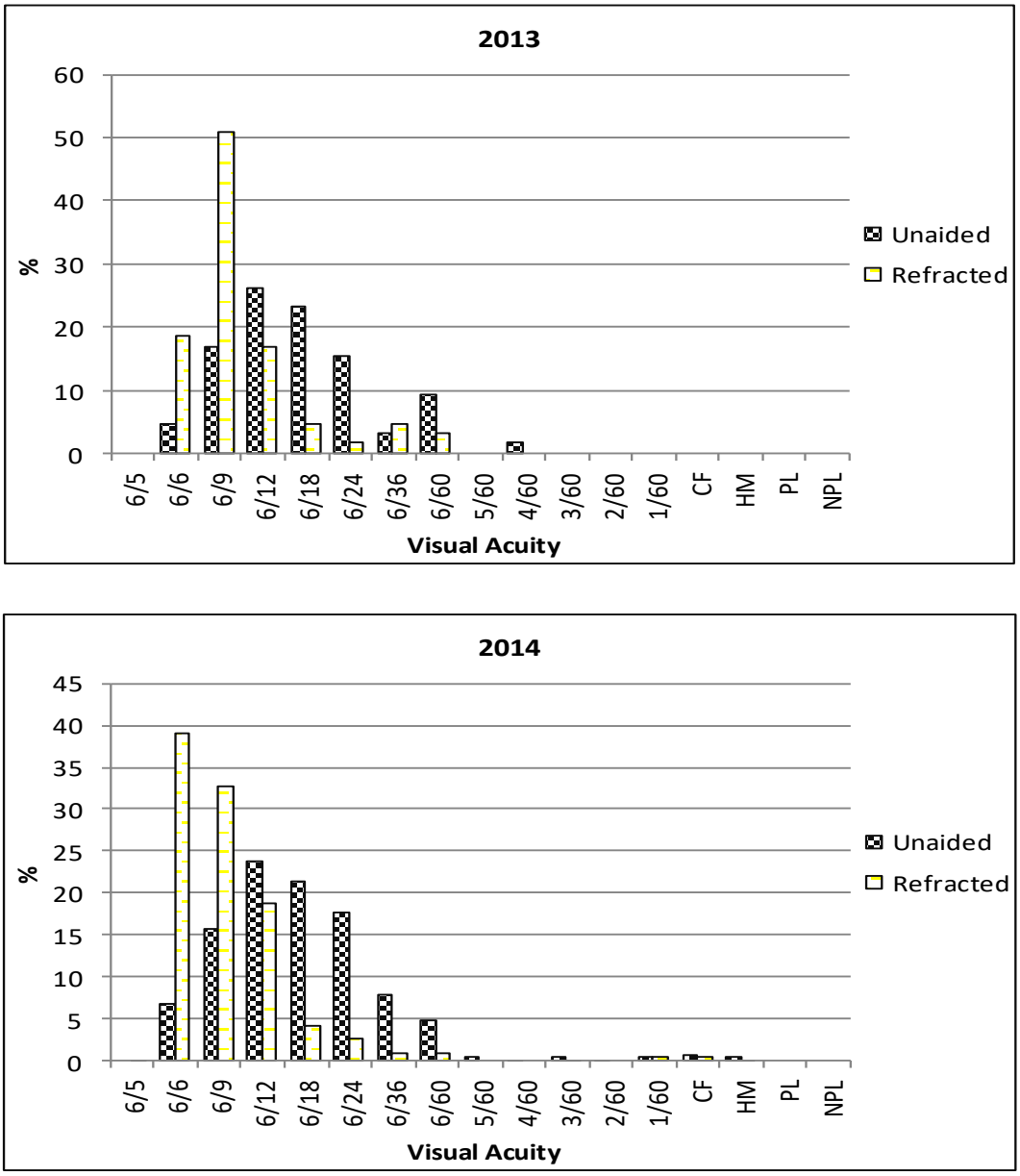



Figure 2.5.4-2:Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013-2014

## 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 2013-2014

| | 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 |

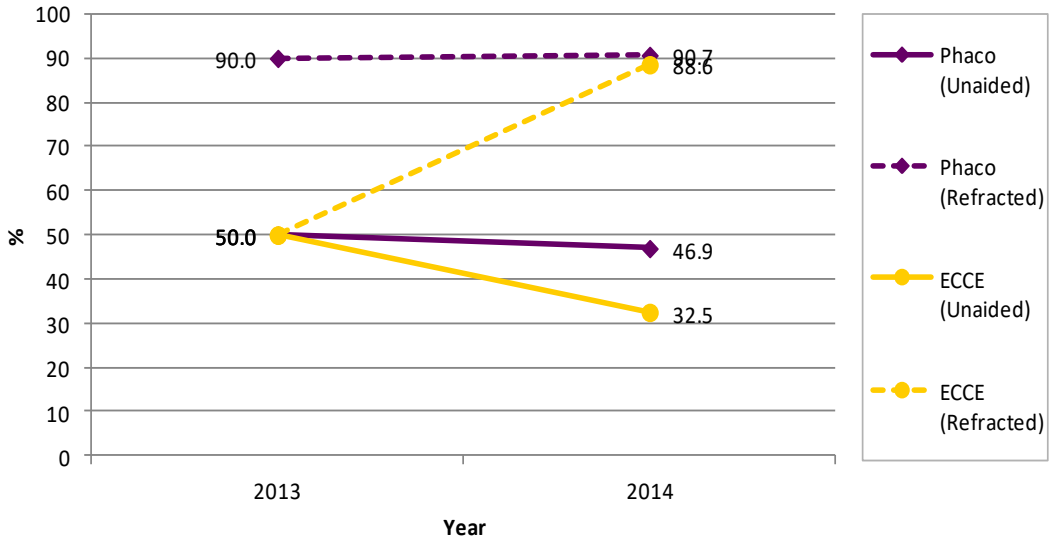



Figure 2.5.5-1:Figure 2.5.5 1:Post-operative Visual Acuity 6/12 or Better for Eyes without Ocular Co-morbidities by ECCE and Phaco, CSR 2013-2014

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 2013-2014

| 2013 | Types of Cataract Surgery | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | | Lens Aspiration | | | ECCE | | | Phaco | | | Phaco → ECCE | | | ICCE | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| With intra-op complications | 5 | 2 | 40.0 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 3 | 2 | 66.7 | 2 | 0 | 0.0 | 0 | 0 | 0.0 |
| No intra-op complications | 60 | 54 | 90.0 | 0 | 0 | 0.0 | 2 | 1 | 50.0 | 57 | 52 | 91.2 | 1 | 1 | 100.0 | 0 | 0 | 0.0 |

| 2014 | Types of Cataract Surgery | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | | Lens Aspiration | | | ECCE | | | Phaco | | | Phaco → ECCE | | | ICCE | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| With intra-op complications | 21 | 17 | 81.0 | 0 | 0 | 0.0 | 4 | 4 | 100.0 | 15 | 12 | 80.0 | 2 | 1 | 50.0 | 0 | 0 | 0.0 |
| No intra-op complications | 630 | 572 | 90.8 | 0 | 0 | 0.0 | 31 | 27 | 87.1 | 597 | 543 | 91.0 | 1 | 1 | 100.0 | 0 | 0 | 0.0 |

## 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 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| Factors | n | % | n | % |
| N (total no. of post-op refracted vision worse than 6/12) | 19 | | 98 | |
| Preexisting ocular co-morbidity | 3 | 15.8 | 12 | 12.2 |
| High astigmatism | 5 | 26.3 | 15 | 15.3 |
| Posterior capsular opacity | 0 | 0.0 | 1 | 1.0 |
| Cystoid macular oedema | 0 | 0.0 | 0 | 0.0 |
| Endophthalmitis | 0 | 0.0 | 0 | 0.0 |
| Corneal decompensation | 0 | 0.0 | 0 | 0.0 |
| Decentered IOL | 1 | 5.3 | 0 | 0.0 |
| Retinal detachment | 0 | 0.0 | 1 | 1.0 |
| Others | 11 | 57.9 | 28 | 28.6 |

Table 2.5.6-2:Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in Eyes without Preexisting Ocular co-morbidity, CSR 2013-2014

| | 2013 | | 2014 | |
|---|---|---|---|---|
| Factors | n | % | n | % |
| N | 9 | | 62 | |
| Preexisting ocular co-morbidity (not detected pre-operatively) | 0 | 0.0 | 6 | 9.7 |
| High astigmatism | 2 | 22.2 | 5 | 8.1 |
| Posterior capsular opacity | 0 | 0.0 | 1 | 1.6 |
| Cystoid macular oedema | 0 | 0.0 | 0 | 0.0 |
| Endophthalmitis | 0 | 0.0 | 0 | 0.0 |
| Corneal decompensation | 0 | 0.0 | 0 | 0.0 |
| Decentered IOL | 1 | 11.1 | 0 | 0.0 |
| Retinal detachment | 0 | 0.0 | 0 | 0.0 |
| Others | 5 | 55.6 | 20 | 32.3 |

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 2013-2014

| | Target Refraction | | Actual-Target Refraction | | Actual Refraction | | | |
|---|---|---|---|---|---|---|---|---|
| | All Patient | | All Patient | | ECCE | | Phaco | |
| | 2013 | 2014 | 2013 | 2014 | 2013 | 2014 | 2013 | 2014 |
| N | 139 | 894 | 86 | 649 | 4 | 41 | 76 | 705 |
| Mean | -0.3 | -0.3 | -0.4 | -0.8 | -0.4 | -1.2 | -0.7 | -1.0 |
| SD | 0.2 | 0.2 | 0.9 | 1.0 | 1.4 | 1.1 | 0.9 | 0.9 |
| Median | -0.3 | -0.2 | -0.5 | -0.7 | -0.4 | -1.3 | -0.8 | -0.9 |
| Minimum | -0.8 | -1.6 | -3.2 | -4.5 | -2.0 | -4.0 | -3.3 | -5.4 |
| Maximum | 0.0 | 0.5 | 1.8 | 3.3 | 0.0 | 0.8 | 1.6 | 3.0 |

*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 and Actual Refractive Power in ECCE and Phaco, CSR 2013-2014

| | Target Refraction | | | | Actual Refraction | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Patients | | | | ECCE | | | | Phaco | | | |
| | 2013 | | 2014 | | 2013 | | 2014 | | 2013 | | 2014 | |
| 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 | 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 | 2 | 4.9 | 0 | 0.0 | 5 | 0.7 |
| -3.5-<(-3.0) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 2.4 | 1 | 1.3 | 8 | 1.1 |
| -3.0-<(-2.5) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 2.4 | 1 | 1.3 | 25 | 3.5 |
| -2.5-<(-2.0) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 7.3 | 3 | 3.9 | 46 | 6.5 |
| -2.0-<(-1.5) | 0 | 0.0 | 1 | 0.1 | 1 | 25.0 | 7 | 17.1 | 5 | 6.6 | 72 | 10.2 |
| -1.5-<(-1.0) | 0 | 0.0 | 0 | 0.0 | 1 | 25.0 | 8 | 19.5 | 12 | 15.8 | 120 | 17.0 |

| | Target Refraction | | | | Actual Refraction | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Patients | | | | ECCE | | | | Phaco | | | |
| | 2013 | | 2014 | | 2013 | | 2014 | | 2013 | | 2014 | |
| -1.0-<(-0.5) | 18 | 12.9 | 67 | 7.5 | 1 | 25.0 | 7 | 17.1 | 21 | 27.6 | 179 | 25.4 |
| -0.5-<0.0 | 120 | 86.3 | 822 | 91.9 | 0 | 0.0 | 4 | 9.8 | 16 | 21.1 | 126 | 17.9 |
| 0.0-<0.5 | 1 | 0.7 | 3 | 0.3 | 0 | 0.0 | 7 | 17.1 | 7 | 9.2 | 80 | 11.3 |
| 0.5-<1.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 1 | 2.4 | 6 | 7.9 | 32 | 4.5 |
| 1.0-<1.5 | 0 | 0.0 | 0 | 0.0 | 1 | 25.0 | 0 | 0.0 | 2 | 2.6 | 6 | 0.9 |
| 1.5-<2.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 2.6 | 1 | 0.1 |
| 2.0-<2.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 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 | 1 | 0.1 |
| 3.0-<3.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| 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 |

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

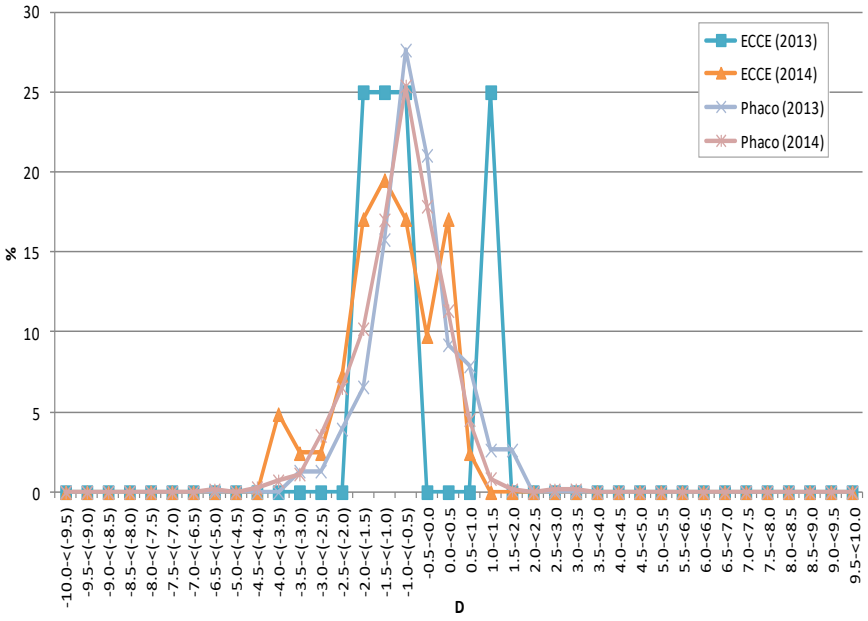



Figure 2.5.7-1:Distribution of Actual Refractive Power in ECCE and Phaco, CSR 2013-2014

Table 2.5.7-3:Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2014

| | Target Refraction | | | | Actual Refraction | | | | Difference between Target and Actual Refraction | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | | 2014 | | 2013 | | 2014 | | 2013 | | 2014 | |
| Power (D) | n | % | n | % | n | % | n | % | n | % | n | % |
| N | 120 | 100 | 807 | 100 | 76 | 100 | 705 | 100 | 75 | 100 | 614 | 100 |
| -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 | 2 | 0.3 | 0 | 0.0 | 1 | 0.2 |
| -4.0-<(-3.5) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.7 | 0 | 0.0 | 5 | 0.8 |
| -3.5-<(-3.0) | 0 | 0.0 | 0 | 0.0 | 1 | 1.3 | 8 | 1.1 | 1 | 1.3 | 5 | 0.8 |
| -3.0-<(-2.5) | 0 | 0.0 | 0 | 0.0 | 1 | 1.3 | 25 | 3.5 | 1 | 1.3 | 16 | 2.6 |
| -2.5-<(-2.0) | 0 | 0.0 | 0 | 0.0 | 3 | 3.9 | 46 | 6.5 | 2 | 2.7 | 36 | 5.9 |
| -2.0-<(-1.5) | 0 | 0.0 | 0 | 0.0 | 5 | 6.6 | 72 | 10.2 | 4 | 5.3 | 72 | 11.7 |
| -1.5-<(-1.0) | 0 | 0.0 | 0 | 0.0 | 12 | 15.8 | 120 | 17.0 | 8 | 10.7 | 87 | 14.2 |
| -1.0-<(-0.5) | 9 | 7.5 | 40 | 5.0 | 21 | 27.6 | 179 | 25.4 | 20 | 26.7 | 140 | 22.8 |
| -0.5-<0.0 | 110 | 91.7 | 764 | 94.7 | 16 | 21.1 | 126 | 17.9 | 15 | 20.0 | 133 | 21.7 |
| 0.0-<0.5 | 1 | 0.8 | 3 | 0.4 | 7 | 9.2 | 80 | 11.3 | 13 | 17.3 | 67 | 10.9 |
| 0.5-<1.0 | 0 | 0.0 | 0 | 0.0 | 6 | 7.9 | 32 | 4.5 | 7 | 9.3 | 42 | 6.8 |
| 1.0-<1.5 | 0 | 0.0 | 0 | 0.0 | 2 | 2.6 | 6 | 0.9 | 1 | 1.3 | 8 | 1.3 |
| 1.5-<2.0 | 0 | 0.0 | 0 | 0.0 | 2 | 2.6 | 1 | 0.1 | 3 | 4.0 | 0 | 0.0 |
| 2.0-<2.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 2.5-<3.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 1 | 0.2 |
| 3.0-<3.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 1 | 0.2 |
| 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 |

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

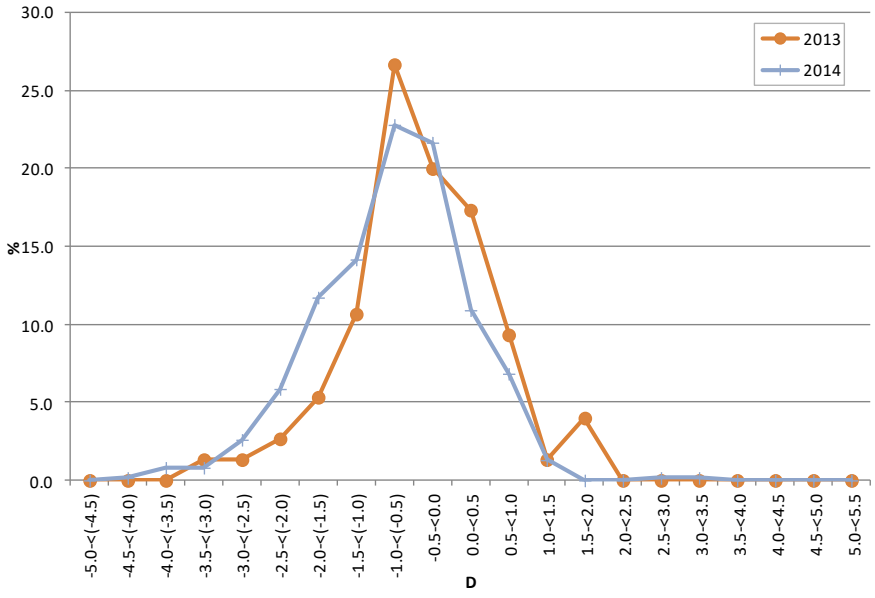



Figure 2.5.7-2:Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2014

Table 2.5.7-4:Percentage of Difference in Target and Actual Refractive Power within ±1.0D by SDP, CSR 2013-2014

| 2013 | All | | | By Phacoemulsification | | | By ECCE | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±1.0D | | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±1.0D | | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±1.0D | |
| | N | n | % | N | n | % | N | n | % |
| **All Centres** | 86 | 61 | 70.9 | 75 | 55 | 73.3 | 4 | 1 | 25.0 |
| KK1M Pahang | 34 | 24 | 70.6 | 25 | 19 | 76.0 | 3 | 1 | 33.3 |
| KK1M 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 ±1.0D | | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±1.0D | | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±1.0D | |
| | N | n | % | N | n | % | N | n | % |
| **All Centres** | 649 | 402 | 61.9 | 614 | 382 | 62.2 | 29 | 18 | 62.1 |
| KK1M Terengganu | 22 | 16 | 72.7 | 15 | 13 | 86.7 | 7 | 3 | 42.9 |
| KK1M Kelantan | 62 | 47 | 75.8 | 41 | 35 | 85.4 | 18 | 11 | 61.1 |
| KK1M Sarawak | 565 | 339 | 60.0 | 558 | 334 | 59.9 | 4 | 4 | 100.0 |

*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

# MAIWP-HOSPITAL SELAYANG

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# CHAPTER 3: MAIWP-HOSPITAL SELAYANG (PPKM-HS)

PPKM-HS forms the “static” portion of the KK1M Strategy to address issue of cataract blindness within an urban population. It is a dedicated 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 produce high quality with good outcome surgery, the scheduled surgical cases are low risks/less complicated cases and performed by fully certified surgeons. Its location at the commercial shoplot facilitates population access to the center. Cataract surgery data are entered into the local Eye Clinic Management System (ECMS) which synchronises with NED database at regular intervals.

## 3.1 Stock and Flow

PPKM-HS receives feeder from hospitals within Central Zone (Selangor, Wilayah Persekutuan and Negeri Sembilan) and beyond. The number of patients increased from 1506 in 2013 to 2256 in 2014.

### 3.1.1 Stock and Flow

Table 3.1.1-1:Stock and Flow, CSR 2013-2014

| **Year** | **2013** | | **2014** | |
|---|---|---|---|---|
| Total no. of cataract surgery registered to CSR | 1506 | | 2266 | |
| | **n** | **%** | **n** | **%** |
| Cataract surgery with visual outcome records | 1441 | 95.7 | 2183 | 96.3 |

## 3.2 Characteristics of Patients

Although PPKM-HS is part of the Cataract Free Zone Project - KK1M strategy to address cataract blindness issue in the country, the mean presenting age of the patients was younger, similar to mean presenting age for MOH. This could be due to its location in the urban area.

### 3.2.1 Patient Demography

Table 3.2.1-1:Age and Gender Distributions, CSR 2013-2014

| **Year** | **2013** | **2014** |
|---|---|---|
| Total number of cataract surgery | 1506 | 2266 |
| **Age** | | |
| Mean (years) | 65.3 | 65.2 |
| Median (years) | 66 | 66 |
| Minimum (year) | 19 | 1 |
| Maximum (years) | 93 | 98 |

| % Distribution | | | | |
|---|---|---|---|---|
| **Age group, years** | **n** | **%** | **n** | **%** |
| 0-4 | 0 | 0.0 | 1 | 0.0 |
| 5-9 | 0 | 0.0 | 0 | 0.0 |
| 10-14 | 0 | 0.0 | 0 | 0.0 |
| 15-19 | 1 | 0.1 | 0 | 0.0 |
| 20-24 | 3 | 0.2 | 1 | 0.0 |
| 25-29 | 0 | 0.0 | 0 | 0.0 |
| 30-34 | 1 | 0.1 | 4 | 0.2 |
| 35-39 | 4 | 0.3 | 3 | 0.1 |
| 40-44 | 17 | 1.1 | 23 | 1.0 |
| 45-49 | 36 | 2.4 | 65 | 2.5 |
| 50-54 | 108 | 7.2 | 134 | 5.0 |
| 55-59 | 177 | 11.8 | 317 | 12.3 |
| 60-64 | 294 | 19.5 | 430 | 17.9 |
| 65-69 | 343 | 22.8 | 541 | 23.6 |
| 70-74 | 320 | 21.3 | 435 | 19.6 |
| 75-79 | 156 | 10.4 | 261 | 12.7 |
| ≥80 | 46 | 3.1 | 51 | 5.2 |
| Missing | 0 | 0 | 0 | 0 |
| **Gender** | | | | |
| Male | 684 | 45.4 | 1077 | 47.5 |
| Female | 822 | 54.6 | 1189 | 52.5 |
| Missing | 0 | 0 | 0 | 0 |

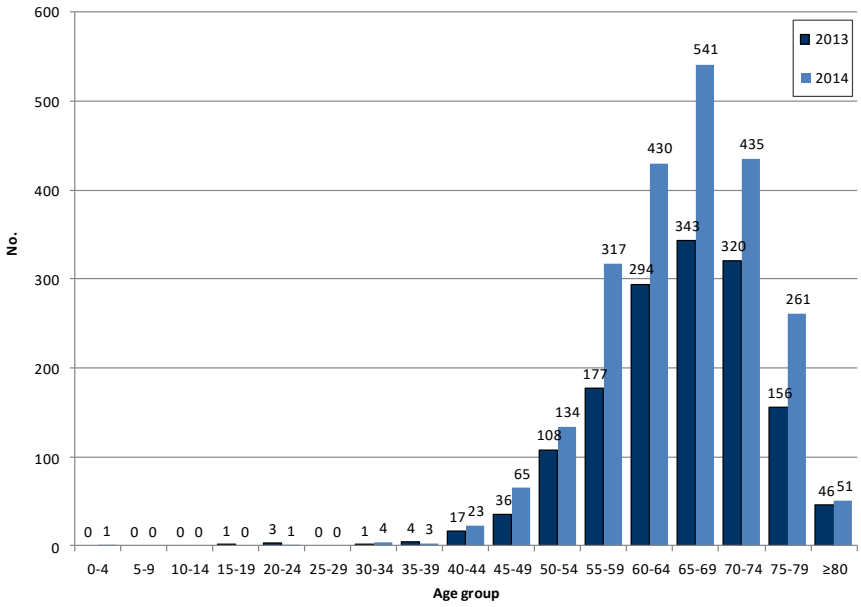


Figure 3.2.1-1:Age Distribution, CSR 2013-2014

### 3.2.2 Systemic co-morbidity

Similar to profile of patients in total, Hypertension and Diabetis Mellitus formed the major medical illness of patients presenting for cataract surgery in PPKM-HS

Table 3.2.2-1:Distribution of Systemic Co-Morbidity, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 1506 | | 2266 | |
| Percentage of patients with any systemic co-morbidity | 81.9 | | 77.3 | |
| **Percentage of patients with specific systemic co-morbidity** | | | | |
| | **n** | **%** | **n** | **%** |
| 1. Hypertension | 984 | 62.2 | 1405 | 62.0 |
| 2. Diabetes Mellitus | 679 | 42.9 | 1042 | 46.0 |
| 3. Ischaemic Heart Disease | 76 | 4.8 | 110 | 4.9 |
| 4. Renal Failure | 13 | 0.8 | 35 | 1.5 |
| 5. Cerebrovascular accident | 21 | 1.3 | 16 | 0.7 |
| 6. COAD/Asthma | 66 | 4.2 | 87 | 3.8 |
| 7. Others | 525 | 33.2 | 974 | 43.0 |

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

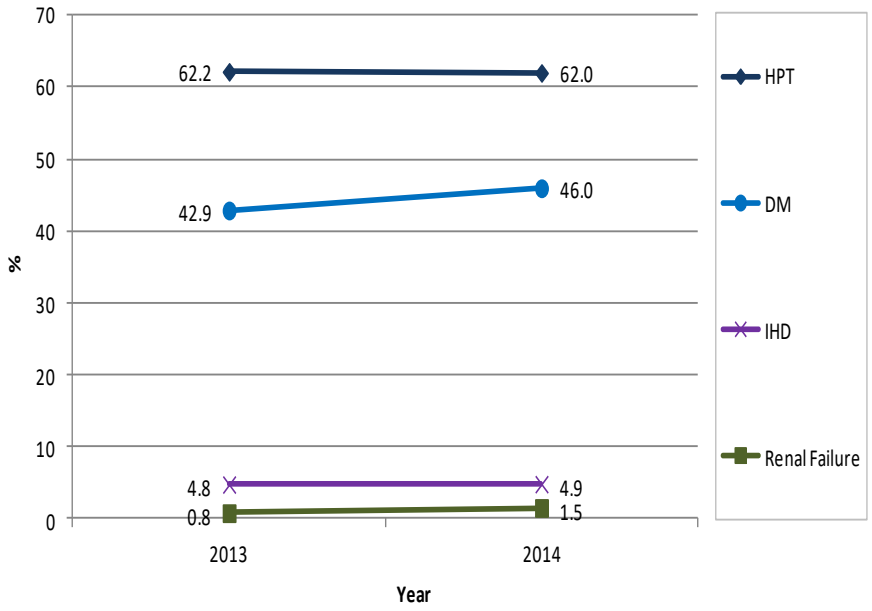


Figure 3.2.2-1: Percentage of Patients with Specific Systemic Co-morbidity, CSR 2013-2014

### 3.2.3 Causes of cataract

Table 3.2.3-1:Causes of Cataract, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 1506 | | 2266 | |
| | n | % | n | % |
| Primary cataract | 1214 | 80.6 | 1722 | 76.0 |
| Secondary cataract | 9 | 0.6 | 8 | 0.4 |
| Missing value | 583 | 18.8 | 536 | 23.7 |
| **Primary Cataract (N)** | **1067** | | **1467** | |
| | n | % | n | % |
| Senile/age related | 1064 | 99.7 | 1463 | 99.7 |
| Congenital | 0 | 0.0 | 0 | 0.0 |
| Development | 0 | 0.0 | 0 | 0.0 |
| Others | 3 | 0.3 | 4 | 0.3 |
| **Secondary Cataract (N)** | **5** | | **2** | |
| | n | % | n | % |
| Trauma | 1 | 20.0 | 0 | 0.0 |
| Drug induced | 1 | 20.0 | 1 | 50.0 |
| Surgery induced | 2 | 40.0 | 0 | 0.0 |
| Others | 1 | 20.0 | 1 | 50.0 |

### 3.2.4 First or Second Eye Surgery

The percentage of patients who had surgery in the fellow eye is higher than the figure for all MOH (35.2% in 2014). This is an evidence to suggest that PPKM-HS concept has potential to be used to increase access to patients requiring surgery.

Table 3.2.4-1:First or Fellow Eye Surgery, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 1506 | | 2266 | |
| | n | % | n | % |
| First eye surgery | 894 | 59.4 | 1212 | 53.5 |
| Fellow eye surgery | 612 | 40.6 | 913 | 40.3 |
| Missing | 0 | 0.0 | 141 | 6.2 |
| Patients who had second surgery in the same year | 0 | 0.0 | 449 | 19.8 |
| **Period of time between first and fellow eye surgery (months)** | | | | |
| N | 611 | | 913 | |
| Mean | 17.3 | | 13.9 | |
| SD | 27.3 | | 27.2 | |
| Median | 6.8 | | 4.3 | |
| Patients who had cataract surgery before | 612 | | 913 | |
| | n | % | n | % |
| Eyes with intra-operative complications during surgery in the first eye | 36 | 5.9 | 33 | 3.6 |

### 3.2.5 Past Ocular Surgery of the Operated Eye

Most patients did not have any past ocular surgery on the operated eye.

Table 3.2.5-1:Past Ocular Surgery of the Operated Eye, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No. of patients | 1506 | | 2266 | |
| No. of eyes with past ocular surgery record (N) | 1424 | | 2031 | |
| | n | % | n | % |
| Patients with no past ocular surgery | 1362 | 95.6 | 1986 | 97.8 |
| Vitreoretinal surgery | 33 | 2.3 | 26 | 1.3 |
| Pterygium excision | 10 | 0.7 | 20 | 1.0 |
| Filtering surgery | 0 | 0.0 | 0 | 0.0 |
| Penetrating keratoplasty | 0 | 0.0 | 0 | 0.0 |
| Others | 22 | 1.5 | 20 | 1.0 |

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

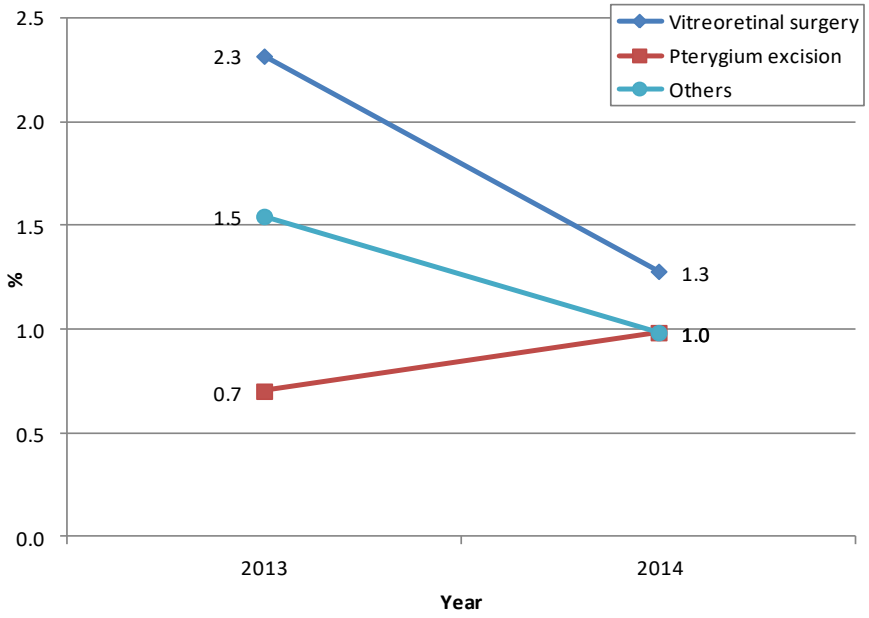


Figure 3.2.5-1:Distribution of Past Ocular Surgery of the Operated Eye, CSR 2013-2014

### 3.2.6 Pre-existing Ocular Co-morbidity

Consistent with the concept of maximizing surgical output by surgery on low risk cases, only 16% of the operated patients had pre-existing ocular co-morbidity on the operated eye. (as compared to 40% in total MOH and 24% in KK1M mobile and transit)

Table 3.2.6-1:Distribution of Pre-existing Ocular Co-Morbidity, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 1506 | | 2266 | |
| | **n** | **%** | **n** | **%** |
| Patients with any ocular co-morbidity | 253 | 16.8 | 384 | 16.9 |
| Patients with specific ocular co-morbidity | | | | |
| **Anterior segment** | | | | |
| 1. Glaucoma | 31 | 2.1 | 45 | 2.0 |
| 2. Pterygium involving the cornea | 14 | 0.9 | 16 | 0.7 |
| 3. Pseudoexfoliation | 4 | 0.3 | 5 | 0.2 |
| 4. Corneal opacity | 2 | 0.1 | 5 | 0.2 |
| 5. Chronic uveitis | 0 | 0.0 | 0 | 0.0 |
| **Len related complication** | | | | |
| 1. Phacomorphic | 0 | 0.0 | 1 | 0.0 |
| 2. Phacolytic | 0 | 0.0 | 0 | 0.0 |
| 3. Subluxated/Disclosed | 0 | 0.0 | 0 | 0.0 |
| **Posterior segment** | | | | |
| 1. Diabetic Retinopathy: Non Proliferative | 70 | 4.6 | 115 | 5.1 |
| 2. Diabetic Retinopathy: Proliferative | 31 | 2.1 | 33 | 1.5 |
| 3. Diabetic Retinopathy: CSME* | 6 | 0.4 | 13 | 0.6 |
| 4. Diabetic Retinopathy: Vitreous haemorrhage | 4 | 0.3 | 2 | 0.1 |
| 5. ARMD | 13 | 0.9 | 19 | 0.8 |
| 6. Other macular disease (includes hole or scar) | 6 | 0.4 | 13 | 0.6 |
| 7. Optic nerve disease, any type | 0 | 0.0 | 2 | 0.1 |
| 8. Retinal detachment | 11 | 0.7 | 5 | 0.2 |
| 9. Cannot be assessed | 9 | 0.6 | 84 | 3.7 |
| **Miscellaneous** | | | | |
| 1. Amblyopia | 0 | 0.0 | 1 | 0.0 |
| 2. Significant previous eye trauma | 0 | 0.0 | 0 | 0.0 |
| 3. Pre-existing non glaucoma field defect | 0 | 0.0 | 0 | 0.0 |
| 4. Others | 88 | 5.8 | 65 | 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*

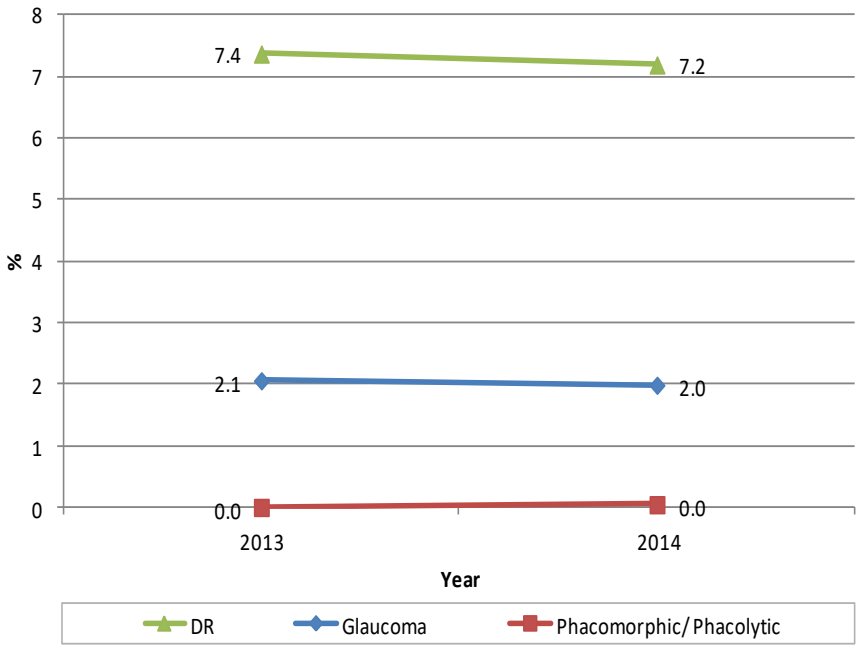


Figure 3.2.6-1:Distribution of Eyes with Specific Ocular Co-morbidity, CSR 2013-2014

### 3.2.7 Pre-operative Vision

Most patients presented at moderate visual impairment (40.9% at <6/18 - 6/60 in 2014) unlike figure for total MOH (43.2% at <3/60 in 2014)

Table 3.2.7-1:Distribution of Pre-Operative Vision, CSR 2013-2014

| Year | | 2013 | | 2014 | |
|---|---|---|---|---|---|
| No. of patients (N) | | 1506 | | 2266 | |
| | | n | % | n | % |
| Patients with unaided VA | | 1148 | 76.2 | 1662 | 73.3 |
| Patients with refracted VA | | 6 | 0.4 | 10 | 0.4 |
| Patients with no refraction | | 1191 | 79.1 | 1652 | 72.9 |
| 6/12 and better | Unaided | 58 | 5.1 | 79 | 4.8 |
| | Refracted | 2 | 33.3 | 0 | 0.0 |
| <6/12 - 6/18 | Unaided | 91 | 7.9 | 156 | 9.4 |
| | Refracted | 0 | 0.0 | 2 | 20.0 |
| <6/18 - 6/60 | Unaided | 506 | 44.1 | 680 | 40.9 |
| | Refracted | 4 | 66.7 | 3 | 30.0 |
| <6/60 - 3/60 | Unaided | 135 | 11.8 | 194 | 11.7 |
| | Refracted | 0 | 0.0 | 0 | 0.0 |
| <3/60 | Unaided | 358 | 31.2 | 553 | 33.3 |
| | Refracted | 0 | 0.0 | 5 | 50.0 |
| Unaided VA for patient with no refraction | | | | | |
| n | | 1145 | | 1652 | |
| 6/12 and better | | 58 | 5.1 | 79 | 4.8 |
| <6/12 - 6/18 | | 91 | 7.9 | 154 | 9.3 |
| <6/18 - 6/60 | | 503 | 43.9 | 677 | 41.0 |
| <6/60 - 3/60 | | 135 | 11.8 | 194 | 11.7 |
| <3/60 | | 358 | 31.3 | 548 | 33.2 |

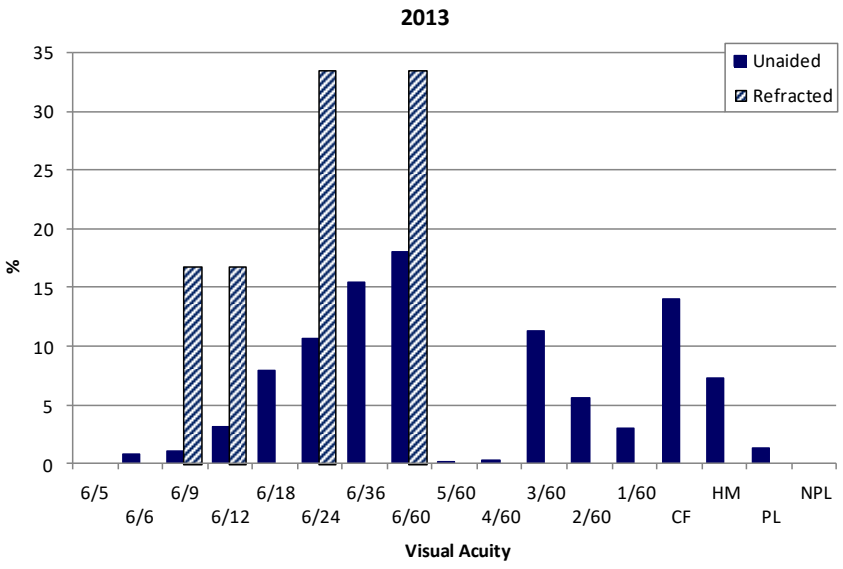


Figure 3.2.7-1:Distribution of Pre-Operative Vision (Unaided/presenting and refracted), CSR 2013

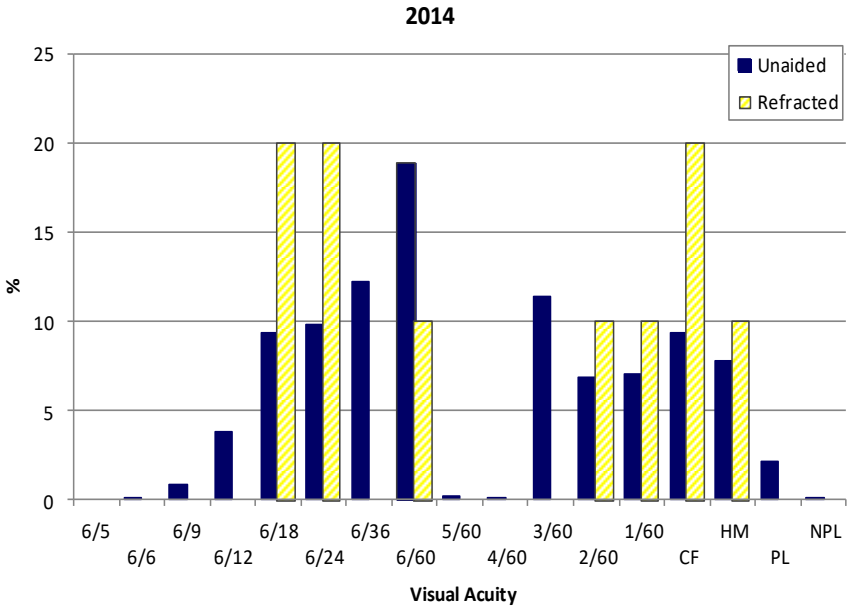


Figure 3.2.7-2:Distribution of Pre-Operative Vision (Unaided/presenting and refracted), CSR 2014

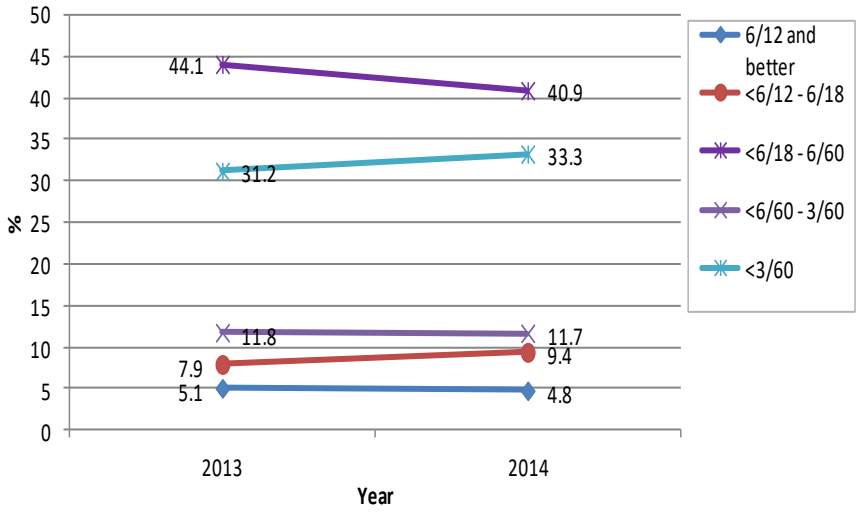


Figure 3.2.7-3:Distribution of Pre-Operative Vision (Unaided/presenting), CSR 2013-2014

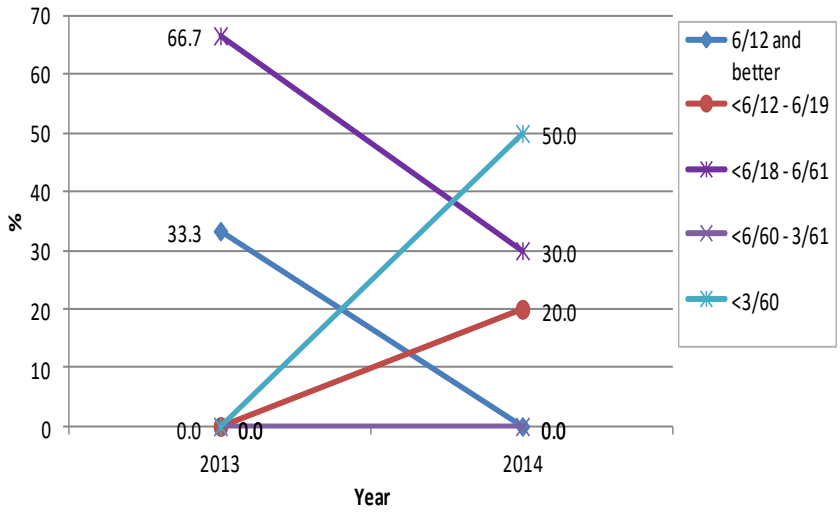


Figure 3.2.7-4:Distribution of Pre-Operative Vision (Refracted), CSR 2013-2014

## 3.2.8 Target Refractive Power

Table 3.2.8-1:Distribution of Target Refractive Power, CSR 2013-2014

| Year | 2013 | 2014 |
|---|---|---|
| Operated eye ( N) | 985 | 859 |
| Mean | -0.3 | -0.3 |
| SD | 0.4 | 0.1 |
| Median | -0.3 | -0.3 |
| Minimum | -6.2 | -1.3 |
| Maximum | 0.01 | 0.20 |

Table 3.2.8-2:Distribution of Target Refractive Power, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| Target refractive power (Dioptres) | Operated eye N=985 | | Operated eye N=859 | |
| | **n** | **%** | **n** | **%** |
| -10-<(-9.5) | 0 | 0.0 | 0 | 0.0 |
| -9.5-<(-9) | 0 | 0.0 | 0 | 0.0 |
| -9-<(-8.5) | 0 | 0.0 | 0 | 0.0 |
| -8.5-<(-8) | 0 | 0.0 | 0 | 0.0 |
| -8-<(-7.5) | 0 | 0.0 | 0 | 0.0 |
| -7.5-<(-7) | 0 | 0.0 | 0 | 0.0 |
| -7-<(-6.5) | 0 | 0.0 | 0 | 0.0 |
| -6.5-<(-5) | 4 | 0.4 | 0 | 0.0 |
| -5-<(-4.5) | 0 | 0.0 | 0 | 0.0 |
| -4.5-<(-4) | 0 | 0.0 | 0 | 0.0 |
| -4-<(-3.5) | 0 | 0.0 | 0 | 0.0 |
| -3.5-<(-3) | 0 | 0.0 | 0 | 0.0 |
| -3-<(-2.5) | 0 | 0.0 | 0 | 0.0 |
| -2.5-<(-2) | 0 | 0.0 | 0 | 0.0 |
| -2-<(-1.5) | 1 | 0.1 | 0 | 0.0 |

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| Target refractive power (Dioptres) | Operated eye N=985 | | Operated eye N=859 | |
| -1.5-<(-1) | 1 | 0.1 | 3 | 0.4 |
| -1-<(-0.5) | 42 | 4.3 | 53 | 6.2 |
| -0.5-<0 | 936 | 95.0 | 802 | 93.4 |
| 0-<0.5 | 1 | 0.1 | 1 | 0.1 |
| 0.5-<1 | 0 | 0.0 | 0 | 0.0 |
| 1-<1.5 | 0 | 0.0 | 0 | 0.0 |
| 1.5-<2 | 0 | 0.0 | 0 | 0.0 |
| 2-<2.5 | 0 | 0.0 | 0 | 0.0 |
| 2.5-<3 | 0 | 0.0 | 0 | 0.0 |
| 3-<3.5 | 0 | 0.0 | 0 | 0.0 |
| 3.5-<4 | 0 | 0.0 | 0 | 0.0 |
| 4-<4.5 | 0 | 0.0 | 0 | 0.0 |
| 4.5-<5 | 0 | 0.0 | 0 | 0.0 |
| 5-<5.5 | 0 | 0.0 | 0 | 0.0 |
| 5.5-<6 | 0 | 0.0 | 0 | 0.0 |
| 6-<6.5 | 0 | 0.0 | 0 | 0.0 |
| 6.5-<7 | 0 | 0.0 | 0 | 0.0 |
| 7-<7.5 | 0 | 0.0 | 0 | 0.0 |
| 7.5-<8 | 0 | 0.0 | 0 | 0.0 |
| 8-<8.5 | 0 | 0.0 | 0 | 0.0 |
| 8.5-<9 | 0 | 0.0 | 0 | 0.0 |
| 9-<9.5 | 0 | 0.0 | 0 | 0.0 |
| 9.5-10 | 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 Surgeon Status

Table 3.3.1-1:Surgeon Status, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No. of patients (N) | 1506 | | 2266 | |
| | **n** | **%** | **n** | **%** |
| Specialist | 1488 | 98.8 | 2197 | 97.0 |
| Gazetting Specialist | 7 | 0.5 | 2 | 0.1 |
| Medical Officer | 11 | 0.7 | 23 | 1.0 |
| Missing/NA | 0 | 0 | 44 | 1.9 |

### 3.3.2 Duration of Surgery

Table 3.3.2-1:Duration of Surgery by Types of Cataract Surgery in minutes, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| | **Median** | **(25th percentile, 75th percentile)** | **Median** | **(25th percentile, 75th percentile)** |
| All eyes | 22 | (18-30) | 20 | (17-25) |
| Phaco | 22 | (18-29) | 20 | (17-24) |
| ECCE | 40 | (32-49) | 38 | (34-45) |
| Phaco → ECCE | 56.5 | (45-67) | 56.5 | (47.5-71) |
| ICCE | 45 | (30-60) | 64 | (52.5-69) |
| Lens Aspiration | 27.5 | (21-34) | 20.5 | (17-23) |

*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*

### 3.3.3 Distribution of Types of Cataract Surgery

Table 3.3.3-1:Distribution of Types of Cataract Surgery, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 1506 | | 2266 | |
| | **n** | **%** | **n** | **%** |
| Phacoemulsification | 1432 | 95.1 | 2196 | 96.9 |
| ECCE | 37 | 2.5 | 18 | 0.8 |
| Lens Aspiration | 3 | 0.2 | 5 | 0.2 |
| Phaco converted to ECCE | 25 | 1.7 | 39 | 1.7 |
| ICCE | 2 | 0.1 | 4 | 0.2 |

### 3.3.4 Anaesthesia in Cataract Surgery

The practice is consistent in all MOH premises

Table 3.3.4-1:Types of Anaesthesia, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 1506 | | 2266 | |
| | **n** | **%** | **n** | **%** |
| General Anesthesia | 0 | 0.0 | 0 | 0.0 |
| Local Anesthesia | 1506 | 100.0 | 2266 | 100.0 |
| **Type of local anasthesia** | | | | |
| Subtenon | 166 | 11.0 | 123 | 5.4 |
| Topical | 1282 | 85.1 | 2171 | 95.8 |
| Peribulbar | 0 | 0.0 | 0 | 0.0 |
| Retrobulbar | 0 | 0.0 | 6 | 0.3 |
| Intracameral | 287 | 19.1 | 494 | 21.8 |
| Subconjunctival | 25 | 1.7 | 12 | 0.5 |
| Facial block | 0 | 0.0 | 0 | 0.0 |
| Combined local anaesthesia | 309 | 20.5 | 584 | 25.8 |
| **Types of sedation for patients under local anaesthesia** | | | | |
| No sedation | 1305 | 86.7 | 1565 | 69.1 |
| Oral sedation alone | 0 | 0.0 | 0 | 0.0 |
| Intravenous alone | 1 | 0.1 | 0 | 0.0 |
| Intravenous plus oral | 1 | 0.1 | 0 | 0.0 |
| Intramuscular alone | 0 | 0.0 | 0 | 0.0 |

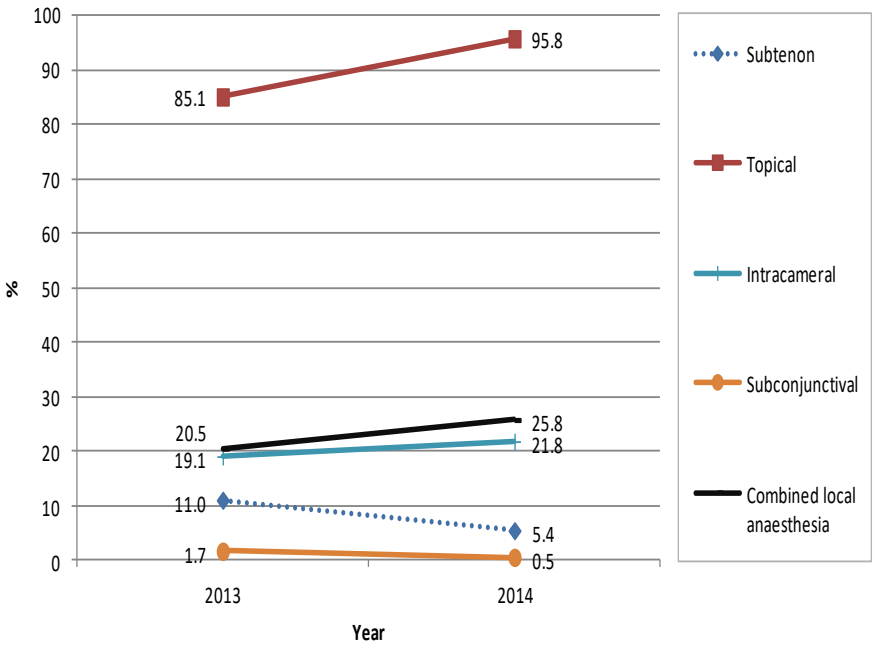


Figure 3.3.4-1:Types of Anaesthesia, CSR 2013-2014

### 3.3.5 Intraocular Lens Implantation

Table 3.3.5-1:Intraocular Lens Implantation, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No of patients (N) | 1506 | | 2266 | |
| | n | % | n | % |
| With IOL | 1499 | 99.5 | 2256 | 99.6 |
| Without IOL | 7 | 0.5 | 7 | 0.3 |
| Not Available | 0 | 0.0 | 0 | 0.0 |
| **IOL Placement** | | | | |
| No of IOL | 1499 | | 2259 | |
| PCIOL | 1472 | 98.2 | 2218 | 98.2 |
| ACIOL | 24 | 1.6 | 36 | 1.6 |
| Scleral Fixated IOL | 0 | 0.0 | 2 | 0.1 |
| Others | 3 | 0.2 | 3 | 0.1 |
| Not Available /missing | 0 | 0.0 | 0 | 0.0 |
| **Materials of IOL** | | | | |
| No of IOL | 1499 | | 2259 | |
| 1. Acrylic | 1396 | 93.1 | 2109 | 93.4 |
| 2. PMMA | 23 | 1.5 | 26 | 1.2 |
| 3. Silicone | 39 | 2.6 | 86 | 3.8 |
| 4. Others | 9 | 0.6 | 12 | 0.5 |
| Not Available/ missing | 32 | 2.1 | 26 | 1.2 |
| **Types of IOL** | | | | |
| No of IOL | 1499 | | 2259 | |
| 1. Foldable | 1453 | 96.9 | 2210 | 97.8 |
| 2. Non-foldable | 21 | 1.4 | 25 | 1.1 |
| Not Available/ missing | 25 | 1.7 | 24 | 1.1 |

Table 3.3.5-2:Distribution of IOL Placement, CSR 2013-2014

| Cataract Surgery With IOL | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Posterior Chamber IOL | | Anterior Chamber IOL | | Scleral Fixated IOL | |
| | N | 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 |

## 3.4 Intra-operative Complications

### 3.4.1 Intra-operative Complications by Years

The percentages of PCR were not accurate as the ECMS had duplicates of data fields in its data entry form (PCR and Posterior Capsular Rupture). This results in wrong synchronization to NED. This problem has been rectified for data entry 2015 onward.

Table 3.4.1-1:Distribution of Type of Intra-operative Complications, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No. of patients (N) | 1506 | | 2266 | |
| | n | % | n | % |
| Patient with intra-op complication | 53 | 3.5 | 61 | 2.69 |
| **Types of complications** | | | | |
| PCR | 2 | 0.1 | 29 | 1.3 |
| Vitreous loss | 22 | 1.5 | 27 | 1.2 |
| Zonular dehiscence | 11 | 0.8 | 20 | 0.9 |
| Drop nucleus | 7 | 0.4 | 5 | 0.2 |
| Suprachoroidal haemorrhage | 0 | 0.0 | 0 | 0.0 |
| Central corneal oedema | 1 | 0.1 | 1 | 0.0 |
| Others | 40 | 2.7 | 6 | 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 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| No. of patients (N) | 1506 | | 2266 | |
| | n | % | n | % |
| Patient with intra-op complication | 52 | 3.5 | 61 | 2.7 |
| **Types of complications** | | | | |
| PCR and Others | 2 | 0.1 | 15 | 0.7 |
| PCR Only | 0 | 0.0 | 14 | 0.6 |

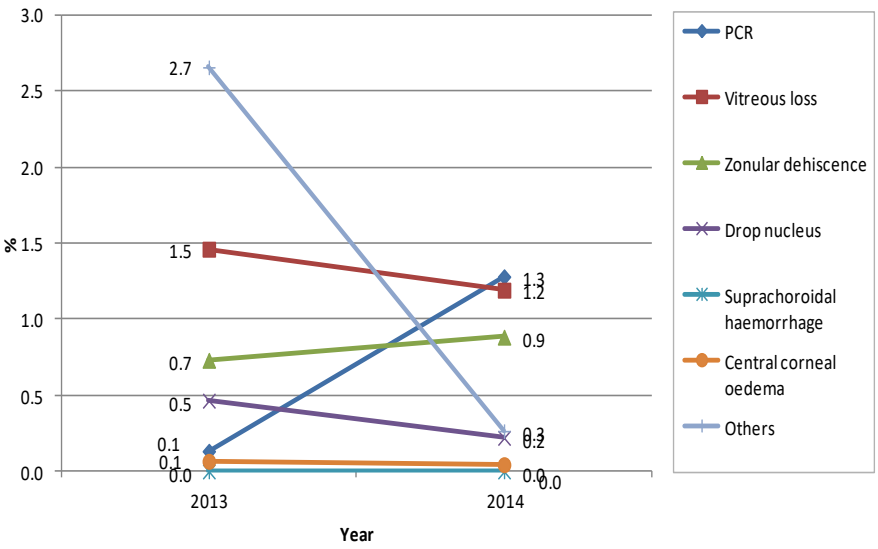


Figure 3.4.1-1:Distribution of Specific Type of Intra-operative Complications, CSE 2013-2014

Table 3.4.1-3:Distribution of Types of Intra-operative Complications, CSR 2013-2014

| MAIWP | No. of patients (N) | Any intra-op complication | | PCR | | Vitreous loss | | Zonular Dehiscence | | Nucleus drop (or dropped nucleus) | | Suprachoroida Haemorrhage | | Central Corneal Edema | | Others | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| 2013 | 1506 | 52 | 3.5 | 0 | 0.0 | 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 |

3.4.2 PCR

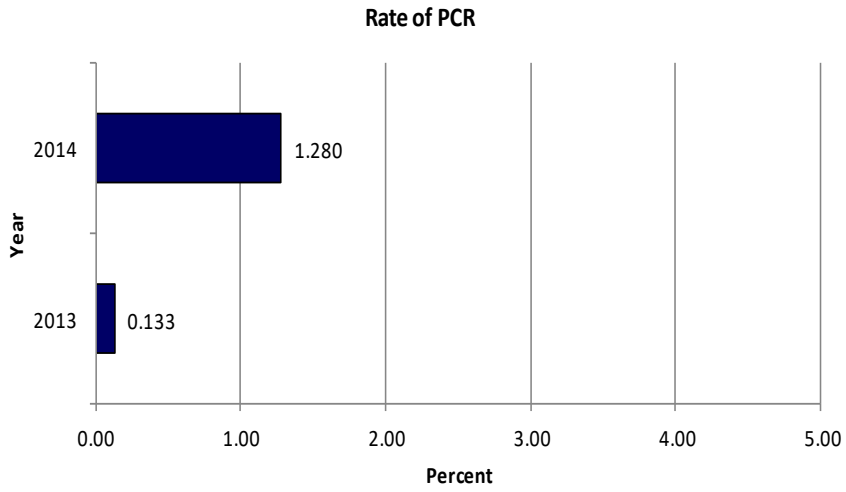


Figure 3.4.2-1:PCR (all surgeries) (National standard set at <3.0%), CSR 2013-2014

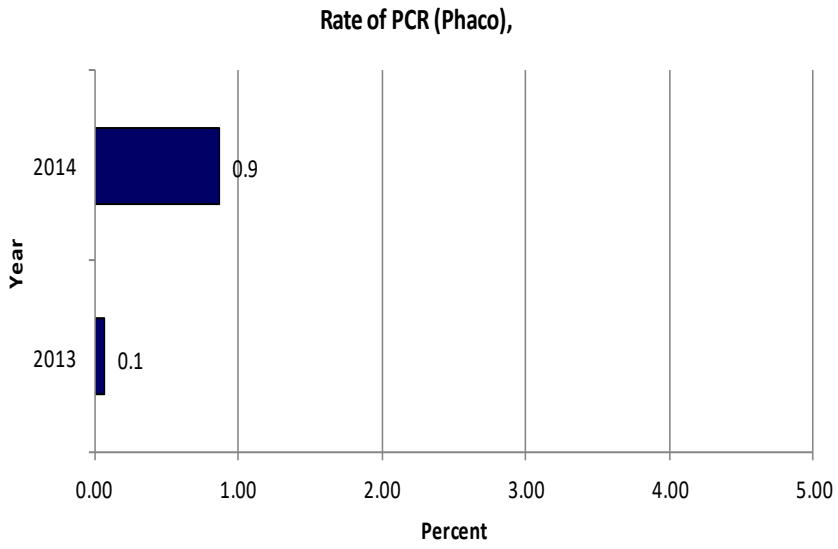


Figure 3.4.2-2:PCR (Phaco only) (National standard set at <3.0%), CSR 2013-2014

### 3.4.3 PCR by Type of Cataract Surgery

Table 3.4.3-1:PCR by Type of Cataract Surgery, CSR 2013-2014

| Year | 2013 | | | 2014 | | |
|---|---|---|---|---|---|---|
| No. of patients | 1506 | | | 2266 | | |
| Total PCR | 2 | | | 29 | | |
| | N | n | % | N | n | % |
| Phaco | 1432 | 1 | 0.1 | 2196 | 19 | 0.9 |
| ECCE | 37 | 1 | 2.7 | 18 | 0 | 0.0 |
| Lens Aspiration | 3 | 0 | 0.0 | 5 | 0 | 0.0 |
| ICCE | 2 | 0 | 0.0 | 4 | 0 | 0.0 |
| Phaco converted to ECCE | 25 | 0 | 0.0 | 39 | 10 | 25.6 |

## 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 2013-2014

| Year | 2013 | 2014 |
|---|---|---|
| Total number of cataract surgery registered to CSR | 1506 | 2266 |
| Cataract surgery with post-operative complication record | 1500 | 2251 |
| Ascertainment on post-operative complication (%) | 99.6 | 99.3 |
| Cataract surgery with visual outcome record | 1441 | 2183 |
| Ascertainment on visual outcome (%) | 95.7 | 96.3 |

### 3.5.2 Post-operative Infectious Endophthalmitis

Table 3.5.2-1:Post-operative Infectious Endophthalmitis, CSR 2013-2014

| Year | 2013 | 2014 |
|---|---|---|
| Eyes with post-operative complication records (N) | 1506 | 2251 |
| Eyes with post-operative infectious endophthalmitis (n) | 0 | 0 |
| Percentage of eyes with post-operative endophthalmitis (%) | 0.0 | 0.0 |

### 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 2013-2014

| Types of surgery | 2013 | | | | | 2014 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | n | Median | 25th percentile | 75th percentile | N | n | Median | 25th percentile | 75th 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 |

*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 2013-2014

| Types of surgery | 2013 | | | | | 2014 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | n | Median | 25th percentile | 75th percentile | N | n | Median | 25th percentile | 75th 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 |

*n = No. of available information*

### 3.5.4 Post-operative Visual Acuity

Table 3.5.4-1:Post-operative Visual Acuity, All Eyes, CSR 2013-2014

| Year | 2013 | | | | 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| VA | Unaided | | Refracted | | Unaided | | Refracted | |
| | n | % | n | % | n | % | n | % |
| 6/5 | 1 | 0.1 | 1 | 0.1 | 1 | 0.0 | 1 | 0.0 |
| 6/6 | 210 | 13.9 | 938 | 62.3 | 396 | 17.5 | 1339 | 59.1 |
| 6/9 | 448 | 29.8 | 267 | 17.7 | 710 | 31.3 | 469 | 20.7 |
| 6/12 | 212 | 14.1 | 65 | 4.3 | 342 | 15.1 | 113 | 5.0 |
| 6/18 | 222 | 14.7 | 38 | 2.5 | 254 | 11.2 | 40 | 1.8 |
| 6/24 | 81 | 5.4 | 21 | 1.4 | 126 | 5.6 | 25 | 1.1 |
| 6/36 | 89 | 5.9 | 11 | 0.7 | 128 | 5.6 | 20 | 0.9 |
| 6/60 | 81 | 5.4 | 18 | 1.2 | 91 | 4.0 | 20 | 0.9 |
| 5/60 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 4/60 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 3/60 | 37 | 2.5 | 8 | 0.5 | 52 | 2.3 | 10 | 0.4 |
| 2/60 | 15 | 1.0 | 1 | 0.1 | 28 | 1.2 | 1 | 0.0 |
| 1/60 | 7 | 0.5 | 2 | 0.1 | 20 | 0.9 | 1 | 0.0 |
| CF | 30 | 2.0 | 5 | 0.3 | 25 | 1.1 | 5 | 0.2 |
| HM | 11 | 0.7 | 2 | 0.1 | 10 | 0.4 | 4 | 0.2 |
| PL | 1 | 0.1 | 0 | 0.0 | 2 | 0.1 | 0 | 0.0 |
| NPL | 0 | 0.0 | 0 | 0.0 | 4 | 0.2 | 0 | 0.0 |
| Missing | 61 | 4.05 | 129 | 8.57 | 77 | 3.4 | 218 | 9.6 |
| **Total** | **1506** | **100.0** | **1506** | **100** | **2266** | **100** | **2266** | **100.0** |

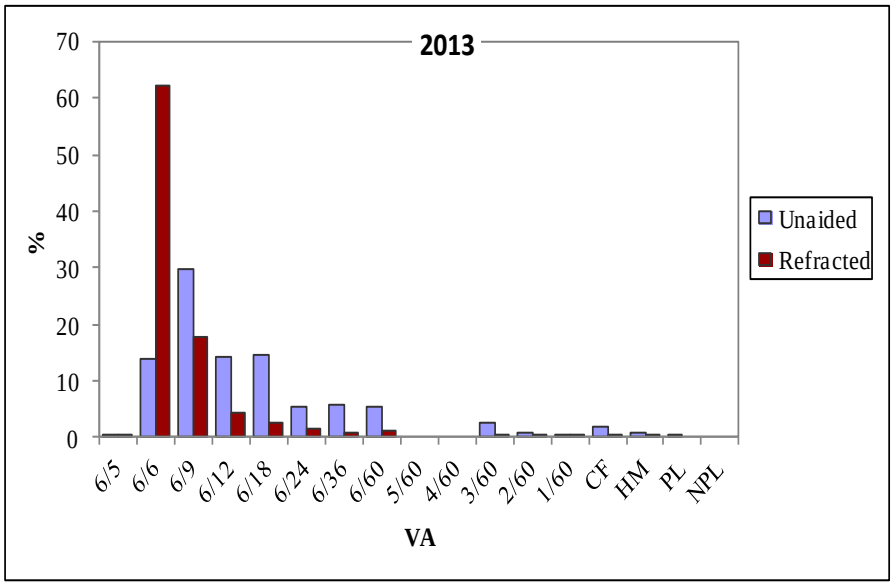


Figure 3.5.4-1:Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2013

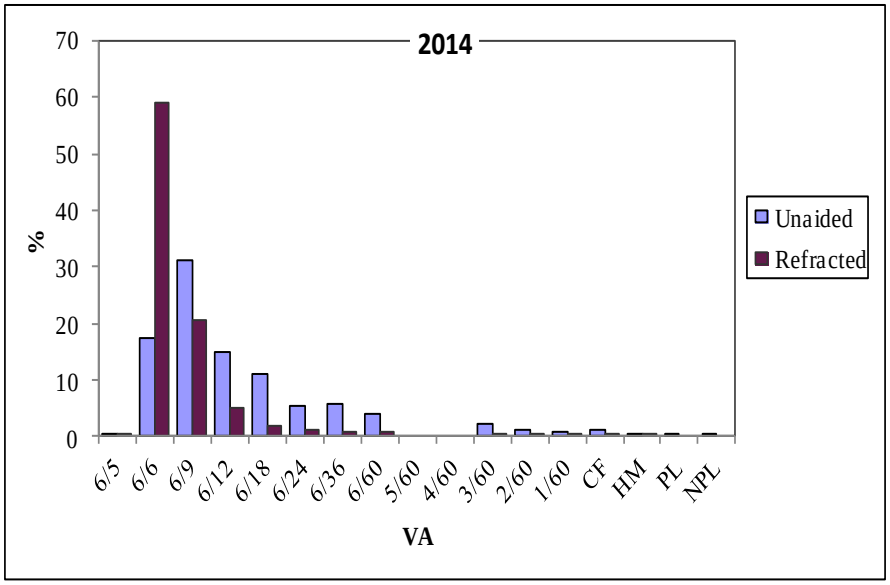


Figure 3.5.4-2:Distribution of Post-operative Unaided and Refracted Visual Acuity, All Eyes, CSR 2014

Table 3.5.4-2:Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013-2014

| Year | 2013 | | | | 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Unaided | | Refracted | | Unaided | | Refracted | |
| VA | n | % | n | % | n | % | n | % |
| 6/5 | 1 | 0.1 | 1 | 0.1 | 0 | 0.0 | 0 | 0 |
| 6/6 | 188 | 15.6 | 834 | 72.5 | 337 | 20.1 | 1,125 | 71.6 |
| 6/9 | 384 | 31.9 | 213 | 18.5 | 564 | 33.6 | 328 | 20.9 |
| 6/12 | 179 | 14.9 | 47 | 4.1 | 268 | 16.0 | 65 | 4.1 |
| 6/18 | 178 | 14.8 | 19 | 1.7 | 172 | 10.2 | 23 | 1.5 |
| 6/24 | 65 | 5.4 | 12 | 1.0 | 88 | 5.2 | 13 | 0.8 |
| 6/36 | 69 | 5.7 | 7 | 0.6 | 89 | 5.3 | 9 | 0.6 |
| 6/60 | 63 | 5.2 | 10 | 0.9 | 65 | 3.9 | 2 | 0.1 |
| 5/60 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 4/60 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0 |
| 3/60 | 25 | 2.1 | 3 | 0.3 | 38 | 2.3 | 3 | 0.2 |
| 2/60 | 12 | 1.0 | 1 | 0.1 | 21 | 1.3 | 0 | 0 |
| 1/60 | 6 | 0.5 | 0 | 0.0 | 16 | 1.0 | 0 | 0.0 |
| CF | 26 | 2.2 | 3 | 0.3 | 13 | 0.8 | 2 | 0.1 |
| HM | 8 | 0.7 | 1 | 0.1 | 7 | 0.4 | 1 | 0.1 |
| PL | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0 |
| NPL | 0 | 0.0 | 0 | 0.0 | 2 | 0.1 | 0 | 0 |
| **Total** | **1204** | **100** | **1151** | **100** | **1680** | **100** | **1571** | **100** |

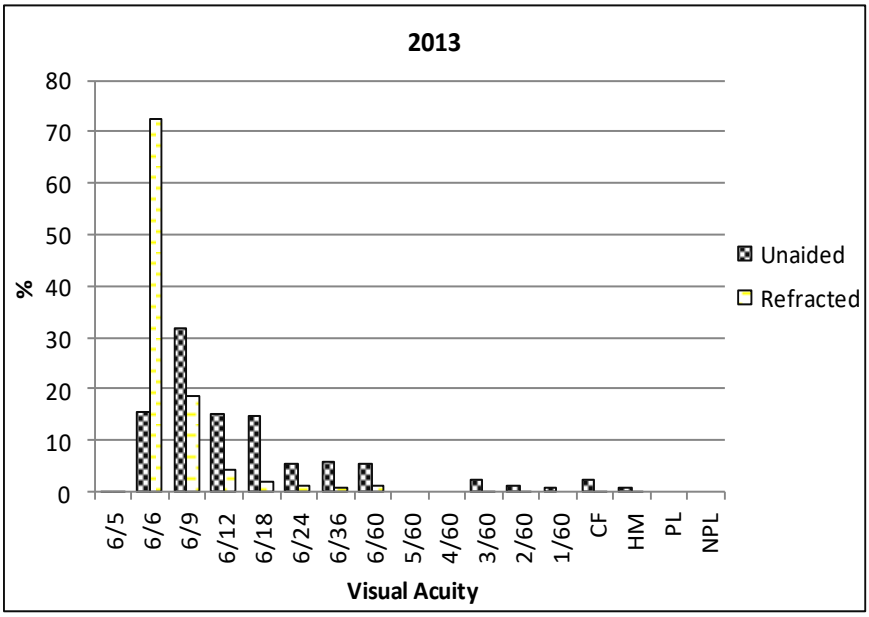


Figure 3.5.4-3:Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2013

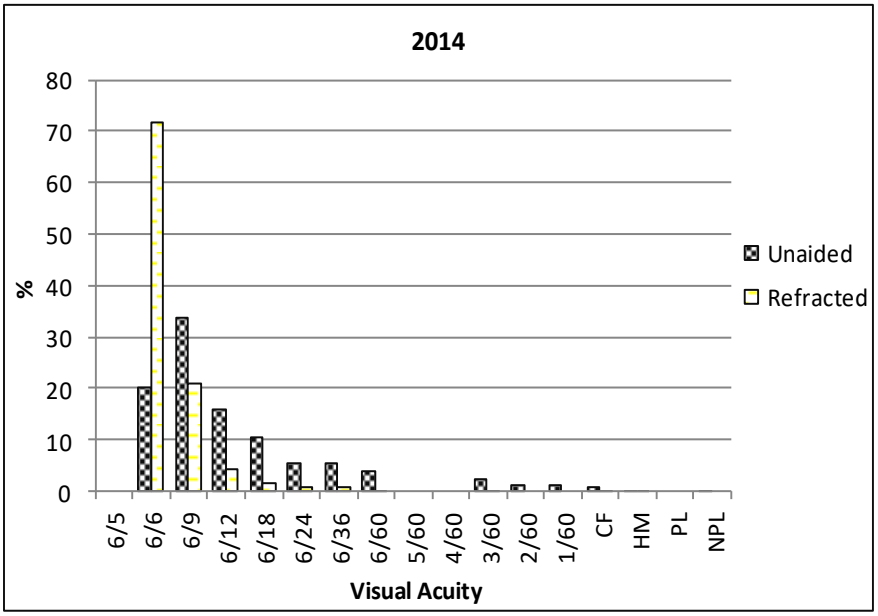


Figure 3.5.4-4:Post-Operative Visual Acuity for Eyes without Ocular Co-morbidity, CSR 2014

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 2013-2014

| | 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 |

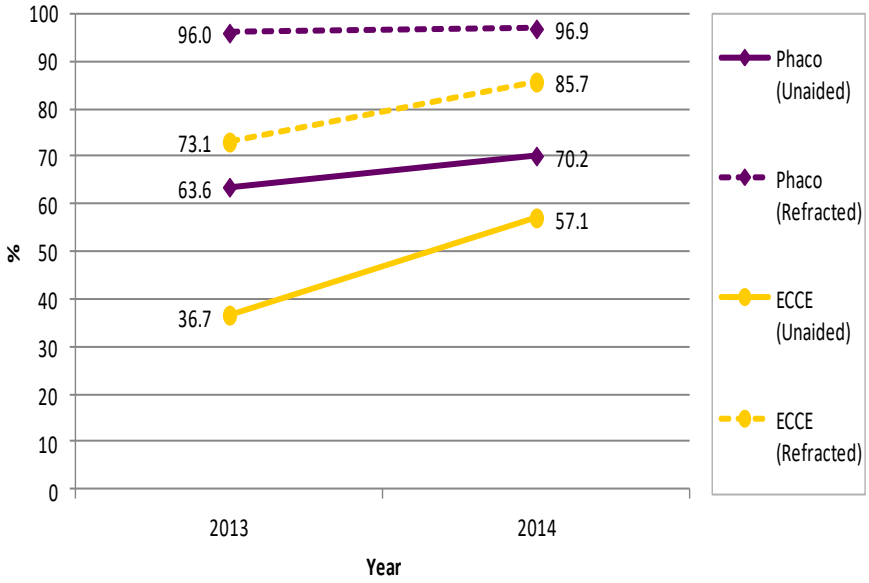


Figure 3.5.5-1:Post-operative Visual Acuity 6/12 or Better for Eyes without Ocular Co-morbidities by ECCE and Phaco, CSR 2013-2014

Table 3.5.5-2:Post-operative Refracted Visual Acuity 6/12 or Better in Eyes without Ocular Co-morbidities by Complications and Types of Surgery, CSR 2013-2014

| 2013 | Types of Cataract Surgery | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | | Lens Aspiration | | | ECCE | | | Phaco | | | Phaco → ECCE | | | ICCE | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| With intra-op complications | 24 | 17 | 70.8 | 0 | 0 | 0 | 2 | 1 | 50 | 13 | 11 | 84.6 | 8 | 4 | 50 | 0 | 0 | 0 |
| No intra-op complications | 1127 | 1078 | 95.7 | 2 | 2 | 100 | 24 | 18 | 75 | 1088 | 1046 | 96.1 | 10 | 10 | 100 | 1 | 0 | 0 |

| 2014 | Types of Cataract Surgery | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Surgeries | | | Lens Aspiration | | | ECCE | | | Phaco | | | Phaco → ECCE | | | ICCE | | |
| | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % | N | n | % |
| With intra-op complications | 36 | 28 | 77.8 | 0 | 0 | 0 | 0 | 0 | 0.0 | 23 | 19 | 82.6 | 12 | 8 | 66.7 | 1 | 1 | 100 |
| No intra-op complications | 1535 | 1490 | 97.1 | 1 | 1 | 100 | 7 | 6 | 85.7 | 1516 | 1472 | 97.1 | 10 | 10 | 100.0 | 1 | 1 | 100 |

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

Table 3.5.7-1:Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in All Eyes, CSR 2013-2014

| Year | 2013 | | 2014 | |
|---|---|---|---|---|
| Factors | n | % | n | % |
| N (total no. of post-op refracted vision worse than 6/12) | 106 | | 126 | |
| Preexisting ocular co-morbidity | 0 | 0.0 | 28 | 22.2 |
| High astigmatism | 0 | 0.0 | 2 | 1.6 |
| Posterior capsular opacity | 0 | 0.0 | 0 | 0.0 |
| Cystoid macular oedema | 0 | 0.0 | 3 | 2.4 |
| Endophthalmitis | 0 | 0.0 | 0 | 0 |
| Corneal decompensation | 0 | 0.0 | 0 | 0 |
| Decentered IOL | 0 | 0.0 | 0 | 0 |
| Retinal detachment | 0 | 0.0 | 1 | 0.8 |
| Others | 2 | 1.6 | 6 | 4.8 |

Table 3.5.7-2:Factors Contributing to Post-operative Refracted VA of Worse than 6/12 in Eyes without Preexisting Ocular co-morbidity, CSR 2013-2014

| | 2013 | | 2014 | |
|---|---|---|---|---|
| Factors | n | % | n | % |
| N | 56 | | 53 | |
| Preexisting ocular co-morbidity (not detected pre-operatively) | 0 | 0.0 | 6 | 11.3 |
| High astigmatism | 0 | 0.0 | 1 | 1.9 |
| Posterior capsular opacity | 0 | 0.0 | 0 | 0.0 |
| Cystoid macular oedema | 0 | 0.0 | 2 | 3.8 |
| Endophthalmitis | 0 | 0.0 | 0 | 0.0 |
| Corneal decompensation | 0 | 0.0 | 0 | 0.0 |
| Decentered IOL | 0 | 0.0 | 0 | 0.0 |
| Retinal detachment | 0 | 0.0 | 0 | 0.0 |
| Others | 2 | 3.6 | 4 | 7.5 |

3.5.8 Actual or Residual Refractive Power (Spherical Equivalent)

Table 3.5.8-1:Distribution of Target and Actual Refractive Power in ECCE and Phaco, CSR 2013-2014

| | Target Refraction | | Actual-Target Refraction | | Actual Refraction | | | |
|---|---|---|---|---|---|---|---|---|
| | All Patient | | All Patient | | ECCE | | Phaco | |
| | 2013 | 2014 | 2013 | 2014 | 2013 | 2014 | 2013 | 2014 |
| N | 990 | 862 | 870 | 658 | 29 | 18 | 1270 | 1693 |
| Mean | -0.3 | -0.3 | -0.1 | -0.1 | -0.4 | -0.3 | -0.5 | -0.5 |
| SD | 0.4 | 0.1 | 0.7 | 0.7 | 0.9 | 0.9 | 0.7 | 0.6 |
| Median | -0.3 | -0.3 | -0.1 | -0.1 | -0.5 | -0.3 | -0.5 | -0.5 |
| Minimum | -6.2 | -1.3 | -7.8 | -4.0 | -1.8 | -2.8 | -9 | -5.8 |
| Maximum | 0.4 | 0.3 | 8.3 | 9.1 | 2.8 | 1.8 | 3.8 | 8.8 |

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

Table 3.5.8-2:Percentage Distribution of Target and Actual Refractive Power in ECCE and Phaco, CSR 2013-2014

| | Target Refraction | | | | Actual Refraction | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Patients | | | | ECCE | | | | Phaco | | | |
| | 2013 | | 2014 | | 2013 | | 2014 | | 2013 | | 2014 | |
| **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 | 1 | 0.1 | 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 | 1 | 0.1 | 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 | 2 | 0.2 | 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 | 1 | 0.1 |
| -4.0-<(-3.5) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| -3.5-<(-3.0) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 3 | 0.2 |
| -3.0-<(-2.5) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 5.6 | 4 | 0.3 | 3 | 0.2 |
| -2.5-<(-2.0) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.4 | 4 | 0.2 |
| -2.0-<(-1.5) | 1 | 0.1 | 0 | 0.0 | 2 | 6.9 | 0 | 0.0 | 19 | 1.5 | 29 | 1.7 |
| -1.5-<(-1.0) | 1 | 0.1 | 3 | 0.3 | 4 | 13.8 | 1 | 5.6 | 104 | 8.2 | 145 | 8.6 |
| -1.0-<(-0.5) | 42 | 4.2 | 53 | 6.1 | 8 | 27.6 | 4 | 22.2 | 339 | 26.7 | 474 | 28.0 |
| -0.5-<0.0 | 936 | 94.5 | 802 | 93.0 | 6 | 20.7 | 4 | 22.2 | 522 | 41.1 | 683 | 40.3 |
| 0.0-<0.5 | 6 | 0.6 | 4 | 0.5 | 3 | 10.3 | 6 | 33.3 | 209 | 16.5 | 275 | 16.2 |
| 0.5-<1.0 | 0 | 0.0 | 0 | 0.0 | 4 | 13.8 | 1 | 5.6 | 46 | 3.6 | 55 | 3.2 |
| 1.0-<1.5 | 0 | 0.0 | 0 | 0.0 | 1 | 3.4 | 0 | 0.0 | 9 | 0.7 | 14 | 0.8 |
| 1.5-<2.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 5.6 | 4 | 0.3 | 4 | 0.2 |
| 2.0-<2.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| 2.5-<3.0 | 0 | 0.0 | 0 | 0.0 | 1 | 3.4 | 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 | 1 | 0.1 | 0 | 0.0 |
| 3.5-<4.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 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 | 1 | 0.1 |
| 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 | 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*

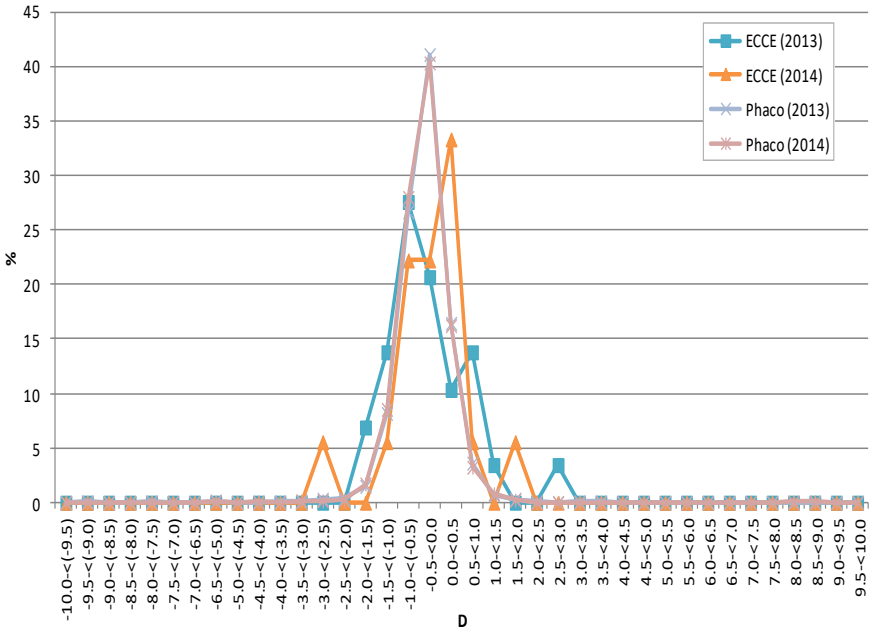


Figure 3.5.8-1:Distribution of Actual Refractive Power in ECCE and Phaco, CSR 2013-2014

Table 3.5.8-3:Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2014

| | Target Refraction | | | | Actual Refraction | | | | Difference between Target and Actual Refraction | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | | 2014 | | 2013 | | 2014 | | 2013 | | 2014 | |
| Power (D) | n | % | n | % | n | % | n | % | n | % | n | % |
| N | 936 | 100 | 841 | 100 | 1270 | 100 | 1693 | 100 | 829 | 100 | 642 | 100 |
| -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 | 1 | 0.1 | 0 | 0.0 | 1 | 0.2 |
| -4.0-<(-3.5) | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| -3.5-<(-3.0) | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 11 | 0.6 | 0 | 0.0 | 1 | 0.2 |
| -3.0-<(-2.5) | 0 | 0.0 | 0 | 0.0 | 4 | 0.3 | 28 | 1.7 | 1 | 0.1 | 1 | 0.2 |
| -2.5-<(-2.0) | 0 | 0.0 | 0 | 0.0 | 5 | 0.4 | 50 | 3.0 | 6 | 0.7 | 1 | 0.2 |
| -2.0-<(-1.5) | 1 | 0.1 | 0 | 0.0 | 19 | 1.5 | 101 | 6.0 | 9 | 1.1 | 5 | 0.8 |
| -1.5-<(-1.0) | 1 | 0.1 | 3 | 0.4 | 104 | 8.2 | 265 | 15.7 | 25 | 3.0 | 14 | 2.2 |
| -1.0-<(-0.5) | 39 | 4.2 | 50 | 5.9 | 339 | 26.7 | 653 | 38.6 | 145 | 17.5 | 103 | 16.0 |
| -0.5-<0.0 | 885 | 94.6 | 784 | 93.2 | 522 | 41.1 | 809 | 47.8 | 301 | 36.3 | 256 | 39.9 |
| 0.0-<0.5 | 6 | 0.6 | 4 | 0.5 | 209 | 16.5 | 355 | 21.0 | 259 | 31.2 | 194 | 30.2 |
| 0.5-<1.0 | 0 | 0.0 | 0 | 0.0 | 46 | 3.6 | 87 | 5.1 | 56 | 6.8 | 50 | 7.8 |
| 1.0-<1.5 | 0 | 0.0 | 0 | 0.0 | 9 | 0.7 | 20 | 1.2 | 18 | 2.2 | 13 | 2.0 |
| 1.5-<2.0 | 0 | 0.0 | 0 | 0.0 | 4 | 0.3 | 5 | 0.3 | 4 | 0.5 | 0 | 0.0 |
| 2.0-<2.5 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 3 | 0.4 | 1 | 0.2 |
| 2.5-<3.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| 3.0-<3.5 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| 3.5-<4.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 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 | 0.1 | 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 | 1 | 0.1 | 0 | 0.0 |

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

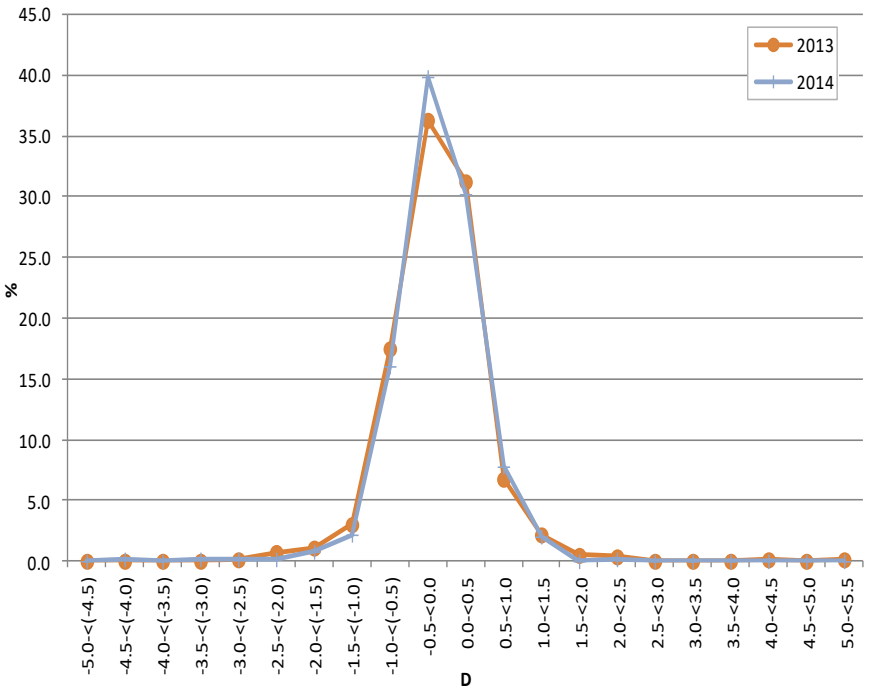


Figure 3.5.8-2:Difference in Target and Actual Refractive Power for Patients who had Phacoemulsification Only, CSR 2013-2014

Table 3.5.8-4:Difference in Target and Actual Refractive Power within ±1.0D, CSR 2013-2014

| Year | All | | | By Phacoemulsification | | | By ECCE | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±1.0D | | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±1.0D | | No. of patient with refracted VA | Difference between Target and Actual Refraction within ±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 |

*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 2014

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# 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 1 in 18,000 live births.

The retinoblastoma (RB) registry tracks all the patients diagnosed with Retinoblastoma since 2004 that were seen in 3 major RB treatment centers in the country; namely Hospital Kuala Lumpur (covering Peninsular Malaysia), Hospital Queen Elizabeth (Sabah) and Hospital Umum Kuching (Sarawak).

## 4.1 Stock and Flow

### 4.1.1 Stock and Flow

There are total of 170 patients registered, of which 17 patients were diagnosed in 2014.

Table 4.1.1-1: Stock and Flow

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hospital Kuala Lumpur | 8 | 10 | 12 | 19 | 11 | 13 | 11 | 5 | 10 | 25 | 13 | 137 |
| Hospital Queen Elizabeth, Kota Kinabalu | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 2 | 4 | 3 | 3 | 20 |
| Hospital Umum Kuching, Sarawak | 1 | 0 | 0 | 2 | 2 | 6 | 1 | 0 | 0 | 0 | 1 | 13 |
| Total | 9 | 10 | 12 | 21 | 14 | 19 | 19 | 7 | 14 | 28 | 17 | 170 |

## 4.2 Patient Demography

### 4.2.1 Age, Gender and Ethnics

The mean age at presentation was 2.2 years. The youngest age was 27 days and the oldest was 13 years. About a third (31.8%) of these patients was in the age group of 13 to 24 months and 24.7% were less than 12 months at presentation.

There were slightly more boys (55.9%) than girls affected, and the majority were of Malay ethnicity (57.7%), followed by Chinese (15.3%) and Indians (7.1%).

Table 4.2.1-1:Distribution of Patients by Age

| **Age, years** | ***n*=170** | |
|---|---|---|
| Mean (SD) | 2.2 (1.8) | |
| Median (IQR) | 1.9 (1.7) | |
| Min, max | 0.1, 13.0 | |
| **Age group** | **No.** | **%** |
| <12 months | 42 | 24.7 |
| 13–24 months | 54 | 31.8 |
| 25–36 months | 39 | 22.9 |
| 37–48 months | 21 | 12.4 |
| 49–60 months | 5 | 2.9 |
| >60 months | 9 | 5.3 |
| Total | 170 | 100.0 |

Table 4.2.1-2:Distribution of Patients by Gender

| Gender | No. | % |
|---|---|---|
| Male | 95 | 55.9 |
| Female | 75 | 44.1 |

Table 4.2.1-3:Distribution of Patients by Ethnics

| Ethnicity | No. | % |
|---|---|---|
| Malay | 98 | 57.7 |
| Chinese | 26 | 15.3 |
| Indian | 12 | 7.1 |
| Orang Asli | 1 | 0.6 |
| Melanau | 1 | 0.6 |
| Kadazan/ Murut/Bajau | 8 | 4.7 |
| Iban | 3 | 1.8 |
| Other | 17 | 10.0 |
| Missing | 4 | 2.4 |

## 4.3 Ocular History and Presentation

### 4.3.1 Ocular History and Presentation

The most common presentation was leukocoria(81.8%) followed by strabismus.

Table 4.3.1-1:Clinical Presentation

| Presentation | No. | % |
|---|---|---|
| Leukocoria | 139 | 81.8 |
| Strabismus | 26 | 15.3 |
| Proptosis | 13 | 7.6 |
| Others | 20 | 11.8 |

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

The mean duration of disease from onset of symptoms to presentation was 4.4 months with the majority (80.2%) within 1 to 6 months.

Table 4.3.1-2:Duration of Disease at the Time of Presentation

| | Months (*n* available=136) | |
|---|---|---|
| Mean (SD) | 4.4 (5.8) | |
| Median (IQR) | 2.0 (4.5) | |
| Min, max | 0, 36 | |
| | **No.** | **%** |
| <1 month | 2 | 1.5 |
| 1–6 months | 109 | 80.2 |
| 7–12 months | 18 | 13.2 |
| >12 months | 7 | 5.2 |

Of the 170 patients, 110(64.7%) had unilateral disease whereas 60 patients (35.3%) had both eyes affected. A total of 230 eyes were affected. Only 2 patient had positive family history of retinoblastoma.

Table 4.3.1-3:Eyes Affected

| | No. of patients | % by no. of eyes |
|---|---|---|
| Right eye affected only | 51 | 22.2 |
| Left eye affected only | 59 | 25.7 |
| Both eyes affected | 60 | 52.2 |
| Total eyes | 230 | 100.0 |

| Family history | No. | % |
|---|---|---|
| Yes | 2 | 1.2 |
| No | 151 | 88.8 |
| Missing | 17 | 10.0 |

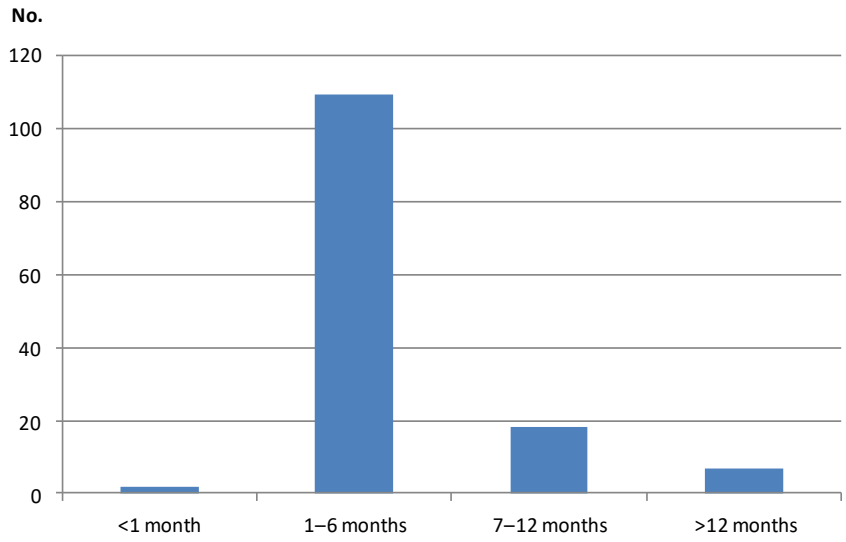


Figure 4.3.1-1:Onset of Disease

## 4.4 Investigation and Classification

### 4.4.1 Investigation and Classification

The presence of calcified mass was detected in 68.7% of CT scan imaging. In patients who had MRI done, 10.0% showed presence of mass but only 8.3% had calcification. There was extraocular extension detected through imaging in 23 eyes, 10% and 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=230)

| No. of eyes | | MRI scan | |
|---|---|---|---|
| | | Yes | No/NA/Missing |
| | | No. (%) | No. (%) |
| **CT scan** | Yes | 20 (8.7) | 160 (69.6) |
| | No/NA/Missing | 11 (4.8) | 39 (17.0) |

Table 4.4.1-2:Type of imaging done at diagnosis by patient (n=170)

| No. of eyes | | MRI scan | |
|---|---|---|---|
| | | Yes | No/NA/Missing |
| | | No. (%) | No. (%) |
| **CT scan** | Yes | 14 (8.2) | 120 (70.6) |
| | No/NA/Missing | 7 (4.1) | 29 (17.1) |

*NA=Not available*

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

| | **No.** | **%** |
|---|---|---|
| Yes | 158 | 68.7 |
| No | 22 | 9.6 |
| No CT scan/ NA/ missing | 50 | 21.7 |

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

| | **No.** | **%** |
|---|---|---|
| Yes | 23 | 10.0 |
| No | 8 | 3.5 |
| No MRI scan/ NA/ missing | 199 | 86.5 |

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

| | **No.** | **%** |
|---|---|---|
| Yes | 160 | 69.6 |
| No | 20 | 8.7 |
| No CT scan/ NA/ missing | 50 | 21.7 |

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

| | **No.** | **%** |
|---|---|---|
| Yes | 19 | 8.3 |
| No | 12 | 5.2 |
| No MRI scan/ NA/ missing | 199 | 86.5 |

Table 4.4.1-7:Presence of extraocular extension, by CT scan

| | **No.** | **%** |
|---|---|---|
| Yes | 23 | 10.0 |
| No | 157 | 68.3 |
| No CT scan/ NA/ missing | 50 | 21.7 |

Table 4.4.1-8:Presence of extraocular extension, by MRI scan

| | **No.** | **%** |
|---|---|---|
| Yes | 6 | 2.6 |
| No | 25 | 10.9 |
| No MRI scan/ NA/ missing | 199 | 86.5 |

Table 4.4.1-9:Type of extraocular extension, by CT scan

| | **No.** | **% (*n*=23)** |
|---|---|---|
| Optic pathway | 21 | 91.3 |
| Orbit and adnexa | 8 | 34.8 |
| Intracranial | 7 | 30.4 |

Table 4.4.1-10:Type of extraocular extension, by MRI scan

| | **No.** | **% (*n*=6)** |
|---|---|---|
| Optic pathway | 4 | 66.7 |
| Orbit and adnexa | 1 | 16.7 |
| 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 (54.8%) 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 | 6 | 5.4 | 4 | 3.4 | 10 | 4.3 |
| Group B | 6 | 5.4 | 10 | 8.4 | 16 | 7.0 |
| Group C | 8 | 7.2 | 6 | 5.0 | 14 | 6.1 |
| Group D | 19 | 17.1 | 12 | 10.1 | 31 | 13.5 |
| Group E | 53 | 47.8 | 73 | 61.3 | 126 | 54.8 |
| Not available/Missing | 19 | 17.1 | 14 | 11.8 | 33 | 14.3 |
| **Total eyes** | **111** | **100.0** | **119** | **100.0** | **230** | **100.0** |

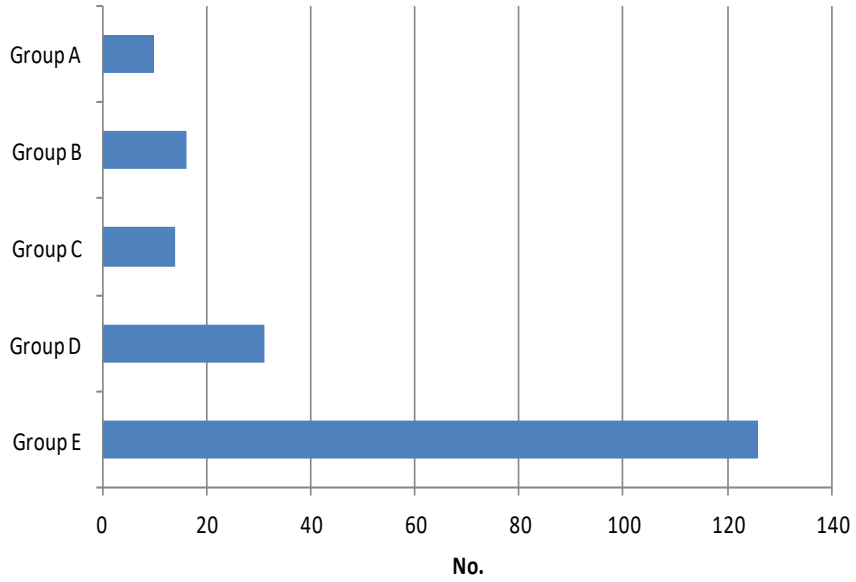


Figure 4.4.1-1:Disease Staging (IIRC)

## 4.5 Management and Outcome

### 4.5.1 Management and Outcome

60.6% of patients had systemic chemotherapy with a mean of 7 cycles (maximum 15 chemotherapy cycles). Of those with bilateral disease, 10 patients had ocular (7 subtenon and 3 intravitreal injection) chemotherapy together with the systemic chemotherapy.

82 out of 110 eyes (74.5%) with unilateral RB were enucleated with 41.8% of them showed histopathological extension outside the eyeball. Of the bilateral RB, 40.0% were enucleated. 9 patients had external beam radiotherapy.

Table 4.5.1-1:Table 3.5.1: Chemotherapy by patient

| | Unilateral (*N*=110) | | Bilateral (*N*=60) | | All (*N*=170) | |
|---|---|---|---|---|---|---|
| | **No.** | **%** | **No.** | **%** | **No.** | **%** |
| Had chemotherapy | 57 | 51.8 | 46 | 76.7 | 103 | 60.6 |
| Did not have chemotherapy | 33 | 30.0 | 6 | 10.0 | 39 | 22.9 |
| | No. | % (*n*=57) | No. | % (*n*=46) | No. | % (*n*=103) |
| Systemic chemotherapy | 55 | 96.5 | 45 | 97.8 | 100 | 97.1 |
| Subtenon injection | 0 | 0.0 | 7 | 15.2 | 7 | 6.8 |
| Intraviteal injection* | 0 | 0.0 | 3 | 6.5 | 3 | 2.9 |
| • Mean cycles given | 6.5 | | 7.6 | | 6.9 | |
| • Median cycles given | 6 | | 6 | | 6 | |
| • Minimum cycle | 2 | | 4 | | 2 | |
| • Maximum cycle | 13 | | 15 | | 15 | |

**All patients in the subgroup had systemic chemotherapy as well.*

Table 4.5.1-2:Table 3.5.2: Treatment method by no. of eyes

| | Unilateral | | | | | | Bilateral | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right (*n*=51) | | Left (*n*=59) | | All (*n*=110) | | Right (*n*=60) | | Left (*n*=60) | | All (*n*=120) | |
| | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** |
| Enucleation | 39 | 76.5 | 43 | 72.9 | 82 | 74.5 | 22 | 36.7 | 26 | 43.3 | 48 | 40.0 |
| HPE result: | | | | | | | | | | | | |
| Intraocular (no extraocular extension) | 16 | 31.4 | 13 | 22.0 | 29 | 26.4 | 5 | 8.3 | 0 | 0.0 | 5 | 4.2 |
| With extraocular extension | 19 | 37.3 | 27 | 45.8 | 46 | 41.8 | 13 | 21.7 | 1 | 1.7 | 14 | 11.7 |
| Missing | 4 | 7.8 | 3 | 5.1 | 7 | 6.4 | 4 | 6.7 | 25 | 41.7 | 29 | 24.2 |
| Focal therapy | 2 | 3.9 | 8 | 13.6 | 10 | 9.1 | 27 | 45.0 | 20 | 33.3 | 47 | 39.2 |
| Laser only | 1 | 2.0 | 4 | 6.8 | 5 | 4.5 | 11 | 18.3 | 12 | 20.0 | 23 | 19.2 |
| Cryotherapy only | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 1.7 | 1 | 1.7 | 2 | 1.7 |
| Laser & cryotherapy | 1 | 2.0 | 4 | 6.8 | 5 | 4.5 | 15 | 25.0 | 7 | 11.7 | 22 | 18.3 |
| Radiotherapy | 1* | 2.0 | 2 | 3.4 | 3 | 2.7 | 6 | 10.0 | 0 | 0.0 | 6 | 5.0 |
| External beam radiation (EBRT) | 0 | 0.0 | 2 | 3.4 | 2 | 1.8 | 6 | 10.0 | 0 | 0.0 | 6 | 5.0 |
| 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 1 case on subgroup of radiotherapy.*

Table 4.5.1-3:Table 3.5.3: Treatment method for all patients with chemotherapy

| | Unilateral | | | | Bilateral | | | |
|---|---|---|---|---|---|---|---|---|
| | Right eye | Left eye | All (*n*=57) | | Both eyes | Either one eye | All (*n*=46) | |
| | ***n*** | ***n*** | **No.** | **%** | ***n*** | ***n*** | **No.** | **%** |
| Enucleation | 24 | 26 | 50 | 87.7 | 4 | 35 | 39 | 84.8 |
| Laser therapy | 2 | 7 | 9 | 15.8 | 4 | 33 | 37 | 80.4 |

Table 4.5.1-4:Table 3.5.4: Outcome and complications, by no. of eyes

| | Unilateral | | | | | | Bilateral | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right (*n*=51) | | Left (*n*=59) | | All (*n*=110) | | Right (*n*=60) | | Left (*n*=60) | | All (*n*=120) | |
| | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** |
| Remission | | | | | | | | | | | | |
| Complete | 16 | 31.4 | 20 | 33.9 | 36 | 32.7 | 6 | 10.0 | 8 | 13.3 | 14 | 11.7 |
| Partial regression | 0 | 0.0 | 3 | 5.1 | 3 | 2.7 | 15 | 25.0 | 11 | 18.3 | 26 | 21.7 |
| No regression | 0 | 0.0 | 2 | 3.4 | 2 | 1.8 | 0 | 0.0 | 1 | 1.7 | 1 | 0.8 |
| NA/Missing | 35 | 68.6 | 34 | 57.6 | 69 | 62.7 | 39 | 65.0 | 40 | 66.7 | 79 | 65.8 |
| Recurrence | 0 | 0.0 | 4 | 6.8 | 4 | 3.6 | 9 | 15.0 | 7 | 11.7 | 16 | 13.3 |
| Duration from first time treatment (in months) | | | | | | | | | | | | |
| • *n* | 0 | | 4 | | 4 | | 8 | | 7 | | 15 | |
| • Mean (SD) | - | | 12.0 (7.4) | | 12.0 (7.4) | | 18.9 (8.0) | | 12.7 (12.4) | | 16.0 (10.4) | |
| • Median (IQR) | - | | 11.0 (12.0) | | 11.0 (12.0) | | 22.0 (11.0) | | 7.0 (19.0) | | 17.0 (19.0) | |
| • Min, max | - | | 5, 21 | | 5, 21 | | 5, 28 | | 4, 36 | | 4, 36 | |
| Complication | 3 | 5.9 | 6* | 10.2 | 9 | 8.2 | 10 | 16.7 | 3 | 5.0 | 13 | 10.8 |
| Socket /prosthesis related | 2 | 3.9 | 3 | 5.1 | 5 | 4.5 | 4 | 6.7 | 1 | 1.7 | 5 | 4.2 |
| Disease related | 1 | 2.0 | 2 | 3.4 | 3 | 2.7 | 6 | 10.0 | 2 | 3.3 | 8 | 6.7 |

**Missing 1 case on subgroup of complication.*

Table 4.5.1-5:Table 3.5.5: Outcome by patient

| | Unilateral (*n*=110) | | Bilateral (*n*=60) | | All (*n*=170) | |
|---|---|---|---|---|---|---|
| | **No.** | **%** | **No.** | **%** | **No.** | **%** |
| Lost to follow-up | 12 | 10.9 | 5 | 8.3 | 17 | 10.0 |
| Status by 1 year: | | | | | | |
| Alive | 53 | 48.2 | 30 | 50.0 | 83 | 48.8 |
| Death | 6 | 5.4 | 1 | 1.7 | 7 | 4.1 |
| Unknown/Missing | 51 | 46.4 | 29 | 48.3 | 80 | 47.1 |

4 eyes of the unilateral RB and 16 eyes in bilateral RB had recurrences. The earliest recurrence was noted at 5 months from diagnosis and the latest was at 36 months.

17 patients defaulted treatment and were lost to follow-up. Death was reported in 7 patients.

**Comment**

Since 2004, there were 170 patients registered in the RB registry with 230 affected eyes. In 2014, 13 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. 74.5 % of unilateral RB were enucleated. In bilateral RB, 40% of the patients had at least 1 eye enucleated. About 10% of eyes showed extraocular extension on CT scan imaging, involving mainly the optic pathway. HPE of the enucleated eyes showed 45.8% of unilaterally affected eye, and 11.7% 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. 9 patients needed external beam radiation due to the advanced stage of the disease.

13.3% of bilateral RB and 3.6% of unilateral RB reported recurrence of the disease with the mean duration of 16months after the initial treatment. About 10% of patients were lost to follow up, whereas death was reported in 7 patients.

As with other cancers, early detection of retinoblastoma and appropriate treatment can improve outcome.